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The Economy and Environment Program for Southeast Asia (EEPSEA) was established in May 1993 to support training and research in environmental and resource economics across its 10 member countries: Cambodia, China, Indonesia, Lao PDR, Malaysia, Papua New Guinea, the Philippines, Sri Lanka, Thailand, and Vietnam. Its goal is to strengthen local capacity for the economic analysis of environmental problems so that researchers can provide sound advice to policymakers.

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Saving the Wood for the Trees: Sri Lanka's Options for Forest Protection

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As in many developing countries, forest cover in Sri Lanka is being rapidly destroyed. The main cause of this loss is illegal logging in unprotected forests. Unless new conservation measures are brought in soon, this problem is almost certain to extend to protected forest areas.

A new report from researchers at the Department of Agricultural Economics, University of Peradeniya, Sri Lanka assesses →

A summary of EEPSEA Research Report 2002-RR1, *Policy Options for Conserving Sri Lanka's Natural Forests*, by H.M. Gunatilake and L.H.P. Gunaratne, Department of Agricultural Economics, University of Peradeniya, Sri Lanka; contact gunehm@agecon.pdn.ac.lk

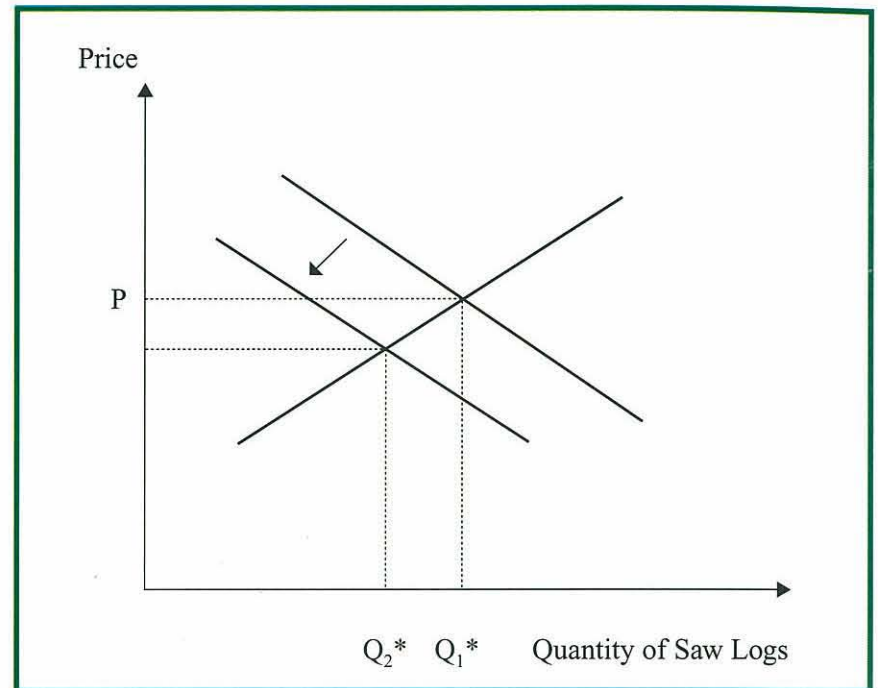
Over-regulation discourage

→ a range of policy alternatives to address this pressing challenge. The research highlights three policy measures that could bring about significant social welfare and conservation benefits.

A history of destruction

The research, by Herath Gunatilake and L.H.P. Gunaratne of the Department of Agricultural Economics, University of Peradeniya, Sri Lanka was conducted against a background of long term environmental degradation in Sri Lanka's forests. At the beginning of the last century, 80% of the country's land was covered by closed-canopy natural forests. Due to factors such as population growth and agricultural and economic development, this forest cover had dwindled to about 18% by 1992. The annual rate of deforestation between 1956 to 1992 was more than 40,000 ha, while average annual expansion of forest plantations during the same period was only 2,000 ha.

As existing forests were degraded, harvesting timber from the natural forest was banned. However, despite this, illegal timber extraction still takes place on a large scale. The number of forest offences recorded in 1997 was over 5,000 (a 3% increase over 1996) and the value of



Impact of Efficiency Improvement

illegal timber confiscated was Rupees (LKR) 35.7 million. But recorded offences represent only a fraction of actual illegal activity.

These problems are compounded by poor management and over-regulation of the country's forest plantations. These discourage private investment in forest plantations, whose expansion is slow.

Investigating mill efficiency

Gunatilake and Gunaratne began their research by investigating the efficiency of Sri Lanka's timber mills. Their objective was to assess the potential impact of technical efficiency improvements on the depletion of natural forests - if fewer logs are wasted during

processing, it should be possible to produce the same amount of wood using fewer trees. A representative selection of 148 sawmills was interviewed using a structured questionnaire. As they had expected, the researchers found that the mills were operating inefficiently. Given good practice elsewhere, Gunatilake and Gunaratne estimated that, on average, current output levels could be obtained with 28% less of all the inputs. They found that poor log quality, old machinery and bad management were among the main determinants of technical efficiency.

Overall, the analysis shows that the elimination of 50% of current technical inefficiency could prevent deforestation of over 7,300 ha per

S private investment in forests

annum. They recommend the replacement of old machinery as a short run measure. They caution that creating a reliable supply of high-quality logs would take time and could only be achieved through the removal of restrictive regulations and the provision of incentives.

Permits vs conservation

The researchers then investigated the complex regulatory system that governs the felling, transportation and sale of timber from private land in Sri Lanka. Their objective was to see if the system was meeting its conservation goals. They found that bribery is endemic and that traders used this to acquire permits, resulting in a de facto cartel of timber traders and government officers. If an ordinary person applies for a timber permit, the system is extremely bureaucratic. Many such applicants have been denied permits or had their documents held up for so long that they have given up.

The impact of corruption

This situation puts timber growers at a disadvantage when bargaining over prices. It also allows timber traders to purchase trees very cheaply and then sell the timber at very high prices. This has had a number of negative environmental impacts.

First, excessively high timber prices promote illegal activities. For example, during the study, one of the researchers visited a number of villages. He found that timber traders harvest trees from nearby natural forest, bring them to land owned by villagers and then obtain permits which record that the trees were harvested legally from these private areas. A large percentage of the timber that is designated as coming from home gardens actually comes from natural forests.

Second, the low prices received by growers and the uncertainty about harvesting timber created by the permit regulations severely discourage the growing of timber in rural area. This is the case even in areas where lots of suitable land is available. The complexity of the

permit system and the large-scale destruction of Sri Lanka's forests have resulted in widespread timber scarcity in the country.

This is one of the underlying causes of the inefficiency the researchers had encountered in their survey of Sri Lanka's timber mills: Because of the timber scarcity, mill owners are uncertain about the future of their industry and therefore unwilling to make significant investments in new plants. This, in turn, creates a vicious circle of inefficiency and environmental destruction.

In light of these findings, Gunatilake and Gunaratne conclude that the existing timber permit system is a text-book example of government policy failure and recommend its abolition.

Reasons for Efficiency Loss

Reason	Percentage of Responses
Old Machinery	49
Poor Saw-doctoring	22
Poor Condition of Benches	32
Poor Stocking	7
Labor Shortage (skilled)	15
Mill Layout	1
Poor Quality Logs	34
Discontinuous Log Supply	22

(some respondents cited more than one reason)

Questioning timber tariffs

In order to investigate how another key government policy was affecting forest conservation, the researchers then examined what impact the removal of tariffs on timber imports would have on social welfare and forest conservation. Currently, a 10% tariff, a 12.5% Goods and Service Tax and a 7.5% Defence Levy are imposed on the timber market. The researchers found that, from the perspective of natural forest protection, there would be two major impacts of timber market liberalization.

First, it would reduce local timber prices significantly - by about 25%. Such a price drop, argue Gunatilake and Gunaratne, would reduce incentives for illegal logging. The researchers also found that after liberalization, the

reduction in prices would have a knock-on effect and reduce the local supply of sawn wood by between 13% to 31%. This would lead to the conservation of over 9,500 ha of natural forest annually.

The researchers calculated that if liberalization went ahead, consumers would be gainers and timber producers losers, with consumers' gains exceeding producers' losses. They conclude that if Sri Lanka imported timber from countries that have well-managed, sustainable wood harvesting systems, then timber market liberalization would be both an effective and acceptable option.

A three-pronged solution

The researchers finished their study by assessing these policy options in terms of effectiveness, short- vs.

long-term effects, political feasibility and economic efficiency. For example, they showed that timber market liberalization would result in a government revenue loss of only about 0.13% - too small on its own to impair the political feasibility of the change.

Overall, Gunatilake and Gunaratne argue that the Sri Lankan government should remove the timber permits system; encourage increases in the technical efficiency of the country's timber mills; and liberalize the timber market. They also advise that incentives for tree growing should be further studied. Because some options would be mutually reinforcing, the researchers recommend that they be implemented simultaneously.

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