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Forest Product Trade in Cambodia: A Case Study of Resin

Mr. Prom Tola and Mr. Bruce McKenney of CDRI's Natural Resources and Environment Programme summarise findings from a study of resin trade, with a focus on trade constraints and their impact on rural incomes.*

Forest products play an essential role in supporting rural livelihoods in Cambodia. Almost all rural Cambodians depend on forest products for cooking fuel and construction materials, and many collect resin, wild fruits and vegetables, and other products to support income generation and food security. With roughly 600,000 people living in forest concession areas and many more people living in or near forests, the collection and trade of forest products represents a significant part of Cambodia's rural economy. However, with the bulk of attention focused on commercial timber management, this sector of the economy is often overlooked.

Sealing a fishing boat with resin in Po Village, Kompong Chhnang.

CDRI recently conducted research on one forest product (resin) to gain insights on how this trade affects rural economies and forest dependent communities. The objectives of the research include identifying constraints on resin trade, assessing the impact of these constraints on rural incomes, and making policy recommendations that support the government's objectives of reducing poverty, ensuring food security, increasing 'pro-poor' trade, and improving forest management.

Tapping resin trees is a significant income generation activity for many households living in the forested areas of Cambodia. Resin is sold domestically for use in sealing/caulking boats and exported for use in varnishes and other products. Various case studies indicate that resin tapping is widespread in forest areas, and an essential income generation activity. For instance, a recent study of four villages in Mondulkiri by the Wildlife Conservation Society (WCS) found that 86 percent of households tap resin, earning an average of $340 per year. Although the overall scale of Cambodia's resin production is difficult to estimate precisely, CDRI's research, in combination with other studies, suggest that approximately 20,000 tonnes of resin are collected annually, and that this activity provides a source of income for roughly 100,000 rural Cambodians. Total annual market/export value of resin is estimated at about $6 million.

Collection of liquid resin involves cutting a tap in medium to large trees (mostly *Dipterocarpus* species) and burning the area briefly to stimulate the flow of resin, which is then collected over time in plastic containers. Studies of resin tapping suggest that it does not harm the trees and that tapping a tree can continue for decades. However, because resin trees are also commercially attractive, many tappers have lost trees to commercial (and illegal) logging in recent years.

* This article summarises key findings from a forthcoming CDRI Working Paper on resin trade.

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In selecting sites and trade routes for study, CDRI reviewed existing information to identify areas known for significant resin production and high incidences of poverty and food insecurity. In particular, CDRI took into account an analysis by the World Food Programme (2001) that identified 300,000 people living in 67 'communes of concern' — areas with high forest dependence, forest loss, food insecurity, and poverty. Based on the WFP findings and other reports on forest products, CDRI decided to focus work in four areas: Mondulkiri, Preah Vihear, Kompong Thom, and Oddar Meanchey/Siem Reap. CDRI carried out more than 50 semi-structured interviews with traders, wholesalers, exporters and domestic retailers in these areas between August and November 2002.

Overview of the Resin Trade

Although resin-tapping activity may be found across most of Cambodia's forested areas, it is most prevalent in the north and northeast regions. From these areas, resin is often transported significant distances to domestic markets around the Tonle Sap, south to the Mekong Plain region, and for export. CDRI estimates that about 3,000–4,000 tonnes of resin are used for sealing boats in Cambodia each year. Most domestically consumed resin appears to be of an inferior quality (thicker consistency) to exported resin. CDRI observed that significant quantities of poor quality resin are being collected in Kompong Thom province, where resin prices are substantially lower than elsewhere.

Although domestic markets for resin are significant, the vast majority of resin is currently exported, primarily to Vietnam. Unfortunately, little is known about the final use of resin exports. Some traders interviewed for this study suggest that resin exports are re-exported to China. Other studies of resin use in Southeast Asia indicate resin may be used in varnishes, or in some cases as a fixative for perfumes but it is unclear if the resin variety collected in Cambodia could be used for these purposes. CDRI was unable to obtain/confirm information about the final uses of Cambodia's resin exports.

Resin trade in Cambodia typically involves the sale of resin from tappers to a marketing chain that includes traders, wholesalers, exporters and domestic retailers:

- **Traders** travel to tapping villages, some of which may be in remote forest areas, to purchase resin. They typically travel by motorbike and are capable of carrying about 200 kg of resin (six to seven containers). This resin is then brought to a more central or semi-urban area for sale to a wholesaler.
- **Wholesalers** purchase resin from traders and villagers and stock it until they have enough for a shipment (usually about 1–2 tonnes). They often provide credit/capital to traders to support the purchase of resin. Before shipping, many wholesalers filter the resin in a rudimentary manner to improve resin quality, especially if the resin is intended for export. Wholesalers may transport the resin to the market/border themselves or hire independent transporters.
- **Exporters** aggregate resin from wholesalers and transporters for export. In some cases, exporters filter resin if wholesalers have not done so. Export shipments range in size from 1–20 tonnes.
- **Domestic retailers** purchase resin from traders and wholesalers. They are typically located in provincial markets or nearby fishing areas where the high number of boats creates a demand for resin.

Analysis of Resin Trade Routes

CDRI identified four major resin trade routes for study:

- Keo Seima district (Mondulkiri) to Memot district (Kompong Cham) and on to the Vietnamese border.
- Tbeng Meanchey district (Preah Vihear) to Sourng district (Kompong Cham) and on to the Vietnamese border.
- Kompong Thom town and Kompong Thmor district (Kompong Thom) to Phnom Penh
- Anlong Veng district (Oddar Meanchey) to Chong Khneas (Siem Reap)

For each trade route, CDRI collected information on trade practices, prices and margins, business costs (capital, operating, and working capital costs) and fees. The main quantitative findings from this research are summarised in Table 1. As expected, business costs are largely correlated with the distance of the trade route. Hence, the highest business costs (354 riels/kg) are for trade from Preah Vihear to Kompong Cham/Vietnam. Business costs for trade from Mondulkiri are also high due to the remoteness of tapping villages and the poor quality of roads.

In addition to typical business costs (transport, labour and storage equipment), there are significant fees imposed on the trade of resin. Depending on the trade

Table 1. Margin and Cost Analysis of Resin Trade in Cambodia for Four Trade Routes

Margin and Cost Analysis	Trade Route 1: Mondulkiri-Kompong		Trade Route 2: Preah Vihear-Kompong		Trade Route 3: Kompong Thom-Phnom		Trade Route 4: Oddar Meanchey-	
	Riel/kg	$/tonne	Riel/kg	$/tonne	Riel/kg	$/tonne	Riel/kg	$/tonne
Price paid to tappers	759	194	414	105	261	67	437	111
Export/market price	1275	325	1250	319	675	172	861	220
Price margin (tappers to export/market)	515	131	836	213	414	106	423	108
Total trade costs (costs from tappers to export/market, excluding fees)	226	58	354	90	175	45	127	32
Fees	120	31	240	61	82	21	109	28
Profit margin[1]	168	43	241	61	155	40	187	48
Fees as % of total costs	35%		40%		32%		46%	
Fees as % of "potential" profit[2]	42%		50%		35%		37%	

[1] This margin represents profit in cases where business owners have included their wages within their operating costs. If they are not paying themselves a daily wage as part of operating costs, this margin reflects net revenue.

[2] Potential profit is equal to the price margin (tappers to export/market) minus total trade costs (excluding fees).

route, these fees amount to $21–$61 per tonne of resin. At 32–46 percent of total business costs, fees represent the highest cost component for trading resin from tapping villages to the market/border.

Fees paid on resin transport affect the potential profits of all involved with resin production and trade. It does not matter who actually pays the fee since costs may be passed on. As one trader put it, "*when the authorities raise the fees, I cannot pay all of it and make a profit, so I must reduce the price I pay to villages for resin."* But traders also note that these lower prices can cause a reduction in the amount of resin supplied by tapping villages. At present, fees absorb a significant proportion of potential profits — from 35 to 50 percent depending on the trade route. Such losses can have a substantial impact on the income and food security of resin tapping households, especially since most of these families live in areas facing chronic rice-deficits.

For example, based on the average fees paid in Mondulkiri, households in the four villages studied by WCS may incur income losses of up to $82 per year due to fees.[1] As WCS notes, these households only grow enough rice to cover consumption needs for approximately four months. Income from resin sales is used to purchase rice for the remainder of the year. Indeed, CDRI observed wholesalers in Mondulkiri directly exchanging rice for resin. For resin tapping households in Mondulkiri, the removal of fees could provide the means to purchase up to 400 additional kilograms of rice per year — enough to support the rice consumption of a household of five persons for five or six months.

The official system of permits, licenses and fees is extremely difficult for those in the resin trade to follow in practice because of its high burden and cost.

Finally, in addition to the fees actually paid, it is important to note that trade inefficiencies and costs are also caused by the *threat* of fees. Resin traders will go to great lengths to avoid paying high fees, since their payment would result in a business loss rather than profit. For example, rather than shipping resin efficiently in a large truck (and paying high fees), it is common in Kompong Thom to ship smaller quantities of resin in the trunks of taxis. While shipping via several taxis raises transport costs, traders have calculated that it is cheaper than a truck shipment subject to fees. Likewise, traders in Mondulkiri refrain from using nearby roads to the Vietnamese border because the fees are too high, opting instead to go a longer distance and export resin via Memot in Kompong Cham.

Permit, Licensing and Fee Requirements

With the aim of forest management and revenue generation, the government has established a number of permit, licensing and fee requirements to transport and export Cambodia's non-timber forest products (NTFPs). For resin transport and export, the government officially requires the following:

- To transport resin within a province requires approval of the Provincial Forestry Office (PFO). No payment is officially required.
- To transport resin across provinces within Cambodia requires approval of the PFO and a transport permit obtained from the Department of Forestry and Wildlife (DFW) in Phnom Penh. A fee of 315 Riels/kg must be paid to either DFW or the PFO.
- To export resin requires approval from the PFO, a transport permit from DFW, and approval of an export license from the Ministry of Commerce and Council of Ministers. In addition to 315 riels/kg, the exporter will be charged a 'service fee' equal to one percent of the total value of the resin exported plus a royalty fee (CDRI was unable to determine the official amount of the royalty fee).

The System in Practice

The official system of permits, licenses and fees is extremely difficult for those in the resin trade to follow in practice because of its high burden and cost. This is especially true for small businesses, which lack the means to pay fees or to travel to Phnom Penh to obtain a transport permit or export license. Although a few large wholesalers obtain official resin transport permits from DFW, irregular enforcement allows these wholesalers to ship more resin than is allowed under the permit. CDRI was unable to identify any actors in the resin trade who hold an export license, and this was confirmed by a DFW representative who informed CDRI that no one has applied for a resin export permit since 2000.

Technically, almost all resin trade and export is conducted on an illegal basis because of the difficulties of compliance. Consequently, the system generates almost no official government revenue. What the system does provide is a basis from which local authorities and officials can justify the collection of informal fees. Similar systemic problems exist for other forest products. For example, the local market price of a wooden pole in Siem Reap is 800 riels, but the official royalty rate charge is 1000 riels per pole. It is clearly impossible to pay the official rate and earn a profit.

The government appears to recognise some of the problems with its NTFP permit and licensing system and has indicated an interest in reviewing the system and improving market conditions. As stated in the National Poverty Reduction Strategy 2003–2005:

The Forestry Law will be reviewed as information on its effectiveness and implementation is gathered. The system of fee and permits on NTFPs will also be reviewed in consultation with local user groups. Additionally, efforts should be made to remove barriers to marketing NTFPs (especially resin), since NTFPs can be harvested without negatively affecting the forest and are of great importance for rural household economy.

This review of the Forestry Law should begin with a reconsideration of Article 40, which states: "*[a] transport permit is required for any third party who buys*

NTFPs for commercial purpose from a local community, in accordance with the provisions of this Law and after payment of any applicable royalties and premiums." Since resin and most other NTFPs are widely traded outside of the areas in which they are collected, this section of Article 40 places permit and royalty requirements on most NTFPs. The associated fees represent an additional cost to NTFP marketing that, in turn, drive down the prices that NTFP collectors receive for their products.

Recommendations for Improving Resin Trade and Rural Livelihoods

Consistent with government objectives to reduce poverty, ensure food security, increase 'pro-poor' trade, and improve forest management, CDRI offers the following recommendations:

1. The elimination of resin transport permit, licensing and fee requirements. The current system of requirements does not work; there are several justifications for ending it rather than trying to revamp it.

- *The 'custom' is to trade*. Resin has historically been transported from forest areas for use in fishing areas and for export. Forest communities have little use for resin other than in some cases as a sealant for their own boats or for torch making. In short, resin supply has always been far greater than the demand in forest communities. Trade is necessary. To allow the collection of resin without a permit (as stated in Article 40.B.1 of the Forestry Law) is not meaningful if the trade of resin then requires a transport permit and royalty fees (Article 40.B.5.).
- *Inconsistency with national poverty reduction and food security objectives.* As indicated by the World Food Programme (2001), poverty and food insecurity are common in many forest dependent communities. These communities rely on income from forest products to purchase rice during deficit periods. Clearly, fees that amount to $21–$61 per tonne of resin reduce this livelihood income. Eliminating these fees so that forest communities can earn a higher income would be a more effective approach to rural development than charging fees on resin and then, when a rice deficit is faced, trying to reach these remote areas with food aid.
- *Inconsistent with national pro-poor trade objectives.* Spearheaded by the Ministry of Commerce (MoC), the government is currently promoting pro-poor trade. As part of this effort, the MoC has highlighted the need to reduce high fees involved with the export of milled rice, estimated to be $14 per tonne in 2000. It would be consistent with pro-poor trade initiatives to address the fee system for resin as well since much resin is exported, fee rates for resin are significantly higher than rice, and many of the poorest communities in Cambodia depend on resin.
- *Serves no significant forest management purpose.* Resin tapping does not negatively affect the forest. In fact, income generation from resin provides a strong incentive for tappers to protect the forest areas with resin trees. If the current permit and fee system were eliminated, resin prices at the forest gate would likely rise, giving tappers an even stronger incentive for forest protection.
- *Serves mainly as a basis for charging informal fees rather than official government revenue collection.* For most involved in the resin trade, compliance with the current system is impossible because they lack the means to pay high fees or to make the necessary trips to Phnom Penh to apply for permits and licenses. As a result, the current system functions mainly as a basis for informal fee collection.
- *May discourage the establishment of community forest management.* Communities need incentives to manage and protect nearby forest areas. Reducing the potential income that communities can earn from forest products by imposing fees will not encourage responsible management. Moreover, a permit and licensing system that cannot be complied with does not set a good example for community forest managers who may be looking for management models.

The current system of requirements does not work; there are several justifications for ending it rather than trying to revamp it.

2. Enforce Article 29 of the Forestry Law prohibiting the harvest of resin trees. While CDRI's research focused on resin trade, not resin tapping, several interviewees noted that the resin supply has been reduced or stopped altogether from some areas due to logging activity. Reforming policies that govern the trade of resin will not be meaningful if the source of resin production is lost. The government should be commended for prohibiting the cutting of resin trees in the Forestry Law of 2001. The challenge will be to enforce it.

3. Support the identification of new markets and value-added processing opportunities for resin. The majority of resin collected in Cambodia is exported with little or no processing, much of it going to Vietnam from where it may be re-exported. Eliminating the permit, licensing and fee system for resin would reduce marketing costs and, in effect, 'legalise' the trade. In turn, this would open up opportunities for investment in value-added processing and encourage entrepreneurs to seek out potentially high-value end-use markets to which Cambodia could export directly.

Endnote

[1] The amount of loss to tappers will vary depending on the extent to which fees are passed on from exporters, wholesalers, and traders, causing lower resin prices at the forest gate. If fees were reduced, competition among traders to purchase resin suggests much of the benefit would be passed on to tappers.

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