

NEW MARKETS FOR A GREEN ECONOMY

Katoomba Workshop III

Proceedings and Summary of Key Issues

**Rio de Janeiro and Teresòpolis, Brazil
March 23-26, 2001**

Edited by Sara J. Scherr and Alejandra Martin

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1. Katoomba III: Background and Introduction

Since early 2000, Forest Trends has sponsored an international working group to spur the development of markets and market-based instruments for forest ecosystem services. The name comes from the place where the first working group meeting took place in Katoomba, Australia. Katoomba is said to be of aboriginal origin, deriving from a Gundungurra word meaning “falling waters”. The purpose of the Katoomba Group is to build our collective understanding of how market instruments for environmental services are constructed and the conditions in which they can work, to facilitate strategic partnerships, and to provide technical support to projects and processes of broad relevance. The group includes experts from forestry, finance, environmental research and policy, government officials and other private and non-profit sectors from all regions of the world.

The second meeting of the Katoomba Group was held in Parksville, Victoria Island, British Columbia, Canada, October 5-6, 2000. Proceedings of that meeting may be found on the Forest Trends website (www.forest-trends.org). The third meeting was held in Teresòpolis, Brazil, March 24-26. Of the 52 participants, 26 had participated in previous Katoomba Group meetings. A third of the participants were Brazilian or based in Brazil. The meeting was held in tandem with a half-day public conference entitled “New Markets for a ‘Green’ Economy: Carbon Credits and Forest Services”, held at the Training Center of the National Development Bank (BNDES), in Rio de Janeiro. This conference was designed to inform the broader Brazilian public of the opportunities for markets for environmental services, particularly for forest carbon. Over 150 were in attendance, from industry, forest companies, environmental groups and governments.

The specific objectives of the Katoomba III meeting were to:

- 1) Advance conceptual understanding of markets for environmental services, and the range of economic and market-based instruments currently being used and designed;
- 2) Pilot test an improved version of an interactive game on environmental markets for forests being developed by several Katoomba Group members (originally introduced in Katoomba II);
- 3) Introduce participants to innovative instruments for environmental service payments being developed in Brazil;
- 4) Exchange information among Katoomba Group members and seek opportunities for mutual support.

These proceedings were prepared to serve as a record of the meeting, to update the rest of the Katoomba Group not present at the meeting, and to highlight key issues raised for further discussion and follow-up. The report briefly summarizes these key issues, Brazilian experiences in using markets for environmental services (MES) to promote forest conservation, advances in the simulation game, and plans for the future.

Annex A summarizes comments made by participants on the Environmental Markets game. Annexes B and C present the agenda and synopses of presentations at the Rio

Conference, while Annexes D and E do the same for the Katoomba III workshop. Annex F provides a complete list of Katoomba III meeting participants and their contact information. Overheads from nearly all of the presentations have been posted on the Forest Trends website: www.forest-trends.org

2. Summary: Key Issues Discussed

Five main themes emerged from discussions at the Katoomba III Workshop:

Advances in the Development of Markets for Environmental services (MES)

Even in the short period since the Katoomba Group was first formed, there have been significant advances in the development of markets for environmental services from forests. Markets for carbon emission offsets developed quickly in anticipation of the implementation of the Kyoto Protocol, and then moved in some new directions since it became clear that a global system would probably be several years away. Examples are “bottom-up” trading groups in the private sector and voluntary capped trading programs. Carbon trading has high potential for the Amazon, but remains controversial and politicized, as indicated by discussions in the Rio Conference.

Several group members in Australia and Brazil, including public agencies, NGOs and private firms, are currently negotiating business deals for biodiversity conservation. Other members described environmental payments for water services already in operation in Brazil, Costa Rica, France, and the United States, and others are being designed in Australia and El Salvador. In general, transaction costs have been higher than expected, for monitoring, community participation and conflict management. Prices tend to be politically determined, rather than related to value. In the case of water, there is still considerable debate about the linkages between land use and water service outcomes, and the value of forest versus other perennial land cover in protecting water services.

Where there is geographic congruence in environmental service supply, there may be big advantages in integrating payments for multiple services, rather than depending on one, an approach being pursued in New South Wales, Guyana, and British Columbia. While international buyers for environmental services may promise large potential transfers (particularly for carbon), focusing on domestic buyers for services may be more sensible and manageable in many countries.

Meeting Information Needs of MES

During Katoomba II, there was considerable discussion about institutions being developed to support MES. Katoomba III documented progress that has been made in the development of Information Services, for both suppliers and buyers of environmental services. A land and carbon inventory system for Canada is now operational. An environmental registry for carbon deals is under development, as is a clearinghouse for

information on water services. Members discussed how the Katoomba Group could contribute to further development of these and other information services.

Landscape Planning and Management for MES

In many cases discussed at Katoomba III, there was an important link between successful development of markets for environmental services, and broader landscape planning and governance. Regional and landscape planning are especially important to identify sites of special importance for biodiversity or watershed conservation. Some actors need to be able to tolerate the high transaction costs associated with building new markets.

Building a strong local stewardship ethic among local people has been central to success in several programs. Sometimes this can be done more effectively by private enterprises that can demonstrate profitable opportunities for conservation. Opportunities for local input into planning were considered essential for private biodiversity investments and fire control in the Amazon, payments for salinity services in Australia, and water markets in El Salvador. Planning processes may be facilitated by professionals, but final decision-making should be democratic (this characterizes urban planning processes much more often than rural planning processes, which tend to be more bureaucratic). Members debated what to do in cases where quick action is needed, over a defined geographic area, to avoid wild species extinction (or environmental disaster, such as flooding), and there is insufficient time to build such community support, or convince those who hold back participation. Various approaches were discussed to build expertise in community organizing for environmental conservation and markets for services, including apprenticeships in successful programs.

New Business Strategies for MES

The discussions in Katoomba I and II centered mostly on the supply side of markets for environmental services. At Katoomba III, there was more discussion of the demand size, particularly for business investments. The group identified some “non-traditional” investor options for environmental services, including “philanthropic investors” (especially from among the “super-rich), “direct retail conservation”, Buyers’ Groups for environmental services among government agencies; private equity funds focused on sustainability; and other investors interested in “triple bottom line” investments. Several members emphasized the importance of creating demand, through creative product differentiation and personal discussion. Innovative insurance policies could provide a way to reduce investor risks.

Addressing Equity and Poverty in MES

Issues of equity and poverty reduction in relation to MES were little addressed in earlier Katoomba Group meetings. However, it became clear through informal interactions at the Katoomba Group II meeting that many members were actively involved in addressing poverty issues through their work with MES. During Katoomba III, several of the formal presentations directly addressed equity issues. Community-company partnerships in

forestry markets for environmental services are being established around the world. The design of property rights for environmental services has important equity implications for different systems. Examples were presented of how private companies, NGO's and government agencies are modifying the way they work in order to ensure benefits for the poor from emerging markets. In concluding discussions of the workshop, several members recommended that the Katoomba Group address equity issues more explicitly in its work.

3. MES Case Studies in Brazil

The Brazilian venue for the Katoomba Group meeting offered a valuable opportunity to examine the current and potential role of markets for environmental services in conserving two of the world's most important and threatened forest resources: the Amazon and Atlantic Forests.

Amazon Forest

Major new initiatives have been undertaken recently in the Amazon that are more favorable to conservation of environmental values. In the Rio Conference, several presentations highlighted the aggressive ongoing search for markets for environmental services and sustainably produced products. It seems clear that major institutional changes and public investments will be needed to enable the development of these markets. Innovations already on the ground or under development include the Amazon Monitoring Project, rural development zones, investments in sustainable extractive industry, timber certification, credit for sustainable agricultural and agroforestry systems, community organization for fire control, and tradeable development rights for biodiversity conservation.

Atlantic Forest

While Brazil's Atlantic Forest is less well known to the general public, it is far more threatened than the Amazon, with only 7 percent of its original extent left and far greater pressure from population and real estate development. Innovative approaches to conservation include participatory planning for a Biodiversity Corridor, and provision of technical assistance in farming in exchange for setting aside reforestation areas.

4. The Environmental Trading Game

An interactive simulation "game" for markets for environmental services—a scenario planning tool--was piloted at Katoomba II. Various landowner groups within a watershed in an Australian setting make land use decisions and sell environmental services from forests to various buyers, over a 20-year time period, seeking to supplement their revenues from commodity markets. In response to feedback from the group, the game was significantly improved for Katoomba III. The new version has a

flexible “input” module that enables quick specification for any new landscape, as well as a calculation module and a results module. Key modifications include computerized financial spreadsheets and land use maps, incorporation of spatial elements, landscape-scale analysis, credit, degradation and growth functions, and a registry for “deals.” The built in flexibility means that a potential Game Master may take the input module and specify all the above features to fit a real landscape for which they have data. The scale, number of land units, topography, extent, land use options, costs, yields, prices, and land owners can all be specified and varied..

For Katoomba-III, a watershed in the endangered Atlantic watershed was simulated. Landowner groups ranged from impoverished farmers on marginal lands, with no access to credit, to rich agribusiness companies with deep pockets. Buyer groups included a large hydroelectric plant, an international environmental conservation organization, and a city water company. Coefficients used were based on real data from Brazil. The game has turned into an excellent tool for learning how environmental service functions work, and for analyzing the impact of different design features of markets for environmental services, or different land use conditions. Annex A summarizes some insights emerging from the game about markets for services, and recommendations for future development of the game.

Forest Trends will handle arrangements governing legal use of the game for profit and educational purposes. Those involved in developing the game will be asked to sign a letter turning over their certain rights to the game to Forest Trends, retaining the right to use in their own setting.

5. Future Plans for the Katoomba Group

London Conference

The next meeting of the Katoomba Group is planned for England in October 24-27th, 2001. The venue for the public conference will be London, which was selected in hopes of influencing the important financial community based there, and drawing other potential buyers and investors for environmental services from nearby Europe.

We are hoping to have a number of outputs ready for dissemination in London, including:

- The Markets for Environmental Services simulation game;
- Several investment deals packaged and ready for negotiation (by Katoomba members, including Jim Shields, Carl Binning and Phil Cottle);
- Several “Briefs” on key markets for environmental services that answer questions of interest to investors, for example (from Tony):
 - Situational analysis, with respect to solution (very short)
 - Background (what is the product?)
 - Finance (strategic variables, financial impact, uncertainties)
 - Milestones in development of the market, key actors, transaction costs (get credibility)

- “close”—how can you engage in this market and what are the benefits?
- Reference to the website.
- Katoomba Group website

Katoomba IV

The Katoomba IV workshop following the Conference will be held in a more rustic setting outside the city. Katoomba III participants made some recommendations for Katoomba IV in relation to *process*:

- Set more concrete goals for the Katoomba Group;
- Initiate discussion of goals and meeting topics by e-mail prior to setting the meeting agenda;
- Pre-identify products expected from the meeting;
- Identify and invite participants from Africa and Asia, and more from Europe;
- Invite more participants from the private sector (consider what would draw them to participate);
- Circulate lecture-type notes before the meeting, to maximize discussion time and minimize presentations
- Consult with experts in facilitation to get advice on effective methods to achieve goals at Katoomba IV meeting and in follow-up collaborative activities.

Participants also made some recommendations on possible products from Katoomba IV (and some, indicated below, volunteered to lead the work):

- Develop an environmental service Registry (Ben Feldman, Carl Binning, Jim Shields, Forest Trends);
- Evaluate equity issues and develop ideas on promoting community partnerships (Josh Bishop, Sara Scherr, Simone Mangal, Herman Rosa);
- Develop impact monitoring and evaluation indicators for markets for environmental services/payment systems (Patricia Moles, Sara Scherr, Eric Schroff, Carl Binning)
- Design a proposal for an information clearinghouse on environmental services (Bruce Aylward, Forest Trends)
- Plan a public awareness campaign on markets for environmental services (Tony Lent, Kathy Ellison, Sara Scherr)
- Develop new strategies to market environmental services to investors (Ian Powell, Adam Davis, Tony Lent, Jim Shields)
- Develop objectives and design for a Katoomba Group book or other publication (Michael Jenkins, Sara Scherr, Andy White, Stefano Pagiola)
- Evaluate a list (compiled prior to meeting) of private equity funds working on sustainability, and of successful environmental trades (Tony Lent, Jim Shields)
- Identify priority landscape management and governance issues in relation to MES (Herman Rose, Carl Binning, Sara Scherr)
- Develop plan to promote Markets for Environmental Services simulation game (Chetan Agarwal, Adam Davis, Ian Powell)

- Develop strategy for the Katoomba Group website (and possibly a CD-ROM for those without internet access).

Annex A. Comments on the Environmental Service Market Game

The improvements to the game worked extremely well, making the game easier to play and much more powerful. Some insights from the game regarding markets included:

1. Evaluate the impacts of transparency versus “secret” deals, for example the use of posted prices or public bids.
2. A very profitable land use will always swamp other land uses and environmental services in decision-making
3. Note differing views on what type of land management would provide the environmental services wanted by buyers, serious problems where buyers’ objectives were unclear.
4. It would have been valuable to have a central agency to “bundle” deals among environmental service buyers. This illustrated the potential value of having a registry (discussed above).
5. Lots of time was spent on price discovery; having brokers would have been very helpful
6. Environmental service buyers needed information on rates of return to different land uses, for example, from agricultural extension services.
7. Development of a cartel among several buyers for different environmental services meant they were not interested in landowners who could offer only one type of environmental service.
8. High uncertainty inhibited change.
9. Establishment (or not) of trust between buyers and sellers strongly influenced willingness to make deals. Trust was influenced both by initial bargaining behavior and inter-cultural communication issues.
10. The game provided some insight into real bureaucratic behavior: buyers first paid farmers to regenerate trees, and then to chop them down (due to changing scientific information)—one participant said “just like in Australia.”
11. We need to explore the model of secret negotiations (e.g., where sellers do not have any idea how much money buyers have to spend) versus a model of known goals and financial constraints. Would clear rules defining equivalent units give a better result?
12. Landowners need more information on production technology, and what effects environmental changes will have on production.

Some recommendations made regarding the game design were:

1. Prepare a PowerPoint presentation illustrating how to fill in the spreadsheets, calculate profits, etc.
2. Provide pre-training to computer user members of each group, to save group time.
3. Consider sending out game scenarios ahead of time to members, so they can be reviewed, also to save group time.
4. Consider other analytical tools besides spreadsheets to look at profit options.
5. Write paper on power of the game as a learning tool
6. Use as a simulation for NRM business
7. Sell the game experience.
8. The game needs to include an environmental performance assessment.
9. Find ways to make the buyers more players in the game, rather than a tool of the game.
10. Might consider using “monopoly” money to make transactions seem more real.
11. Environmental service buyers need their own spreadsheets.
12. Consider including land values in the game, and real estate cost function.
13. Consider including an ecosystem service function “meter” for different land uses.
14. Prepare Briefing Book, building in crucial variables; provide ahead of time; tailor to the different roles.

Annex B. AGENDA

NOVOS MERCADOS POR UMA ECONOMIA 'VERDE': CREDITOS DE CARBONO E SERVIÇOS FLORESTAIS

NEW MARKETS FOR A GREEN ECONOMY: CARBON CREDITS AND ENVIRONMENTAL SERVICES OF FORESTS

March 23, 2001
BNDES Training Center

Welcome remarks

Michael Jenkins, Forest Trends
Peter May, PróNatura
Roberto Smeraldi, Amigos da Terra
Isaura Frondizi, BNDES
Marcelo Carvalho de Andrade, Axial Par

The Prototype Carbon Fund and the Global Carbon Market

Kenneth Newcombe, Prototype Carbon Fund, World Bank Group

Brazil's role in the CDM

Fabio Feldmann, Forum Nacional de Mudanças Climáticas

Delivering the Greenhouse Gas Market

Alice LeBlanc, Senior Economist, Environmental Financial Products, Chicago

Forest Ecosystem Services and Markets for the Amazon

Mary Alegretti, Secretary, Amazon Coordination, MMA

Annex C
Synopses of Presentations
“New Markets for a ‘Green’ Economy:
Carbon Credits and Environmental Services of Forests”

WELCOME PRESENTATIONS

Michael Jenkins, Forest Trends

Michael welcomed the audience on behalf of Forest Trends. He briefly outlined the genesis of Forest Trends and emphasized their focus on markets and finance as agents of forest conservation. The Katoomba Group goals were explained.

Roberto Smeraldi, Amigos da Terra

Roberto discussed a range of instruments that could be used for forest conservation in the Amazon, and the development of new legislation and norms. Greater public awareness is needed, as well as new market instruments that are now being explored. More than 60 companies are now producing certified wood, and demand is greater than supply. Instruments are needed that also guarantee local people access to environmental services.

Peter May, Pro-Natura

Peter described several Pro-Natura projects in Brazil. They are working in the Biodiversity Corridor of northern Fluminense and the Cordao do Mata in the Atlantic Forest to intensify agricultural production to reduce pressure on the forests. They use participatory processes so that local people are part of the solution, not just victims, thus emphasizing non-regulatory methods. Pro-Natura is also working in the northwest in Mato Grosso in agroforestry, on activities such as ecological/economic municipal zoning, carbon sequestration and certified forest management.

FOREST CARBON

The Prototype Carbon Fund and the Global Carbon Market

Kenneth Newcombe, Manager, Prototype Carbon Fund, The World Bank

Ken provided a detailed description of the current state of the global carbon market, and the key issues that will affect the shape of the market in coming years. Despite the breakdown of the last COP, the market is still building. COP meetings are scheduled for July and November. Most markets build from the bottom up—changes in design of national carbon trading will influence the ultimate design of the international system. LDC potential carbon offsets are higher than the shortfall in OECD emissions targets. The critical constraint to supply of land use-related carbon is capacity for negotiation, lack of legislative infrastructure, and the necessary private market infrastructure for aggregation and intermediation to reduce transaction costs. Carbon prices will likely to be around \$20/ton C, but won't be above \$5/ton until 2005. Most developing countries will not participate in carbon trade unless sinks for land rehabilitation are permitted, and certification can be made at the landscape, rather than farm level. The Prototype

Carbon Fund provides a “training ground” for carbon projects. Their portfolio is 20-25 projects worth \$145 million. The definition of “additionality” is a key issue.

The Role of Brazil in the Global Climate Change Convention

Fabio Feldmann, National Forum on Climate Change

The Forum promotes dialogue between government and society on climate change. A major concern is the bureaucratic function of the international institutions and a complex CDM. They content that the guidelines should be developed through multilateral negotiations. A concern about CDM is whether it will threaten the main objective of reducing fossil fuel emission in OECD countries. Brazil would like to see penalties of \$10/ton for all carbon emitted over the limits set. Brazil will be heavily affected by carbon policy, but unclear impact on competitiveness and poverty.

Structuring the Emerging Market for Carbon

Alice LeBlanc, Senior Economist, Environmental Financial Products, Chicago

Alice described the objectives and activities of Environmental Financial Products, a private firm to finance environmental investments. The Dow Jones Sustainability Index of companies that screen on environmental performance significantly outperformed the S&P 500 companies. She also argued for “bottom-up” market development and described two “natural” trading groups already developing through mutual interests and ideology: the “Umbrella Group” and the European Union. An “International Council of Local Environmental Initiatives” has been organized with major corporations. They have identified 17 examples of carbon trading activities. For CDM rules to help attract investors, they must be simple and standardized, transparent, and create options for small-scale projects. U.S. legislation on domestic carbon markets is being reintroduced now, including early reduction credit proposals, “4 pollutant” bills. The Chicago Climate Exchange is being developed as a voluntary capped trading program, starting in the Midwestern U.S. The exchange should demonstrate that carbon trading is affordable and beneficial for industry.

Guaranteeing Environmental Services in the Amazon Forest

Mary Allegretti, Secretary of Amazon Coordination, MMA

Mary described various activities that are developing in the Amazon to add value to the standing forest. The major opportunities are in markets for environmental services; new institutions must be designed to take advantage of them. There are also major opportunities to enhance the economic contribution of timber activities, but the government has an important role to play in fighting illegal logging, and reducing the many rules that reducing profitability. A third key element is establishment of protected reserves on much larger areas than the current 10%. In August 2001, the Amazon Monitoring Project will become operational and make forest protection a much lower-cost activity. In Maranhao State, a modern approach is being applied to control deforestation through the “Rural Development Zones”. More must be done to help small cooperatives and rural producers undertake sustainable extractive production. It is important to leave behind the false premise of much policy, that “to generate jobs, you have to destroy the forest”.

Annex D
Katoomba Group Workshop III
Teresopolis, Brazil, March 24-26, 2001
Hotel Fazenda Rosa dos Ventos
Teresópolis, RJ, Brazil

AGENDA

Day One

Welcome and Introductions

Michael Jenkins, Forest Trends
Andy White, Forest Trends
Peter May, Pro-Natura
Marcelo Carvalho de Andrade, Axial Par

Role of markets in Forest Fires: The case of the Amazon forest

Dan Nepstad, Wood Hole Research Institute
Luciano Mattos, IPAM
Carlos Eduardo Young, UFRJ

Fire Prevention and Control in the Amazon

Cecilia Ferraz and Mario Monzoni, Amigos da Terra - Amazônia Brasileira

Introduction to Environmental Services Game

Ian Powell, Adam Davis, Chetan Agarwal

Day Two

Investing in the Management of Forest Watersheds: Precautionary 'Rules of Thumb'

Nels Johnson, WRI

Establishing Property Rights in Environmental Services

Sara J. Scherr, University of Maryland

Water case study in Mata Atlântica, Brazil

Peter May, PróNatura

Institution Building: the Creation of a Water Agency in Brazil

Herbert Schubert, National Water Agency, Brazil

Water Panel- Experiences beyond Brazil

Luis Gamez, Ministry of Environment, Costa Rica

Herman Rosa, PRISMA, El Salvador

Stefano Pagiola, World Bank

Proposal for an Information Clearinghouse on Forests and Water: Markets, Economics and Hydrology

Bruce Aylward, Independent Consultant

Facilitating Investment, a Role for Insurers? Insuring the Performance of Certified Sustainable (Forest Projects)

Phil Cottle, PartnerRe Ltd.

Developing an Environmental Registry

Ben Feldman, Environmental Resources Trust

Report from Vancouver

Gary Bull, University of British Columbia

Eric Schroff, isaak Forest Resources

Day Three

Markets for Forest Environmental Services: Preliminary Findings

Josh Bishop, IIED

Biodiversity Panel

Ken Chomitz, World Bank

Jim Shields, Forest Services, Australia

Patricia Moles, A2R, Brazil

Carl Binning, CSIRO Wildlife and Ecology

Feedback from Environmental Services Game

Group Discussion

**Annex E. Synopses of Presentations, Katoomba Group Workshop III
March 24-26th, 2001, Hotel Fazenda Rosa dos Ventos, Teresópolis, RJ, Brazil**

Day One

FIRE CONTROL

Role of markets in Forest Fires: The case of the Amazon forest

Dan Nepstad, Wood Hole Research Institute

The fires in the Amazon create cycles of impoverishment. The costs of these fires are estimated to be 0.3% of the Amazon GDP due to sickness and death. The future environmental direction of road BR163 is grim. In one section of the road the towns are not as close to each other, there are indigenous reservations, and national forests interspersed, but in the other half of the road, the towns are very close to each other and the economic activities involve black pepper production, bananas, heart of palm, ecotourism and increased logging industry activities. These diverse industries are pushing for paving the road to reduce transportation costs. Deforestation licensing may be an option. A fire moratorium is suggested to regulate the no-burn period according to the time of day. Compliance can be monitored through remote sensing of "hot" pixels. Indigenous lands comprise 12% of the road territory. By strengthening their rights over these lands, we can move away from command and control, to local governance at the municipal level, encouraging organic farming, controlled logging and "green" management. They have found low impact logging to be as profitable as high impact logging.

Using Credit to Promote Sustainable Farming Systems in the Amazon

Luciano Mattos, IPAM and Carlos Eduardo Young, UFRJ

A proposal was presented to convert an agricultural credit program, using a new Fund established by the Brazilian constitution-into an environmental credit program, with a focus on subsistence farmers. They question the validity and targeting of current agricultural subsidies. Does credit help or hinder sustainability? A simulation model developed to analyze capital flows in form of loans for carbon benefits illustrates the generation of environmental services.

Fire Prevention and Control in the Amazon

Cecilia Ferraz and Mario Monzoni, Amigos da Terra - Amazônia Brasileira

An extension program to prevent forest fires has been established in the states of Pará, Mato Grosso, and Acre. The objective is to introduce fire to the community development agenda by integrating emergency and preventive actions. There are health and training components. By carrying out public commitments to reduce fire (through signatures in public spaces), a mechanism of checks and balances is carried out by all stakeholders. Voluntary protocols agreed to by diverse stakeholders have been signed in 5 of 11 municipalities. Reduction of hot spots has occurred since the system has been in place. An environmental education component has been crucial to reach community members of all ages.

Day Two

WATER SERVICES IN BRAZIL

Investing in the Management of Forest Watersheds: Precautionary 'Rules of Thumb'

Nels Johnson, WRI

Markets for water services are likely to increase. Sixty percent of all terrestrial precipitation falls over forest areas and most urban populations are downstream. Forest management can be compatible with management for timber. However, this is very site specific and there is little empirical data on the interaction between forests, land use and hydrology. Willingness to pay is also unclear and property rights and responsibilities are poorly defined. In addition, monitoring and adaptive management practices are difficult to fund. There is a growth in policies and projects that emphasize forestry as a solution to water problems. Cases were presented from France, Costa Rica, Brazil, Colombia and the U.S. Based on that experience, some rules of thumb can be defined for biophysical, economic, social and operational issues of watershed management.

Water Case Study in the Mata Atlântica, Brazil

Peter May, PróNatura

The last remnants of the Atlantic forest are located in private lands where coffee growing and pastures are interspersed. There is low productivity of dairy herds, extensive pasture managed by burning and low soil moisture and streamflow. Pró-Natura is working on herd improvement, fodder and silage, and increasing milk yield. This has reduced pressure on pasture expansion and created a commitment to reforestation and regeneration by landowners. The second component focuses on water valuation. The organization has formed focus groups to study how much water is worth, identify the users and current conflicts. The plan is to enable the conditions for trade with forest landowners. Is it possible to come up with a proxy for willingness to pay? Value transfer options are also considered.

Institution-Building: the Creation of a Water Agency in Brazil

Herbert Schubert, National Water Agency, Brazil

A constitutional mandate for watershed use in Brazil, established in 1997, supersedes previous state regulations. Based on the French system, the polluter pays. This national policy for water resources lays the foundations to consider water as a public good. However, the implementation of the law seeks to meet local needs and conditions. The territorial unit becomes the management unit, emphasizing the role of municipalities. For example, in Paraíba do Sul, the classification of the water board is according to types of use and the water quality conforms to rigorous guidelines. They are trying to establish financial incentives to maintain water quality and quantity. The Agency will contract directly with private or public plants; 50% of the payment is guaranteed; they can then look for financing in the market. If quality standards are not met, the Agency will not pay.

WATER PANEL- EXPERIENCES BEYOND BRAZIL

Paying for Water Services in Costa Rica

Luis Gamez, Ministry of Environment, Costa Rica

Costa Rica has created Trust Funds, which representatives of clients of utilities use to pay private forest owners. In one year of experience, they have collected \$500,000. There is considerable willingness to pay for local water services. People do feel they are helping to prevent deterioration of their water systems. "Don't wait to touch bottom before you start swimming." They have used the environmental service system already in place, but limited the payments to water. The contract is the same as for carbon sequestration, in paying for forest protection. Payment is \$100/hectare/year, not from government, but from citizens of the cities whose water is protected.

Paying for Water Services

Stefano Pagiola, World Bank

Upstream actions affect quantity and quality. Past experiences with landowner for watershed protection have largely failed because they have not been adequately compensated. They need to sell these services and for this to occur, we need to buy these services. Examples of these schemes are present in Costa Rica, Colombia, Ecuador, and El Salvador. Currently, the World Bank through a loan provides the government of El Salvador with guidance on institutional strengthening, developing a system of payments for environmental services (e.g. legal, regulatory, financial, implementation aspects), and technical information (flood prevention services, sediment reduction services, and biodiversity corridors). This program has three main bodies: the technical committee that oversees the fund and the field agency. The field agency works with landowners who in turn sell their environmental services to beneficiaries.

Paying for Water Services in El Salvador

Herman Rosa, PRISMA, El Salvador

El Salvador is a small country suitable for lab experiments. Let us explore the linkages between agroforestry, poverty, and environmental services as a way of compensating small producers to change their practices. A study on willingness to pay in metropolitan areas was conducted and it highlighted large gaps in knowledge. There are institutional arrangements that need to be addressed as well as how to keep transaction costs down when working with small landowners. There are tough political economy issues in raising funds, especially from urban dwellers. In terms of flood control, most of the beneficiaries are extremely poor. The author suggests that when dealing with all these uncertainties and knowledge gaps, it is best to target and involve the poor. There are case studies of Oaxaca, Chiapas, Veracruz, and Costa Rica on the implications of landscape changes for small-scale producers.

INSTITUTIONS TO SUPPORT ENVIRONMENTAL SERVICES

Establishing Property Rights in Environmental Services

Sara J. Scherr, University of Maryland

Establishing property rights for environmental services from natural resources is complex, and has serious impacts on equity and efficiency. A property right can be defined as a "defensible claim to a stream of benefits from a resource." Increasing demand for environmental services leads to more specific property rights. There are 5 basic types of property rights for natural resources: access, withdrawal, management, exclusion and alienation; these may be given to consumers, communities, state, individual landowners, or others. Effective governance regimes define who is allowed to appropriate the product; timing and location of appropriation; who is responsible for maintenance;

monitoring and enforcement; how conflicts are resolved; and how rules change over time. Issues to consider in defining property rights include culture and tradition, equity, ease of monitoring, avoiding perverse incentives, management capacity, and enforcement costs. Where land managers' rights are stronger, instruments like payments for environmental services and management subsidies are more likely to be used; where consumer rights are stronger, strict regulatory regimes are more used. Where rights are fuzzy or informal, negotiated community agreements may be more suitable.

International Trade and Environmental Services

Antonio Bueno, Bolsa de Mercadorias e Futuros

Antonio was inspired to think about broader trade issues in relation to environmental services by a paper by Bruce Babcock on U.S. carbon emissions policy. A more pragmatic approach in carbon markets should be led by business experience, such that 4-8 years from now there would be global pressure for a multilateral settlement. He emphasized the importance of a global pattern of accountability that would convey credit-worthiness. Congress wants to meet broad objectives through farm activities to meet environmental goals, including increased soil carbon and reduced methane. Strategic decision to adopt a national system to reduce carbon with tradable permits has significant income potentials. Such action by the U.S., however, could have significant impact on Brazil. The case of soybean illustrates price-related problems that might result if carbon emission offset payments were made to US farmers. Resulting loss of incomes for Brazilian soybean producers from undercutting their price could lead to more forest clearing and environmental impact in Brazil.

Proposal for an Information Clearinghouse on Forests and Water: Markets, Economics and Hydrology

Bruce Aylward, Independent Consultant

Bruce presented a proposal for an Information Clearinghouse on Forests and Water (ICFW), proposal is targeted to policymakers and practitioners who want to use the value of environmental services to protect and grow forest areas. The proposed mandate for the Clearinghouse would be to provide information on market information and research results, knowledge guides on "rules of thumb" for newcomers, and educate policymakers and society at large on forest management as means of watershed protection. The clearinghouse would have three major components: resource center, interpretive center, and educational and advisory services.

Facilitating Investment, a Role for Insurers? Insuring the Performance of Certified Sustainable Forest Projects

Phil Cottle, PartnerRe Ltd.

PartnerRe provides under risk profile to financial underwriters by basically reinsuring insurance companies. PartnerRe focuses on agriculture and forestry catastrophic insurance relevant for climate change. There is currently a low volume of forestry insurance, lack of skills in this area among insurers and low awareness. Investors need to fully assess their risks. Today, forestry risks are often managed by over-investing (for example, in carbon emission offset projects); Insurance is sometimes a cheaper strategy, unless risks are predictably very high. The Forest Stewardship Council principles and application can be used as tools to assess risk and provide eligibility for insurance..

Developing an Environmental Registry

Ben Feldman, Environmental Resources Trust

A public purpose endeavor is needed to record environmental services provided by land stewards and to help define environmental service products. Many people are buying acreage, when they really need management services. A system is needed to distinguish variation in environmental benefits across sites. Such a registry would be complementary to the forest certification process. Early mover market can use flexible mechanisms with higher risks, but mainstream investors need standardization. For example, IUCN is looking at certification for protected area management. There is potential to use a standardized management contract as a unit for trade.

FOLLOW-UP FROM VANCOUVER MEETING

Forest Environmental Services in Canada

Gary Bull, University of British Columbia

Events and actions that have taken place since the Katoomba Group met in British Columbia on October 2000 include: a capacity building workshop with small woodlot owners (February); an international conference on comprehensive carbon accounting system in Canberra with a British Columbia delegation (March); workshop on information needs for carbon and other environmental services (May); conference with technical analysts (June). Lignum wants to sell carbon credits and Gary Bull would like to bring buyers and sellers for this transaction. Gary also wrote articles for forestry magazines as advertising and to generate public interest. He will meet with the government of British Columbia to design a two-year agenda on carbon rights, linking operational to national scale standards. Challenges ahead are to establish legitimacy and international credibility for these markets and to develop property rights. The Katoomba group meeting helped to build capacity, and acted as a catalyst to get the government thinking about these issues. The next step is to train buyers and sellers by using simple guides on "how to..."

Isaak Forest Resources

Eric Schroff, Isaak Forest Resources

Isaak Forest Resources has finished its FSC certification assessment, and has completed its first harvest of 10,400 cubic meters. They are now working on a green investment strategy to develop revenue streams for carbon and biodiversity. This is an opportunity to develop and test a pilot project with the government to deal with policy issues on "light touch" harvesting. Isaak is partnering with the government as a way to try new things in British Columbia, influence forest practices, and engage diverse, exceptional people. IFR is highlighted in a forthcoming PBS television special hosted by Bill Moyers on June 18 or 19 of this year.

Day Three

OVERVIEW OF MARKETS FOR ENVIRONMENTAL SERVICES

Markets for Environmental Services: Preliminary Findings

Josh Bishop, International Institute for Environment and Development

The presentation summarized the findings of a global study on projects/programs working on markets for environmental services. The study found 37 cases where carbon sequestration is a major component, 73 for biodiversity conservation, 60 for watershed protection, and 10 for landscape beauty. The numbers for funded cases is lower as these figures reflect proposed cases. The study looked at shapes of markets, different payment mechanisms, bundling services, and market maturity, and biodiversity values. Cases varied in depth and scope. Many existing deals were for niche markets; expansion in scale is unclear. Constraints in marketing biodiversity include: product definition; incoherent policy conditions; lack of mechanism and capacity to negotiate benefit-sharing agreements; poorly defined or enforced property rights; and availability of substitutes for natural products. Most action is at a watershed scale. Prices are typically pulled out of thin air. High transaction costs favor large producers. Several case studies demonstrated possible positive impacts on poverty alleviation, by diversifying incomes or smoothing income flows. Long-term benefits will accrue to actors who master technology, information and institutions. Key questions are the volume of the market, the average percent of trade delivered locally, and market changes over time. A synthesis report is expected by mid-2001.

BIODIVERSITY PANEL

Tradable Development Rights for Biodiversity Conservation in Brazil

Ken Chomitz, World Bank

Ken described the PROBIO project being developed for the Biodiversity Corridor in the Amazon. He notes that connectivity is not intrinsic, but rather instrumental. Direct regulations are not acceptable on a very large scale without more transparency. A system is being developed to set payment levels (as in Costa Rica) and rank priority lands from a biodiversity perspective. They are building a decision support model for such a system.

Building a Regional Market for Ecosystem Services in Australia

Carl Binning, CSIRO Wildlife and Ecology

Carl works in a highly threatened temperate woodland and grassland habitat, with less than one percent of the original distribution of vegetation. The Catchment Ecosystem Services Investment Center involves both brokering of deals and spatial planning processes. The steps include: creating a registry and criteria for environmental services, identifying the buyers (including corporations/philanthropists/first movers, governments); defining product strategies that meet needs; develop institutions; THEN establish cap and trade system, once community demand is clear. The objective is to create an environment where "win-win" solutions are expanded. Key activities are revegetation, agroforestry and environmental management technologies. In Western Australia, groups can sponsor a share of bushland. His group spent five years figuring out how to engage with landowners, and developing a "toolkit". For example, a 20-year extension program for Landcare have protected 1500 sites, with incentives worth only 1/10 to ¼ of U.S. payment levels (only material cost of fencing), but developing a culture of self-reliance. It is necessary to create markets before high-level arrangements with big government and big business can be developed. They plan to implement this approach in three regions.

Markets for Biodiversity: Products and Services

Patricia Moles, A2R, Brazil

A2R makes environmental investments on biodiversity, sustainable forestry, and clean technologies. A2R invests in Latin American enterprises to preserve and promote biodiversity while creating financial returns. This approach includes the definition of baselines to monitor the impact of economic activities on biodiversity services. The strategy is to de-commoditize products through the creation of market niches. This includes organic agriculture, native aquaculture, reforestation of native species, NTFPs and ecotourism. Sustainable management of business activities adds layers to everyday activities that may be more time consuming and complex, yet essential for successful sustainable enterprises. Patricia argued the need to integrate biodiversity concerns into forest certification, to keep the system simple. One option would be to add a “coupon” with certification on environmental services.

Biodiversity Markets in New South Wales, Australia

Jim Shields, State Forests of New South Wales, Australia

Jim’s agency is offering farmers the opportunity to earn biodiversity credit for establishment of native rainforest, endangered ecological community. Camphor laurel is a woody weed that local law requires be removed; but this species can be used for fuel, so the agency is promoting its use for “Green Energy”. Areas not suited to eucalypts are suited to re-establishing rain forest. State Forests will manage the resource from the farmer. Customers include the National Park services. Bio-energy plants already exist, under capacity with access only to bagasse raw material. Another example is establishing a flyway between two major river ways for the Superb parrot, in a rice-growing area. They have convinced the rice growers to regenerate native woodland. Three new biodiversity deals are now packaged and ready for sale—with known biodiversity value, land value and established institutional arrangements. Land being sold can be used for diverse purposes, so long as native habitat remains protected.

Annex F. List of Participants in Katoomba Group III

Chetan Agarwal

Policy Analyst
Forest Trends
1826 Jefferson Place, NW
Washington, DC 20036
USA
T: (202) 530-2028
F: (202) 530-2021
Cagarwal@forest-trends.org

Fernando Allegretti

AmazonTEC Ltda
Av. Clodóvio Coelho, 41
Macapá, Amapá, Brazil
68902-050
T: 96 223-0330
F: 96 223-0329
amazontec@uol.com.br

Anthony Anderson

World Wildlife Fund
1250 24th St. NW
Washington, DC 20037
USA
Anthony.anderson@wwfus.org

Claudio Angelo

Folha de São Paulo
Journalist
São Paulo, SP
Brazil
Cmonteiro@folhasp.com.br

Bruce Aylward

Consultant
6935 Birch Street
Falls Church, VA 22046
USA
T: (703) 534 9573
bruce@radel.com

Carl Binning

CSIRO Wildlife and Ecology
Box 284
Canberra 2601
Australia
T: 61 2-6242-1742
F: 61 2 62411742
carl.binning@dwe.csiro.au

Josh Bishop

Director
Environmental Economics Programme
IIED
3 Endsleigh Street
London WC1H 0DD
United Kingdom
T: 44 207 388 21 17
F: 44 207 3 88 28 26
josh.bishop@iied.org

Rubens H. Born

Vitae Civilis Institute
Executive Director
São Paulo, SP
Brazil
T: 55-11-4686-1814
F: 55-11-4686-1851 or
Rborn@nhi.lead.org.br

Bob Brokaw

GMO Renewable Resources LLC
Investment and Development Group
30 Rowes Wharf
Boston, MA 02110
T:(617) 330-7500
brocard@halcyon.com

James Brumm

Executive VP & General Counsel
Mitsubishi International Corporation
520 Madison Ave.
New York, NY 10022-4223
T: (212) 605-2565
F: (212) 605-1908
James_brumm@micusa.com

Antônio Bueno

Staff Economist
Bolsa de Mercadorias e Futuros
São Paulo, SP, Brazil
bueno@bmf.com.br

Gary Bull

Professor, Forest Resource Mgmt.
University of British Columbia
2424 Main Mall
Vancouver, BC
Canada, V6T 1Z4
T: (604) 822 1553
F: (604) 822-9106
garybull@interchg.ubc.ca

David Cassells
Iwokrama International Rainforest
Program
Georgetown, Guyana
T: [1] 592 2 5504
F: [592] 2 59199
dcassells@solutions2000.net

Ken Chomitz
Development Research Group
The World Bank
1818 H St. NW
Washington, DC 20043
USA
T: (202) 473 9498
F: (202) 522 3230
Kchomitz@worldbank.org

Peter Cleaves
AVINA Foundation
1015 Bee Cave Dr. Suite 203
Austin, TX 78746
T:(512) 327 6350
F: (512) 327 6721
Peter.Cleaves@aaa-net.com

Phil Cottle
PartnerRe: Agricultural Services
Sheraton House
Castle Park
Cambridge CB3 OAX
UK
T: 44 1223 370 091
F: 44 1223 370 092
Phil.cottle@partnerre.co.uk

Adam Davis
Principal
Natural Strategies
1346 4th Street, Suite 206
San Rafael, CA 94901
USA
T: (415) 485-4995
F: (415) 485-0618
Adavis@naturalstrategies.com

Katherine Ellison
Consulting Writer
Center for Conservation Biology
Stanford University
71 Berkeley Ave.
San Anselmo, CA 94960
T: (415) 453-6411
F: (415) 259-0911
kathyellison@home.com

Ben Feldman
Environmental Resources Trust
1700 K St. NW Suite 703
Washington, DC 20006
USA
T: (202) 785-8577
Ben1trout@aol.com

Cecilia Ferraz
Friends of the Earth - Amigos da Terra,
Programa Amazonia
Rua Bento de Andrade, 85
São Paulo, SP 04503-010
Brazil
T: 55-11-3887-9369
F: 55-11-3884-2795

Luis Gamez
Ministry of the Environment
Calle 27 / Ave 8
San Jose, Costa Rica
T: (506) 234-6504
Lgamez@una.ac.cr

Fred Hill
Director of Special Programs
US State Department
T: (703) 302-6951
F: (703) 302-6949
Hillfb@state.gov

Michael Jenkins
Executive Director
Forest Trends
1826 Jefferson Pl., NW
Washington, DC 20036
T: (202) 530-2020
F: (202) 530-2021
mjenkins@forest-trends.org

Nels Johnson
WRI
10 G St., NE
Washington, DC 20002
T: (202) 729-7600
F: (202) 729-7620
Nels@wri.org

Joseph Keenan
The Nature Conservancy do Brazil
SHIN QL 5 Conj. 6
Casa 11
Brasília – DF 71505-765
Brazil
T: [55] 61-368-1856

F: [55] 61-368-1912
jkeenan@tnc.org

Alice LeBlanc
Senior Economist
Environmental Financial Products, LLC
1800 M St. NW Suite 300
Washington, DC 20036
T: (202) 261-1366
aleblanc@envfi.com

Tony Lent
EA Capital
20 Exchange Place. 32nd Floor
New York, NY 10005
T: (212) 482-0671
F: (212) 482-0679
lent@eacapital.com

Eugene Linden
Time Magazine
1271 Ave of the Americas
New York, NY 10020
T: (212) 522-4104
eogen@aol.com

Simone Mangal
Iwokrama International Rainforest
Program
67 Bel Air
PO Box 10630
Georgetown, Guyana
T: [592] 2 51504
F: [592] 2 59199
Smangal@aya.yale.edu

Aaron Manire
Consultant
Forest Trends
220 Prospect St. #3
Cambridge, MA 02139
T: (617) 576-2415
Amanire@geonomicsinc.com

Alejandra Martin
Policy Analyst
Forest Trends
1826 Jefferson Place, NW
Washington, DC 20036
USA
T: (202) 530-2025
F: (202) 530-2021
Amartin@forest-trends.org

Luciano Mattos
IPAM

immattos@amazon.com.br

Peter May
Executive Director
Pro-Natura
Av. Presidente Wilson
164-COB Centro
Rio de Janeiro RJ
Brazil 20030-020
T: 55 21 533 1777
F: 55 21 533 2350
Pmay@pronatura.org.br

Miguel Serediuk Milano
Fundação O Boticário de Proteção à
Natureza
Av. Rui Barbosa, #3450
São José dos Pinhais
PR 83065-260 Brazil
T: (55) 41-381-7413
F: (55) 41-381-7001
MiguelM@Boticario.com.br

Patricia Moles
Vice President
A2R Ltda
Av. Brigadeiro Faria Lima 2055/3
Sao Paulo, SP 01451-000
Brazil
T: 5511-3039 5888
F: 5511-3039-5889
patricia.moles@a2r.com.br

Mario Monzoni
Friends of the Earth - Amigos da Terra,
Programa Amazonia
Rua Bento de Andrade, 85
São Paulo, SP 04503-010
Brazil
T: 55-11-3887-9369
F: 55-11-3884-2795
mmonzoni@amazonia.org.br

Paulo Moutinho
IPAM
Research Coordinator
Brasilia, Brazil

Ignacio Murtagh
PartnerRe Agricultural Services
Talcahuano 1097 1ºB
C1013AAu Buenos Aires, Argentina
Phone/Fax: +5411 4814-4323
+5411 4815-7357
Pras@arnet.com.ar

Dan Nepstad
Senior Scientist
The Woodshole Research Center
PO Box 296
Woods Hole, MA 02543
USA
T: (508) 540-9900
dnepstad@whrc.org

Ken Newcombe
The World Bank, Prototype Carbon
Fund
1818 H Street NW
Washington, D.C. 20433
T: (202) 473-7029
F: (202) 522-7432
Knewcombe@worldbank.org

Stefano Pagiola
Environment Department
World Bank
1818 H St. NW
Washington, DC 20433
T: 202-458-2997
F: 202-522-1735
spagiola@worldbank.org

Iranise Pedro
Axial Participações e Projetos
Rua Dr. Fernandes Coelho, 85/5o andar
05423-040 Sao Paulo - SP
Tel. (55 11) 3819 0047
Fax: (5511) 3819 1614
iranise@yahoo.com

Ian Powell
Consultant
Forest Trends
128 Redland Road
Bristol BS6 6XZ
UK
T: +44 117 970 6085
Peterianpowell@cs.com

Carlos E. Quintela
Director, Conservation Finance Prog.
Wildlife Conservation Society
1700 Connecticut Ave., NW
Suite 403
Washington, DC 20009

USA
T: (202) 588-1108
F: (202) 478-1659
cequintela@conservationfinance.com

Jessica Rice
Program Associate
Forest Trends
1826 Jefferson Place, NW
Washington, DC 20036
USA
T: (202) 530-2027
F: (202) 530-2021
jrice@forest-trends.org

Herman Rosa
Prisma
3a. Calle Poniente #3760
Colonia Escalon
San Salvador
El Salvador
T: (503) 293-6852
F: (503) 223-7209
hrhr@es.com.sv

Sara Scherr
Agricultural & Resource Economics
2200 Symons Hall
University of Maryland
College Park, MD 20742
USA
T: (301) 405-8360
F: (301) 314-9091
Sscherr@arec.umd.edu

Eric Schroff
General Manager
Iisaak Forest Resources
Box 534
Ucluelet, BC V0R 3A0
T: (250) 726-2446
Schroffe@cedar.alberni.net

Herbert Schubert

James M. Shields
Wildlife Manager
Native Forests Division
State Forests of NSW
Locked Bag 23
Pennant Hills NSW 2120
Australia
Jims@sf.nsw.gov.au

Eric Stoner

Environment Senior Advisor
American Embassy
Av. das Nacoes Quadra 801, Lote 3
70403-900, Brasilia, DF
Brazil
USAID
estoner@usaid.gov

Maria del Carmen Vera Diaz

IPAM
R. Tiradentes 190 Apto 401 Ed.
Maristela
Belém, PA, 66053-330, Brazil
T: (55) 91-2763576
F: (55) 91-2763576
mcarmen@amazon.com.br

Fernando Cesar Veiga

Curso de Pós-Graduação em
Desenvolvimento, Agricultura e
Sociedade-CPDA/UFRRJ
Av. Presidente Vargas, 417-6º. andar,
20017-030 Rio de Janeiro, RJ, Brazil
T: (55) 32 3226-2189
f.veiga@nutecnet.com.br

Andy White

Program Director
Forest Trends
1826 Jefferson Place, NW
Washington, DC 20036
USA
T: (202) 530-2020
F: (202) 530-2021
Awhite@forest-trends.org

Carlos Eduardo Young

Instituto de Economia
Universidade Federal do Rio de Janeiro
Av. Pasteur, 250
Rio de Janeiro - RJ-
CEP 22290-240 Brazil
T: (55) (21) 2951447 ext.214
F: (55) (21) 5418148
Young@ie.ufrj.br