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Certifying Sustainability: Analog Forestry and Eco-labeling

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By Cynthia M. Caron

"People who know nothing about nature are of course neurotic for they are not adapted to reality"

— Carl Jung

Sustainability as both a term and a concept is thrown around today liberally in the fields of nature conservation, environmental management and even economic development. As we understand sustainability it involves combining biological and ecological information with that of the social sciences: values, institutions, behavior and organizations. We engage in much of this talk about sustainability partially as a result of the disastrous social and ecological consequences of a historically-narrow approach to planning that relied primarily on the application of economic principles that promised the least-cost pathway to success without compromising efficiency and technological innovation, enabling society to hurdle any unforeseen obstacles or inconvenient constraints to development.

In a biological sense every system, whether it is a garden, a forest or a slum in downtown Colombo, oscillates between inflexible boundaries. If the boundaries are passed we enter a condition where the system loses its original identity or potential. These boundaries represent thresholds that cannot be transcended without extinction (Senanayake, 1991). A point of, biologically speaking, no return. Such a situation is considered unsustainable. Economic systems push against, and some might say are pushing through, these boundaries. What I find most exciting about environmental management is our new approach, through which we try in a sense to "reform" economics by incorporating social structures, social processes and social norms that were left out in previous management approaches, so we remain within the constructs of biological sustainability. In this newsletter I am going to explore an example of this integration through the introduction of biological and forestry principles combined with an economic incentive called *certification* into the land-management strategies of hundreds of farmers who are trying to rehabilitate and to reclaim the exhausted and eroded soils of Sri Lanka's potato, tea and tobacco-growing country.

Building and certifying a better "biological" system

Dr. Ranil Senanayake is a founding director of the Neo-Synthesis Research Center (NSRC), a small Sri Lankan non-governmental organization (NGO) committed to organic farming and sustainable forestry practices. For over a decade Senanayake has developed, improved and promoted what he calls analog forestry. It is a forestry technique that mimics natural-forest succession patterns and processes within the small space of: a farmer's garden. He calls analog forestry a type of farming-systems management for the purpose of helping farmers convert tea smallholdings or abandoned tobacco farms into healthy forest gardens that meet ecological as well as economic objectives. Farmers who follow principles of analog forestry may have their farms certified as "sustainable" systems and the products grown on farm certified as sustainably produced. According to Senanayake, NSRC probably is the oldest and perhaps the first NGO on the planet to certify forest

products such as nuts, fruits and saps.

“There are biological, chemical and physical attributes of an ecosystem,” says Senanayake. “Certification of the forest system must be based on scientific principles. At NSRC we focus on the biological and physical properties of soil and water, combining on-farm observation with on-farm chemical testing for residues and occasional laboratory tests. The organic layer or humus of the soil is evidence enough if the soil can or is supporting a mature forest.”

Analog forestry is a silvicultural¹ system based on mimicking native forest and on maintaining or restoring the ecological structure and function of natural ecosystems while simultaneously managing for economic yield. While forest-garden management for subsistence purposes is a traditional art in Sri Lanka,

providing sustainable economic returns from gardens that are ecologically vigorous is a modern-day challenge. Traditional Sri Lankan forestry (spice gardens, forest gardens and Kandyan homegardens) demonstrate aspects of analog forestry since they all attempt to combine physical structures and ecological functions that are analogous to natural climax forest² with economic profitability (See Box 1 & Figure 1).

Analog forestry concentrates on the development of tree crops and designing cropping systems that produce ecological, conservation and economic benefits. Farmers follow the natural stages of successions substituting many of the “natural” species with economically-useful species. This does not mean that analog forestry is artificial. Species native to the area are retained or re-introduced into the area in combination with more “mainstream,” economically-productive

BOX 1: Stratification of an analog forest system

ANALOG FOREST MODEL

Emergent layer: Coconut, Kitul palm, Areca nut palm

Canopy layer: Mango, Macademia nut, Breadfruit, Avocado, Nutmeg, Jakfruit, Cashew, Rambuttan

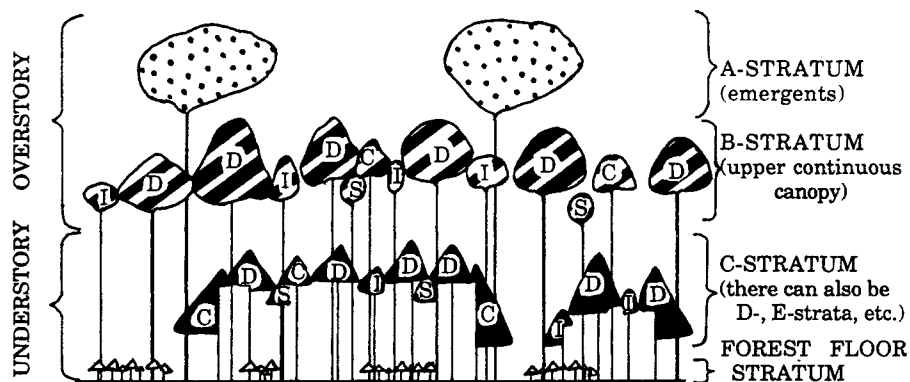
Sub-canopy layer: Lemon, Orange, Lime, Clove, Apple, Peach, Grapefruit

Shrub layer: Coffee, Cardamom, Pepper, Papaya, Pomegranate

Ground layer: Anthurium, Ginger, *Colocassia spp.*, Arrow root

Vine layer: Root crops such as yams and cassava, winged bean and traditional woody climbers used for medicinal purposes and rope.

Figure 1: The relative positions of canopy strata. Canopy strata are the horizontal layers of tree crowns that are separate from higher and lower layers.



Source: Oliver, C.D. and B.C. Larson. 1996. *Forest Stand Dynamics Update Edition*. New York and Toronto: John Wiley & Sons, Inc. p.154.

1. Silviculture is to forestry what agronomy is to agriculture in that it is concerned with the technology of crop production. The ideal goal of silviculture is putting the right tree in the right place with just the right amount of growing space at each stage of development to create and maintain the kind of forest that will best fulfill the objectives of the owner (D.M. Smith, 1986, p. 1, 2 & 262).

2. Climax is the stable “end” of the cyclical ecological process of succession.

vegetation. While analog prides itself for mimicking natural forest, this does not mean recreating the previous forest. Some people are disappointed when they visit their first analog forest patch and find a forest stand that places too much emphasis on economic species.

Senanayake, an expatriate Sri Lankan ecologist with a Ph.D. from the University of California at Davis, lives in Australia but returns to Sri Lanka at least once a year to review analog's progress and maintains that criteria for sustainable forest management must be based on science. "There are scientifically-documented relationships between species and soil micro-fauna," Senanayake says. "There are flourishing micro-faunal communities with breadfruit (*Artocarpus nobilis*), jakfruit (*Artocarpus heterophyllus*), mango (*Mangifera indica*) and sweet potato. The potatoes and pines cultivated throughout the hill-country do not have a strong connection with Sri Lanka's soil biology. Analog forestry builds on local knowledge to enhance the stability and quality of the soil. I travel extensively throughout South America and have introduced new species trials for mahogany, Brazilian cherry and the ice cream bean (*Inga spp.*), a nitrogen-fixing tree from Central America with an edible seed pod.

"Later this year the Food and Agriculture Organization [FAO] of the United Nations will hold an inter-governmental panel on forest management. I am attending this meeting and suspect that we will discuss the Swiss-Peru and Canadian-Malaysia sustainable forestry certification programs. Certification of systems must be rooted in biological criteria. We must investigate the indicator or keystone species of a particular forest and see if they are present. We must establish indicator states. For a forest an indicator state would be the evapotranspiration ratio. To calculate this ratio we must sample the nature of the organic compounds in soil humus to recognize if the ecosystem is reaching maturity.

"The United Nations-sponsored Open-Ended Intergovernmental Meeting of Scientific Experts on Biological Diversity accepted analog forestry as sustainable resource management. However, problems still exist for international certification standards. One of the problems we face with regard to certification of forests," says Senanayake, "is [that] policy makers cannot agree upon a definition of biodiversity, or what a forest is. The FAO still considers single-species plantations a forest.

"I like to refer to analog forestry and certification as biodiversity development," says Senanayake. "Conservation means holding in a natural state or keeping intact. What we do in analog forestry is work with anthropogenic systems and develop them for more biological complexity and maturity. If anything, biodiversity is enhanced and then used to promote itself. For instance, many farmers are incorporating indigenous, threatened ferns and orchids into their

analog. We find that if all crops in the analog are grown organically, then many species of animals and birds that were confined to the forest move in and establish populations in the analog."

Sharing knowledge

Technicians at NSRC under Senanayake's guidance develop cropping alternatives and species trials within gardens to enhance small farmers' earning potential. These include planting marigolds around the edges of beds of annuals to reduce nematode infestation and planting lemon grass, a marketable cash crop that has a thick and very fine root structure that stabilizes soil. They carry out regular experimentation with application levels and doses of organic pesticides, such as chili powder and tobacco.

Analog forestry considers the landscape; a single farmer's plot is not only designed in terms of environmental stability and economic productivity for the individual land holder, but also as part of a larger mosaic of watersheds across a landscape. Water quality and soil retention are considered. Species richness is a well-known indicator for biodiversity. For that reason extension agents from NSRC visit participating farmers (there are 600 farmers in the program from the up-country, hill-resort Bandarawela region alone), every six months, recording all tree species and categorizing them into 23 different height-interval classes. Extension agents are responsible for measuring the quantity of biomass yield and its formation rate as calculated from vegetation density and height growth. Periodically they record crown diameter and shape to note changes in forest-garden architecture. To measure decomposition rates under a garden's various successional stages, accumulation traps are placed within the garden to collect falling leaf litter.

Senanayake designed an inspector-certification training program to instruct agriculturalists and foresters how to design analog forests and maintain and scientifically test the organic properties of the system, enabling them to formally recognize participating farmers. The course ends with an on-farm examination, graduating chartered certifiers and farm inspectors. Four people have completed the certification course offered at NSRC. Thirty-five students are in the first phase of the three-phase training process. There are training courses in Costa Rica, Ecuador and Canada, and Senanayake is reaching an agreement in Brazil.

He is proud that NSRC has not received funding from international donor agencies. The organization is a grassroots initiative of local NGOs and concerned citizens. "There are two ways to look at NSRC," he tells me. "First, we do the job of certification as a consulting service. Second we are a resource for forestry and farming techniques. We must increase analog's efficacy as an extension tool and as an education tool. We are conducting research on keystone species in different forest types so we can expand analog forestry

models. Since we receive little to no funding, NSRC has no way to build up its capacity."

Kapila Bandara, Project Director at Colombo's Asia Foundation, has a soft spot for the environmentalists. "NSRC first asked us for support in 1993 to start an analog-forest extension project that works through the local thrift, death-donation and rural-development societies. Through effective slide shows and demonstrations with children and vegetable farmers, five extension officers reached over 10,000 people in 21 villages within a 30-40 kilometer radius of the Bandarawela NSRC research center. At village-wide meetings we discussed problems important to farmers and why they existed. We had posters describing the lengthy soil-building process and how that compared with the tons of soil loss in the region. After the presentations farmers volunteered to have their farms evaluated. Those with greater interest were given a few seedlings and advice on how to convert their home gardens to analog forest gardens.

"Our support did not end there," Bandara continues. "In 1994 we funded a roadside Farmer Advisory Services Bureau to advise passersby on dosage of fertilizers and pesticides. During our initial on-site investigations we discovered farmers applying 100% more fertilizer than was needed. Anyone traveling along to the market or into town could ask the service's hired, well-trained agriculture college graduates questions. At this point in time I am worried about the sustainability of the organization if management continues like this. They [NSRC] should give this technology away. It is no good to hold on to it themselves. I think international donors would be interested in supporting analog extension and training.

"For three and a half years NSRC has gone without funding," Bandara says. "This is the last year that Asia Foundation will fund analog extension. It was a difficult decision for me to make. No other organization has the experience and qualified personnel as they do for both field research and extension. They must give this technology away. I told them that they should start a National Training Institute, but Ranil wants to remain small. An organization can remain small only for a short time. Then it either expands or perishes. An established institute could offer ten-day courses for a fee, explaining the analog concept and the certification program not just to certifiers but to anyone interested. In a case like this I told Ranil that Asia Foundation would fund the first 50 participants, but after that [other donors] should fund such a worthwhile program."

The Asia Foundation is funding a new analog forestry-based initiative in Sri Lanka's wet zone, targeting small-forest patches. According to Bandara, small-forest patches have their own identity. He wants to protect that uniqueness and its benefits to local residents through analog. In 1993, the Young Zoologists association conducted a survey of 150 forests under

100 hectares in size to compile a Tropical Forestry Register (TFR). Based on unique ecological values and the patches' role in supporting genetic diversity, 51 of these small patches have been chosen as analog forestry sites.

"The government pays attention to large forests such as Sinharaja and Knuckles," says Bandara. "The recent National Conservation Review did not consider forests under the size of 100 hectares. Our project fills this gap. Some rare species may exist in areas five acres in size. All it takes is government approval to build a new garment factory and the area is gone. We have hired a dozen social catalysts who spent the first months of 1996 visiting local communities, temples, offices and government institutions explaining the analog concept and how, where and when it will be implemented. Forest patches that are close together will be connected through analog [to perform a gene-bridge function] while forests that are farther apart will be increased in size through the planting of an analog-forest buffer zone. Other local NGOs, including NSRC, are assisting with the project's implementation. Farmers seem keen to participate because of the economic benefits of the certified products they can sell."

Aside from the Asia Foundation, many Sri Lankan organizations are picking up and sharing the analog-forestry concept. Ajantha Palihawadana left NSRC three years ago to work with Sri Lanka's Integrated Rural Development Program (IRDP) in Nuwara Eliya. His primary responsibility is to design an extension program to develop alternative home gardens and land-use upgrading through the introduction of SALT [Sloping Agricultural Land Technology, See Figure 2] and analog forestry.

Tobacco companies have returned hundreds of hectares of leased land to their original owners. The topsoil is completely eroded. Because tobacco needs full sunlight to grow, the trees left in the tobacco field have been pruned back to a naked bole. Ajantha complains that tobacco strips the soil of everything; it is even worse than tea. Soil erosion in Nuwara Eliya is compounded by high population densities and inappropriate agricultural technologies, such as damaging weeding methods and over-application of pesticides and fertilizers. The wastelands that analog forestry now tries to reclaim are ecologically poor and economically unproductive. Four percent are coarse grasslands of sub-climax species such as *Imperata spp.*, *Cymbopogon spp.* and *Themeda spp.* Nine percent are abandoned tea, tobacco and slash-and-burn areas in an anti-climax scrubland stage of *Lantana camara*, *Ficus hispida* and *Eupatorium spp.*

"Our first task on these sites is soil stabilization," says Ajantha Palihawadana "I and my staff hold three or four meetings in villages in three pilot areas. During these meetings we discuss nutrient recycling, composting and other ecological principles. Next we set up a farmer-to-farmer extension service. Two rep-

representatives from each of our previously-held group meetings are trained as resource persons. They eventually train two newcomers to the group and so on. Program education becomes self-sustaining. Once the farmers have trained each other in on-farm ecology we develop and implement SALT and analog with the farmers. We want to see more tree cover in homegardens. Farmers choose the plants they want. IRDP gives information on spacing, supplies some seed material and coordinates a seed-collection and storage service from choice individual trees. Farmers start by changing their cropping patterns from annuals to cardamom and turmeric. Later on certain elements of analog are picked up. All of the farmers have a vision of what they want their farms to look like. Once a farmer sees results from his neighbor and believes in sustainable farm planning and soil management, the analog concept catches on."

Choosing a site for Analog Forestry

While analog forestry is appropriate for almost all sites, Ajantha recommends that the farm be at least one acre in extent, the maximum size a family can handle without hiring labor. Smaller plots are appropriate if they are adjacent to or surrounded by natural forest. The first step is to demarcate the site with teak, jak and mahogany seedlings and plant these same species in open spaces.

During site preparation shade trees are pruned. Old diseased trees are felled. Compost heaps are made from grass, leaves, straw, cow dung, chicken manure, nettle and dandelion. Elderberry is planted near the compost pile to speed up the process since elderberry provides a favorable micro-climate for micro-organisms.

During site stabilization double-rows of nitrogen-fixing species are planted along contour lines. These

hedges are pruned at the start of the next rainy season and loppings are spread between rows to control runoff and act as a mulch for new plants. Farmers begin a nursery of plants that they want in the future. This is one reason why farmers need to have a farm plan and must determine the successional process of their farm.

"Farmers invest a lot of labor to convert their land to these practices and to stagger the harvest of differ-

Box 2: Starting the process of succession

ANALOG FORESTRY CONCEPT:

Year One: Plant grasses (for animal fodder, erosion control and soil rehabilitation), herbs such as peppermint, basil, thyme, dill, fennel and oregano, and vegetables including beets, carrots, Chinese and red cabbage, lettuce, beans, winged bean and tomatoes planted with vanilla. Early-successional, nitrogen-fixing crops include: green grams, black pea and *Gilicidia sepium*. Weeding is done once every six months. Spread compost.

Year Two: Introduction of species such as banana (*Musa spp.*), murunga (*Sesbania grandiflora*), papaya. Leguminous successional species introduced into the system at this time that contribute to green mulch and animal fodder are *Cassia spp.* and *Erythrina lithosperma*. Weeding once every six months. Spread compost. Harvest firewood, grasses and vegetables.

Year Three: Plant more fruit trees such as orange, lemon and lime. Harvest firewood, grasses and vegetables.

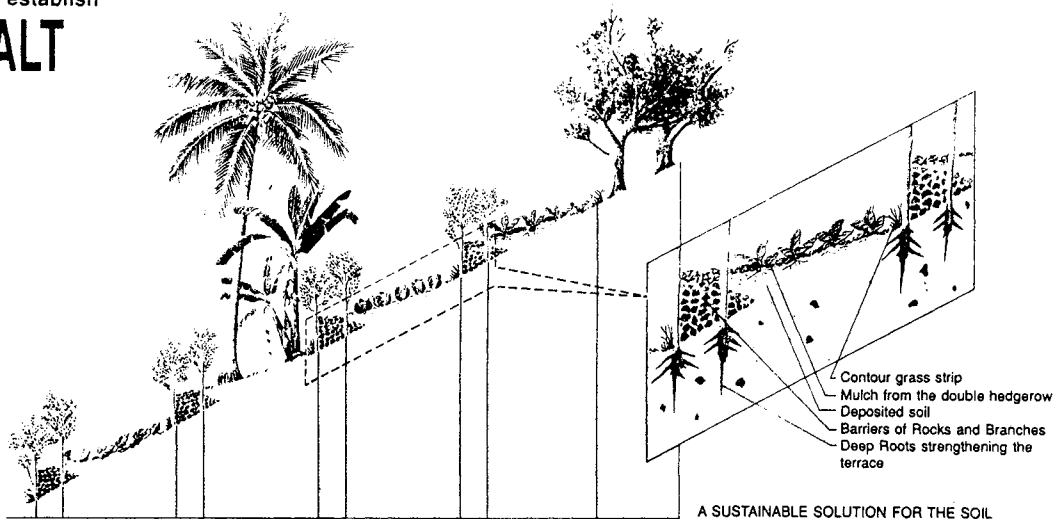
Year Four: Plant fruit trees, many that can be harvested for timber such as jakfruit, kitul, avocado.

Beyond Year Four: After canopy closure, plant cash crops such as coffee and cardamom.

Figure 2: Visual of on-farm SALT intervention

How to establish

SALT



ent crops," says Ajantha. "There are 120 farmers participating in IRDP's three pilot projects. IRDP laid the groundwork and paid for some of the preparation. There are 11 different agro-ecological zones in Nuwara Eliya. Farmers already have a great deal of scientific information from their daily experience. Before I hold analog sessions I find out the area's altitude, rainfall and species mix. Next I spend one or two days in a nearby natural forest looking for indicator species such as frogs, lizards, orchids and keystone species; the species that attract birds and insects. Then I try to combine the ecological characteristics of the natural forest with short and long-term economic benefits of the forest garden. The emphasis is on economics, but I try to get farmers to incorporate and experiment with new species combinations to promote biodiversity and to recreate and restore the area's ecological integrity. For instance, I recently found an important wild-growing medicinal plant that is pollinated by an endangered species of butterfly. I asked a few farmers to intercrop this medicinal with their soil-conservation hedgerows. Then, when they prune the hedgerows for goat and cattle fodder, the medicinal is included in the biomass. The medicinal value of this particular species is the control of stomach worms in livestock, especially goats. The farmer is getting a range of benefits from the incorporation of this one species [fodder and healthcare] while increasing the habitat for a rare species, the butterfly. Once the analog is established it is easier to incorporate a range of diverse species and increase the ecological and economic benefits accruing to the farmer."

Analog forestry takes advantage of naturally-occurring gaps, those created by a tree fall, and creates gaps through the harvest of one or more timber trees in a garden. "Gap ecology is its own field," Ajantha says. "There is plenty of information about species that might possibly establish themselves in the gap. However with widely available information on the successional process beginning with the gap phase farmers normally do not wait for species to naturally come in and colonize the gap. Depending on how the farmer wants to develop his forest, he will plant the gap with early- or mid-successional species and speed up the establishment of this newly available growing space. Farmers must balance their hopeful yield within the ecological constraints of their system. When we conduct a series of mapping exercises with farmers that depict what their farm looked like, how it looks now and how they would like it to look in the future, sometimes we reduce the plan for the over-optimistic farmers."

"We (IRDP) do not really promote analog forestry," Ajantha says, "as much as we are promoting sustainable village-farm planning that incorporates elements of analog. This is why we take a group approach. We try to get one farmer involved and through him reach 30 of his neighbors. In organic farming and certification it is important that a group of farmers all participate because fertilizers and pesticides flow from

adjoining and up-hill lands. In some instances it is possible for organic farmers to plant certain species in buffer zones and incorporate other diversion techniques to reduce contamination of unwanted chemicals. I have been conducting on-farm trials for just this purpose. We hold workshops on pruning coffee and pepper. Since the British left, coffee management has been neglected. There is a market for smallholders producing organically-grown coffee."

Ajantha is a chartered certifier through NSRC's program. Yet none of the farms under the IRDP project he coordinates have been certified, even though farmers follow organic principles. As Ajantha explains this ironic situation he reveals a system glitch. "These areas are too small to supply the quantity that overseas buyers demand. For instance, if we get an order for the leafy green gotukola (*Centella asiatica*), it is for 20,000 tons. The certification process in Sri Lanka certifies large farms first. Smaller farmers have established their own markets for organic goods with local businesses, cooperatives and Colombo buyers."

Linking producers with ecologically-conscious consumers

The major motivation for a farmer to practice analog forestry is income. Dr. Senanayake believes that no one has to sell farmers on the certification process. The market exists. Certifiers exist. It is a matter of linking everyone up. Distributors of organic products have a site on the worldwide web. Sri Lanka's Lanka Organics Pvt. Limited was only an idea eight years ago. Business really started to pick up in 1992-1993. Lanka Organic is the nation's fourth organic produce company — the first three deal in bio-tea.

"We certify the farm and the land. Our certifiers are able to employ simple techniques in the field. It is relatively easy to detect residues in the soil rather than collect plant tissue and conduct laboratory experiments to detect residues in leafy greens. All of Lanka Organics products meet international crop-certification standards under International Federation of Organic Agriculture Movements [IFOAM] and National Association for Sustainable Agriculture of Australia [NASAA]. Many Sri Lankan farmers experimenting with organic techniques formed Lanka Organics Agricultural Movement [LOAM]," said Dr. Ranil. "This organization is involved in the definition of local standards for organic and obtaining international accreditation for organic production." Entering into a partnership with Lanka Organics is serious business. Farmers are spot-checked once or twice a year. If they are not maintaining organic standards they lose their certification license. This is no 'three strikes and you're out system.'

"The Forest Garden Products certification program is just starting. So far we have marketed such products as organic produce," says General Manager of Lanka Organics T.L. Raj. "Now we are ready to distinguish between agriculture and forestry. We sell or-

ganic tea, cashews, mango, papaya, bananas and desiccated coconut. Spices such as cinnamon, cloves, cardamom, pepper, nutmeg and white sesame seed. Our new products include ginger and turmeric. We are exploring markets for lemon grass, basil and a few other herbs.

"Our [Lanka Organics] extension officers who have received their training from NSRC coordinate an area from design to planting and harvesting," says Raj. "Each extension officer is responsible for at least 10 farms for coordinating the farmer-monitoring system and checking log books. Each participating farmer maintains a register to log financial transfers and production levels. At the beginning of each year there is random checking of each farmer's register, farm and compost production. At this time we project and set the organic yield for the coming year."

There is a sustainable-yield index for each and every farm product. Using the number of trees on a farm combined with past yield statistics, scholarly research and on-farm trials, officials set expected yields for the upcoming year.³ This calculated maximum number can be sold as organic. Any harvest above this yield is sold in other markets but not as an organic product.

"We do not purchase 100 percent of the produce because Lanka Organics does not have the capacity to dispose of the supply because of setbacks in the system," Raj says. "There are approximately 350-500 farmers in our system. We are trying to purchase more than 40 percent of the produce from each farmer. As the market develops we will be able to handle larger numbers and more produce. In our first year we did not buy any cashews from the farmers in our system. Now we are part of a larger network interacting with buyers in Turkey, Guatemala, and Madagascar. Sri Lanka produces high-quality cashews with a 48 percent fat content that are excellent for butter manufacturing." In the first week of April 1994, 271 gardens and 65,000 kgs of cashews were certified.

Lanka Organics sells to importers and wholesalers in New Zealand, Australia and Japan and is researching markets in Germany, Sweden, the United Kingdom and the United States. Of all of these countries Mr. Raj expects the United States to be the toughest sell. While Germans will pay high prices for organic products, Americans do not want to pay the extra money.

"Take for example organic tea," says Raj. "Our price is \$6-\$8 a kilogram whereas normal tea sells for \$2. We try to keep our markup at 40-50 percent. Oversea buyers want to pay only a markup of 20-30 percent; otherwise they cannot sell the product. We are constantly trying to keep in touch with the consumer base and

trying to promote indigenous products. We recently had an order from the U.S. for 100,000 tons of kitul palm syrup that will be competing with other industrial sweeteners. Kitul sap is a possible substitute for corn syrup. Unfortunately it has a short shelf life, because of problems with fermentation. If we can control the production process and find the right temperature, shelf life can be increased to one to two months. This is just one example of the large-scale demand that now exists for organic produce and how we are trying to meet it.

"While it is easy to bring new farmers into the system, it is difficult to keep them in it," says Raj. "Farmers are willing to enjoy the premium but are not as keen to maintain the organic farming practices to keep the premium. We short-list farmers to measure their commitment to the system and give an annual bonus to those who have the best management system."

Banking on the green premium

"... consumers of these products...contribute to a change in the lifestyles of tropical subsistence farmers and help reverse the trends in tropical rainforest habitat destruction."

—Advertising from Lanka Organics Brochure

How are we, people with purchasing power, going to reward individuals and companies or even nation-states for practicing sustainable natural-resource management? Are United States citizens as cheap as the business managers of Lanka Organics find us to be? Ms. Sharon Flynn of Conservation International's Conservation Enterprise Department assists rural communities to create biodiversity enterprises and smooths out the path leading to national, regional or international market integration. She finds that, "Consumers, particularly North American ones, are fickle, and generally suspicious of green messages. While consumer polls tend to show a great desire to buy 'green' or 'environmentally-friendly' products, feedback from actual retailers indicates that, if given a choice, most buyers choose a low price over a green content."

Certification is a market mechanism like a tax, tariff, ban or boycott, to induce desirable behavior. However it is unlike bans or boycotts that often send the wrong signals, depress prices and further decrease the value of already undervalued resources and are not conducive to natural-resource conservation. Certification adds a green premium, "a reward" for better natural-resource management practices. The premises of certification are three-fold:

1. Behavior of the producer can be changed by market-driven incentives.
2. Consumer purchasing patterns can be changed, if

3. Taking into consideration seasonal variation, the maximum output for cashew or macadamia nuts is 80 to 90 per cent accurate.

consumers are taught to differentiate between similar products by providing them with accurate and credible information.

3. The price differential and/or preference for a certain type of product created by certification will provide the marginal difference for producers to switch to better management practices.

Certification finds itself in the center of controversy. Many economists say it may be a clever retail ploy in niche markets (often referred to as the "boutique end" of the market), but will have a limited effect in an international marketplace dominated by wholesalers. The boutique end of the market plays an important role in certification, not because of its absolute market share, but because of its leadership role and its ability to pay high premium prices for forest products. Customers must be willing to pay more for certification and that includes covering the costs involved in certifying a product or a forest (performing field assessments and implementing new land management practices necessary to become certified) that are borne by the producer.

Others involved in international trade say that certification will not bring about sustainable land-management practices because certification does not address the causes of environmental destruction. It only assesses whether a product is good or not, and that by itself cannot improve the level of natural-resource management.

It may be easier to market nuts and resins than timber and uncut round logs. While analog forestry promotes the planting and management of native tropical hardwoods, small farm size (one to three timber trees per farm) does not generate a large enough supply. Logs would have to be marketed through an Asian wholesaler trading in certified timber. The certification system implemented by Lanka Organics is not recognized yet by the international timber-certification community, primarily the Forest Stewardship Council (FSC), which is in the business of certifying sustainably managed forests (fewer than one percent of all tropical forests practice "good" forest management — the definition of which is constantly changing).

Market share and premium prices for certified products are likely to increase if consumer awareness continues and is reflected in their purchases. A 1993 survey by Winterhalter and Cassens (in Viana, 1994) reports that 93 percent of the people (all US citizens) they surveyed would prefer that their furniture origi-

nated from a sustainably managed forest, but only 68 percent would be willing to pay more for furniture made from wood that originated from such a forest. The question is, what percent of people are really willing to pay for their noble ecological rhetoric when two nearly identical products are placed next to each other?

Manufacturers of green products must demonstrate a product's features, benefits and efficacy and use "green" as the positive attribute that might be the deciding factor in persuading someone to buy a product. Mark Eisen, Manager of Environmental Marketing for Home Depot, thinks that manufacturers of "green" products must and can move away from self-aggrandizing rhetoric to substantiated claims. Marketing must provide scientifically-substantiated claims so consumers are able to identify and understand what they are buying.

"We stopped counting two years ago at 70 different words or phrases," said Eisen. "The classic environmental marketing claims are, 'renewable,' and 'we plant 10 trees for every one harvested.' Vying for first place with 'environmentally-safe' is 'sustainable'. We started our environmental marketing management effort in 1990 to focus on alternative products, or those that offer real environmental benefits, or at least have less environmental burdens; to police bad claims; and to help manufacturers make good, credible claims that would withstand legal and moral scrutiny."

Like the marketing of any commodity, the "green" product must exceed customer expectations. Green is another buying dimension or quality criteria. Even the socially-conscious institution is slave to market forces and product demand. "We will neither pay nor can we pay one cent more for a certified product unless our consumers express their willingness to do so," Eisen summed up.

Certification intends to create a system in which environmentally-conscious producers are favored in the marketplace. Certification is about practicing good land management and making honest marketing claims. Leaders of Western nations often complain that their citizens eventually have to pay for irresponsible, environmentally-insensitive behavior of other nations. At least certification is positive restitution. It is foolhardy to disregard and to underestimate a few thousand hectares on a small tropical island. Small might be small, but small individual actions across landscapes can aggregate into great benefits. □

SOURCES

Senanayake, R. 1991. Sustainable agriculture: Definitions and parameters for measurement. *Journal of Sustainable Agriculture* 1(4): 7-27.

Report on extension program undertaken to raise awareness amongst farmers and demonstrate analog forestry and sustainable land management practices in the Badulla District. 1994. NSRC report submitted to the Asia Foundation.

Palihawadana, A. 1992. Analog forestry and organic farming. IRDP-Nuwara Eliya. 34 pp.

Smith, D.M. 1986. *The practice of silviculture*. 8th ed. New York and Toronto: John Wiley & Sons. 511 pp.

Flynn, S. 1995. Building markets for non-timber forest products: Challenges and a few lessons learned. *In*: Dicum, G. (ed.) *Local Heritage in the Changing Tropics: Innovative strategies for natural resource management and control*. Yale School of Forestry and Environmental Studies Bulletin Series #98. New Haven, CT: Yale University Press pp. 128-142.

Cabarle, B. 1994. The timber trade and the search for good wood. *In*: O'Hara, J. et al. (eds.) *Timber Certification: Implications for Tropical Forest Management*. Conference proceedings of February 5-6. Yale School of Forestry and Environmental Studies. pp. 5-12.

Thompson, D.A. 1994. Tropical Timber: Certification and market realities. *In*: O'Hara, J. et al. (eds.) *Timber Certification: Implications for Tropical Forest Management*. Conference proceedings of February 5-6. Yale School of Forestry and Environmental Studies. pp.13-21.

Viana, V. 1994. Certification of forest products as a catalyst for change in tropical forest management. *In*: O'Hara, J. et al. (eds.) *Timber Certification: Implications for Tropical Forest Management*. Conference proceedings of February 5-6. Yale School of Forestry and Environmental Studies. pp. 66-79.

Eisen, M. 1994. What marketers want from timber certification. *In*: O'Hara, J. et al. (eds.) *Timber Certification: Implications for Tropical Forest Management*. Conference proceedings of February 5-6. Yale School of Forestry and Environmental Studies. pp. 93-98.

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Current Fellows and their Activities

Adam Smith Albion. A former research associate at the Institute for EastWest Studies at Prague in the Czech Republic, Adam is spending two years studying and writing about Turkey and Central Asia, and their importance as actors the Middle East and the former Soviet bloc. A Harvard graduate (1988; History), Adam has completed the first year of a two-year M. Litt. degree in Russian/East European history and languages at Oxford University. [EUROPE/RUSSIA]

Christopher P. Ball. An economist, Chris Ball holds a B.A. from the University of Alabama in Huntsville and attended the 1992 International Summer School at the London School of Economics. He studied Hungarian for two years in Budapest while serving as Project Director for the Hungarian Atlantic Council. As an Institute Fellow, he is studying and writing about Hungarian minorities in the former Soviet-bloc nations of East and Central Europe. [EUROPE/RUSSIA]

Cynthia Caron. With a Masters degree in Forest Science from the Yale School of Forestry and Environment, Cynthia is spending two years in South Asia as ICWA's first John Miller Musser Memorial Forest & Society Fellow. She is studying and writing about the impact of forest-preservation projects on the lives (and land-tenure) of indigenous peoples and local farmers who live on their fringes. Her fellowship includes stays in Bhutan, India and Sri Lanka. [SOUTH ASIA/Forest & Society]

William F. Foote. Formerly a financial analyst with Lehman Brothers' Emerging Markets Group, Willy Foote is examining the economic substructure of Mexico and the impact of free-market reforms on Mexico's people, society and politics. Willy holds a Bachelor's degree from Yale University (history), a Master's from the London School of Economics (Development Economics; Latin America) and studied Basque history in San Sebastian, Spain. He carried out intensive Spanish-language studies in Guatemala in 1990 and then worked as a copy editor and Reporter for the *Buenos Aires Herald* from 1990 to 1992. [THE AMERICAS]

Sharon Griffin. A feature writer and contributing columnist on African affairs at the *San Diego Union-Tribune*, Sharon is spending two years in southern Africa studying Zulu and the KwaZulu kingdom and writing about the role of nongovernmental organizations as fulfillment centers for national needs in developing countries where governments are still feeling their way toward effective administration. [sub-SAHARA]

John Harris. A would-be lawyer with an undergraduate degree in History from the University of Chicago, John reverted to international studies after a year of internship in the product-liability department of a Chicago law firm and took two years of postgraduate Russian at the University of Washington in Seattle. Based in Moscow during his fellowship, John is studying and writing about Russia's nascent political parties as they begin the difficult transition from identities based on the personalities of their leaders to positions based on national and international issues. [EUROPE/RUSSIA]

Pramila Jayapal. Born in India, Pramila left when she was four and went through primary and secondary education in Indonesia. She graduated from Georgetown University in 1986 and won an M.B.A. from the Kellogg School of Management in Evanston, Illinois in 1990. She has worked as a corporate analyst for PaineWebber and an accounts manager for the world's leading producer of cardiac defibrillators, but most recently managed a \$7 million developing-country revolving-loan fund for the Program for Appropriate Technology in Health (PATH) in Seattle. Pramila is spending two years in India tracing her roots and studying social issues involving religion, the status of women, population and AIDS. [SOUTH ASIA]

John B. Robinson. A 1991 Harvard graduate with a certificate of proficiency from the Institute of Kiswahili in Zanzibar and a Master of Fine Arts in Creative Writing from Brown University, he and his wife Delphine, a French oceanographer, are spending two years in Madagascar with their two young sons, Nicolas and Rowland. He will be writing about varied aspects of the island-nation's struggle to survive industrial and natural-resource exploitation and the effects of a rapidly swelling population. [sub-SAHARA]

Teresa C. Yates. A former member of the American Civil Liberties Union's national task force on the workplace, Teresa is spending two years in South Africa observing and reporting on the efforts of the Mandela government to reform the national land-tenure system. A Vassar graduate with a *juris doctor* from the University of Cincinnati College of Law, Teresa had an internship at the Centre for Applied Legal Studies in Johannesburg in 1991 and 1992, studying the feasibility of including social and economic rights in the new South African constitution. [sub-SAHARA]

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