

## Banning Commercial Forestry: *What are the Costs?*

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In two successive weeks—November 5, 1999 and November 10, 1999—the Philippines' Department of Environment and Natural Resources (DENR) issued press releases arguing strongly against a total logging ban. Of the two press releases, the November 5 issuance is the more interesting. It specifies the nature of the cost burden that would be imposed on society following a ban on commercial logging. It says:

"...the logging ban has substantial direct and indirect costs, to wit:

Reduction in welfare of both consumers and producers due to lower wood supply;

The foreign exchange outflow needed to purchase timber and processed wood imports to meet growing domestic requirements;

Opportunities lost because of slower adoption of conservation practices;

The fiscal impact of increases in the direct cost of monitoring and enforcement by forest authorities and the cost of generating alternative livelihood activities that would deliberately keep forest extraction at nonprofit subsistence level; and

Off-site, environmental damages associated with increase in illegal activities (delos Angeles and Oliva 1995)."

A logging ban would certainly seem to be a draconian measure. But consider this. A *de facto* logging ban will eventually occur through a shortage in the forest resources in the Philippines in the future. And even before this happens, the sensitive tropical rain forests of the Philippines will suffer considerable damage. Such damage will exert many costs on producers in other sectors and on nontimber forest users. It may also hold global consequences. Unlike countries like Papua New Guinea and Vietnam which lag behind in the commercial exploitation and regulation of forests, the Philippines has already attempted to implement an export ban on logs and numerous other regulatory policies aimed at reducing deforestation. Unfortunately, all these failed. Thus, with the failure of these past policies, combined with con-

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tinued deforestation of about one percent<sup>1</sup> per year, the option of a complete logging ban has been considered in mainstream political debate.

Four major bills curtailing commercial logging, for instance, were being considered by the House of Representatives as of last quarter last year while three major bills have been pending before the Senate. Two of the Senate bills seek to reform the logging system through a community-based forest stock management while the other aims to identify and demarcate forest lands and the resources there that cannot be diminished.

At present, the pending bills appear to recede from considering a total logging ban and have embraced many multi-objective bills with some form of logging bans, some of which conflict with one another. The perceived high economic displacement costs and the difficulty of enforcing a total ban are apparently exerting pressures on our legislators.

Inasmuch as the economic impact of banning commercial logging remains as the key barrier to having a decisive action on the part of the legislators, this paper attempts to quantify the costs of a moratorium on commercial logging using a computable general equilibrium (CGE) model.<sup>2</sup>

The results of the computation, as this *Policy Notes* issue will show, indicate that the economic consequences are not as drastic as suggested in earlier studies and in the DENR press release.

### Computing the cost of banning commercial logging

Two policy tests with full and less than full employment scenarios were carried out. The corresponding economic consequences or welfare changes were then obtained.

The *first* test is a total ban on commercial logging and the *second* is a total ban on commercial logging accompanied by an across-the-board reduction

of import tariffs.<sup>3</sup> Some of the direct and indirect costs shown in the DENR November 5 press release were also estimated by this paper. Welfare losses to domestic consumers due to the imposition of a ban on commercial logging, for instance, as well as the decrease in employment generated by the ban and the reduction in tariffs, and the foreign exchange requirements in the importation of the domestic needs in logs were computed.

### Results

In terms of the first indirect cost, Table 1 reports the changes in welfare due to a ban on commercial logging. The results under the full employment of labor assumption<sup>4</sup> reveal that the reduction in welfare under a ban is P15.3 billion while under a combined ban and tariff reduction, the decrease in welfare is only P8.6 billion. Meanwhile, under a less than full labor employment assumption,<sup>5</sup> which is more reflective of the labor market situation in the country, the corresponding reductions in welfare are P15.8 billion and P8.9 billion, respectively. The worst scenario therefore shows a total economic loss of less than P16.0 billion.

<sup>1</sup>The rate depends on the source. Repetto and Gillis (1988) report 0.7 percent while the Department of Environment and Natural Resources of the Philippines reports 1.49 percent for 1996. The rate could have accelerated from 1988 to 1996.

<sup>2</sup>CGE model is a tool suited for analyzing environmental policies using an economic framework as it operationalizes the neoclassical microeconomic and welfare economic theories.

<sup>3</sup>The second test simulates the effects on the economy of a total log ban as well as the current government policy of liberalizing trade by reducing tariffs to a uniform rate of 5 percent by year 2004.

<sup>4</sup>A neoclassical assumption wherein wages adjust to ensure full employment.

<sup>5</sup>A Keynesian assumption which allows for unemployment in the economy.

**Table 1. Measure of Social Welfare (Billion pesos)**

	Ban on Commercial Logging (with full employment)	Ban on Commercial Logging and Reduction in Tariffs (with full employment)	Ban on Commercial Logging (less than full employment)	Ban on Commercial Logging and Reduction in Tariffs (less than full employment)
Change in welfare	-15.28	-8.60	-15.84	-8.92

	Base	Ban on Commercial Logging (with full employment)	Ban on Commercial Logging and Reduction in Tariffs (with full employment)	Ban on Commercial Logging (less than full employment)	Ban on Commercial Logging and Reduction in Tariffs (less than full employment)
Value of imports (million US\$)	5,405.30	5,600.87	5,693.55	5,574.08	5,676.47
Value of forestry imports (million US\$)	45.28	354.86	341.92	354.02	341.43
Value of exports (million US\$)	5,660.85	5,832.96	5,916.71	5,806.15	5,900.56
Exchange Pesos per US\$	40.00	44.09	45.91	44.07	45.90

As to the problem of foreign exchange outflow that may arise due to the need to purchase timber and processed wood to meet the domestic needs, Table 2 indicates that there would indeed be an increase in foreign exchange requirements as the value of imports of forestry products is shown to increase. However, because of the declining value of the peso, the country's exports become cheaper and the demand for them goes up as shown in the increased volume of total exports. This increase in exports would provide the foreign exchange needed to import more logs.

The third indirect cost mentioned in the DENR press release is difficult to quantify. The argument DENR is making is that if logging is banned, conservation or better logging practices will not be adopted. A total logging ban may not be desired by the DENR but it does achieve conservation.

A similar argument can be made for the fourth indirect cost identified by the DENR. The argument by the Department is that enforcement costs would increase considerably. In short, it claims that it would be more costly to enforce a total ban than to enforce a 'community-based logging.' This, however, remains to be seen. It can be argued that there is nothing simpler than to enforce a total ban since anyone in possession of a recently-cut tree is in violation of the policy and should be prosecuted.

The second part of the fourth indirect cost, i.e., cost of generating alternative livelihood, is easier to quantify. This deals with generating alternative employment. The results of our policy simulation show that the economy adjusts to provide jobs in other sectors. Table 3 shows that

total employment declines by 1.77 and 1.11 percent, respectively, for the two scenarios with less than full employment assumption. Although this is not a negligible loss of jobs, it is considerably smaller than earlier estimates of delos Angeles and Oliva (1995).

Meanwhile, this study was unable to quantify the fifth indirect cost mentioned by DENR. The DENR suggests that under a ban, illegal logging increases and that it is more environmentally detrimental than legal logging. Illegal logging is indeed detrimental to the environment. But so is legal logging. If legal logging ceases under a ban, there should be a net environmental improvement. *And the losses in consumer welfare from a ban on logging shrink when they are reduced by the environmental gains accrued by halting the harvest.*

Logging—legal or otherwise—generates significant emissions of BOD<sub>5</sub>, suspended solids, nitrates and phosphates emissions, all by-products of erosion. With a ban on logging, these emissions would be reduced. The value of this reduction in emissions is quantified in the *Master Plan for Forestry Development* (MPFD 1990).

The MPFD calculates the total cost of erosion that resulted from the 1988 annual harvest to be P11.6 billion, broken down into P6.7 billion for off-site damages and P4.9 billion for on-site damages (adjusted to eliminate double counting of costs). The largest off-site impacts are on irrigated agriculture, municipal fishing and hydro energy while the largest on-site impacts are on extensive agriculture and extensive grass.

Table 3. Effect on Total Employment (Percent)

	With Full Employment		With Less Than Full Employment	
	Ban on Commercial Logging	Ban on Commercial Logging and Reduction in Tariffs	Ban on Commercial Logging	Ban on Commercial Logging and Reduction in Tariffs
Change in Labor Employment	0	0	-1.77	-1.11

The 1988 social accounts matrix was used to calibrate the CGE model. The amount calculated—at P11.6 billion—compares favorably with the welfare loss of P15.8 billion under the worst case. If the scenario with import tariff reduction is considered, then the off-site and on-site damages that would no longer be experienced following a ban on commercial harvesting would more than offset the welfare loss.

## Conclusion

As gleaned from the results, this *Notes* makes a case for a ban on commercial logging in the Philippines for at least a cycle (say 30 years). The merit of the case rests on a comparison of the welfare loss for consumers resulting from a ban with the benefits to consumers derived from allowing the harvest to continue in some form. *Results show that there are more benefits to society from halting the harvest than from allowing it to continue.* As noted in the results of the tests on alternative policies reducing the cut as well as reducing the import tariffs for logs, *no policy other than a ban can halt the total destruction of the forests.* A ban is also easy to enforce. It is harder to sell this idea to people who make a wealthy livelihood out of foresting but the numbers can tell: the losses to the economy of banning commercial harvesting are more than recovered in terms of the avoided off- and on-site damages from erosion. The net cost of banning the harvest is negative.

A ban on commercial logging, however, does not mean a ban on traditional forest-based economic activities since the take in logs from these activities is small. In fact, a ban would protect the traditional foresters more than a social forestry approach as advocated by the *MPFD*. Allowing traditional forest harvesting to continue is not synonymous to switching from commercial forestry to social forestry. In its recommendation for social forestry, the *MPFD* virtually allows the same extent of extraction of trees but with the

major difference of having communities manage the process. Its argument is that social forestry will give communities incentives to harvest for a sustained future. At the same time, it will continue to impose the ban on exports.

In our estimation, however, the combination of banning exports and turning the management over to social groups or communities is a double tragedy of the commons. For one, the export ban eliminates the need to use international prices as a signal that the cost of producing goods using domestic logs is not efficient (Vincent 1992). And two, the conversion to social forestry eliminates the need to produce profits. Thus, the proposal in the *MPFD* will simply accelerate the destruction of the forest in the Philippines and will be more disastrous to the economy than a ban enforced immediately.

The issue for decisionmakers therefore is clear. They should decide on who should and will benefit from the forest—the few who have up to now benefited or the generations of Filipinos to follow? 📄

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