

Political Ecology series
(Re)making Governance series

Power, Progress and Impoverishment: Plantations, Hydropower, Ecological Change and Community Transformation in Hinboun District, Lao PDR

A Field Report

By Keith Barney



\$15



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It is hoped this field report might contribute to more targeted and effective policy dialogue and action on the plantation and hydropower sectors in Laos, and ultimately, improved livelihood outcomes for rural people in Hinboun District.

This report is dedicated to the people and families of Ban Pak Veng, Hinboun District, Khammouane Province, Lao PDR.



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Executive Summary

This report documents the contemporary ecological, social and economic transformations occurring in one village in Lao PDR's central Khammouane province under multiple sources of development-induced displacement. Rural development policy in Laos is focused on promoting rapid rural modernisation, to be achieved through foreign direct investments in two key resource sectors: hydropower and plantations. Laos' land reform program is also a key component of the changes underway in the countryside, as swidden (or shifting) upland cultivation is targeted for stabilisation and elimination.

The village of Ban Pak Veng, in Hinboun District, is introduced as a village experiencing downstream effects from the Theun Hinboun Power Company (THPC), a major inter-basin diversion hydropower project in Laos. The Mitigation and Compensation Program (MCP) of THPC as operationalised in Ban Pak Veng is documented and evaluated. Specific attention is given to downstream, wet-season flooding effects on the middle-to-lower Hinboun River, and the resultant post-2001 loss of wet rice production capability in Ban Pak Veng. THPC's program to reconstruct rice paddy production capabilities in Ban Pak Veng through dry season agriculture are evaluated, and situated within the complex internal political situation in the village. This is followed by analysis of the effectiveness of THPC's cash crop diversification and livelihood promotional program under the MCP. The report documents a series of disruptive ecological transformations linked to hydrological changes in the Hinboun River, which are negatively affecting villager livelihoods. These include effects on fisheries, riverside gardens, livestock and human health, and village housing. The volatile political situation in Ban Pak Veng is linked to the nature of the underlying livelihood vulnerabilities, not necessarily a "lack of leadership" in the village. The first major displacement affecting villagers—involving a significant displacement-induced transition pushing villagers from lowland paddy farming into upland swidden rice cultivation is outlined. A cascading set of linkages are described between the Nam Theun II inter-basin transfer hydropower project, the Theun-Hinboun Expansion Project at Nam Gnouang 8, and the THPC proposal for full resettlement of Ban Pak Veng in 2010.

The second major section of this report completes the analysis of an ecological 'double displacement' effect underway in Pak Veng village. This second set of displacements is the result of a state-led land reform program linked to the concession-based plantation forestry operations of Oji-Laos Plantation Forestry Ltd. (LPFL). Through the land reform program, village degraded forests, which are crucial for village food security and swidden production, have been zoned for industrial plantation production and bulldozed. The nature of the trade-off villager's face is outlined. That is, between short-term rice sufficiency, and long term livelihoods into which villagers are forced. The Oji-LPFL program to pay cash compensation to villagers to cut down their own forests in return for cash income and access to productive swidden land is outlined, and the nature of the trade-offs for villagers are described.

It is forwarded that, contrary to their public statements, neither THPC nor Oji-LPFL are currently meeting their obligations to account for the full extent of their environmental externalities upon vulnerable villagers in Hinboun District.

The last section of this report follows this complex set of linkages between ecological degradation and village social-economy to its conclusion. The drivers and outcomes of cross-border migration of the majority of the young people from Ban Pak Veng into the illegal migrant labour market in Thailand are documented. Remittances from this migration however are having many implications for village life, as financial flows from village youth are in some cases being invested by their parents back into productive agricultural technologies, including smallholder rubber plantations. It is suggested that the multiple forces of ecological change, and trans-national enclosure of common property in Ban Pak Veng will rapidly transform the current system of common property rights in the village. Ultimately, a breakdown of common property rights to land and forests, and a steady decline in the natural resource base is likely. In its place may be a new regime of individual household and corporate-based accumulation, cash cropping and migrant labour. The future may bring some opportunities, but also, as a result of continued resource development in hydropower and industrial plantations, new and intensified sources of impoverishment and vulnerability for the people of Ban Pak Veng.

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I. Preface:

Very legitimately, the Government of Laos views the sustainable development of its natural resources as a primary mechanism for promoting sustained and broadly based economic growth, for reducing rural poverty, and for achieving the social development objectives identified in the United Nations Millennium Development Goals initiative. Two of Laos' natural resources in particular, forests and water, are considered fundamental to this effort. The promotion of foreign direct investment and joint venture partnerships with external companies, such as Theun-Hinboun Power Company and Oji Paper, represent crucial pillars of Laos' overall national development strategy.

There are grounds for optimism. For the first time in its modern history, a unified and independent government in Laos, free of external military domination and conflict, holds the sovereignty and the means to play a significant role in improving the lives of its citizens, and to provide the basic health, education and livelihood opportunities that the majority of citizens in the developed world take for granted. Yet, it is also an opportunity not to be squandered, as the consequences of doing so in a new era of global commodity and financial flows and dramatically intensified competition for natural resources, would not be positive. Mismanagement of Laos' natural resource endowments at this historical moment could result in an intensified regime of external resource control, led by booming Asian economies and transnational corporations.

Many would agree that such is the geo-political reality that Laos currently faces. But what issues can the development narrative, of '*power, progress, and corporate partnership*'¹ also serve to obscure? As the pace of economic reform and resource investment into Laos accelerates, a range of more complex questions emerges. What strategies for natural resource development should be pursued? What policy frameworks and institutional models will govern these investments? How will the trade-offs between environment and development be weighed, and by whom? How can the accountability of state actors and external investors be reinforced? How will both the benefits and the costs from resource development be distributed? What safeguards are in place to ensure that the interests of the impoverished and the displaced, of Lao villager's *rights to appropriate, beneficial, and progressive community development*, are upheld?

The people of *Ban* (village) Pak Veng in Hinboun District have had both the misfortune, and potentially still the opportunity, to be located within the project areas of two of the largest resource sector investments currently underway in Laos. They have been on the receiving end of downstream flooding effects, fishery declines, and eroded riverbanks, caused by the Theun-Hinboun Power Company diversion hydropower project. The company's environmental and social programs in Ban Pak Veng have been ineffective in mitigating and compensating for the losses incurred. In the coming years, Ban Pak Veng will also be indirectly affected by the massive Nam Theun II hydropower project, which will draw down the levels of water flowing into the Theun River. The river volume draw

¹ See <http://www.adbi.org/files/2003.12.12.cmats.allen.presentation.pdf>.

down from the NT2 project in turn provides the major justification for the proposed Theun-Hinboun Power Company capacity expansion project at Nam Gnouang 8, which will compensate and regulate the water volumes flowing to THPC. It is proposed that the downstream effects of the latter NG8 project will lead to the outright relocation and resettlement of Ban Pak Veng by the company in 2010. Secondly, as located along the Highway 13 corridor running through Khammouane province, Ban Pak Veng is also squarely within the 150,000 hectare fast-growing tree plantation concession area allocated to a Japanese held firm, Oji-Laos Plantation Forestry Company Ltd (LPFL).

The river and the forests in Hinboun district are undergoing transformations that are outside any previous range of villager's experience. The two development projects, in combination with the state Land and Forest Allocation tenure reform program, are resulting in combined and overlapping effects that are radically transforming the socio-ecological landscape and economy of the village. The associated ironies of these development projects are not lost on the community featured in this report. That is, some nine years after the THPC hydropower project (through which time the company has generated large annual profits for shareholders), none of the households in Ban Pak Veng have access to the state electricity grid; or that the Oji LPFL plantation company is clearing areas of upland forest for eucalyptus, which, if villagers had done so themselves to support their modest livelihoods, would have resulted in significant fines or even imprisonment by state authorities. It is the unambiguous conclusion of this report that neither of the multinational companies featured in this report, THPC or Oji-LPFL, are currently fulfilling their obligations to adequately address the environmental effects of their projects, and to take effective action to fully compensate for the losses experienced by local communities in their project areas.

This report is derived from a broader dissertation effort on the political economy of resource development, ecological change and village transformation in Lao PDR. While comparative points are drawn to neighbouring villages or to other examples in Laos, and the structural forces influencing this village are extended to many other global actors and locations, the analysis presented here only truly 'fits' when situated in the lived community of Ban Pak Veng. This is because even poor villagers, in small countries, are still the agents of their own history. While the village situation documented below is, *perhaps*, exceptional in terms of the multiple patterns of development-induced displacement, this paper also draws from Ferguson (1994: 258) in considering how case studies which highlight the extra-ordinary can also illuminate: "...allowing us to see in stark outline processes that are likely present in less extreme cases." Indeed, in his study of development processes in the southern African country of Lesotho, Ferguson (1994: 257) writes:

"The unusualness of Lesotho's situation does not in itself make it irrelevant to wider generalization. Indeed, the exaggeration it produces, if properly interpreted, may be seen not simply as a distortion of the "typical" case, but as a clarification..."

The author will also leave this question of the broader representative-ness of the village study presented below to those with more extensive knowledge and fieldwork experience in rural Laos. Nevertheless, the ways in which the people and families in this village are labouring and imaginatively negotiating between broader forces of change, and are also themselves involved in an active production of social-economy and landscape, should be of interest to a wider range of development professionals, researchers, companies and policy makers. For if, in the manner which has been documented in this report, rivers in Laos continue to be dammed and diverted for hydropower, village 'degraded forests' are bulldozed for commercial plantations of eucalyptus, acacia, and rubber, and swidden agricultural practices are targeted for elimination though associated state tenure reform policies, the experiences of the people of Ban Pak Veng may come to resemble aspects of the future situation of many others in rural Laos to follow.

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II. Introduction:

This report represents an ethnographic analysis of the socio-economic-ecological changes occurring in a rural village in Hinboun District, Laos. The community transformations documented in this report are occurring in relation to two of Lao's flagship resource sector development projects: the Oji-Laos Plantation Forestry Ltd. (LPFL) fast-growing tree plantation project, and the Theun-Hinboun Power Company (THPC) hydropower project. The report draws from doctoral research work, which included extended fieldwork in Ban Pak Veng, Hinboun district, from December 2005 to September 2006, and updated through a return visit by field assistants in December 2006, and again by the author in February 2007. The broader research project also involved extensive literature reviews, and numerous interviews with key state, private sector, academic and donor agency actors in Vientiane, Khammouane and further afield.

This research project did not set out to target a hydropower project for study. Indeed the author knew little about the Theun-Hinboun Power Company or indeed dam projects more generally in Laos before beginning fieldwork in Hinboun district. The primary research program is related to forestry and plantations, resource tenure, and rural development issues in Southeast Asia. Nevertheless, it was quickly discovered that the story of forest-based livelihood transformation through industrial plantation development in Ban Pak Veng could not be told without reference to the ecological changes in the Hinboun watershed ushered in by the THPC project. By necessity, therefore, this research crossed disciplinary and professional boundaries, extending analysis into the social production of forests and rivers, the political economy of hydropower compensation and mitigation, and broader human development issues such as rural labour markets and cross boundary migrations.

This research is based largely on ethnographic methodologies, focusing on a single village field site. On the one hand, this leaves the analysis forwarded in this report open to charges of 'exceptionality'; that the village on which the report is based is not representative of the wider situation in Hinboun district, or of villages which have been affected by either hydropower or plantation projects. However the insights which can come through local specificity can also be considered as the strength of this analysis. Ethnographic research approaches are able to contextualize, in specific places, sites, and communities, the various contradictions which emerge within overarching discourses of 'progress' and 'modernity' that tend to characterize large-scale development projects, and to situate rural development within a broader field of political power relations (Mills, 2005). Secondly and perhaps more directly, as state agencies and their development partners in Laos move rapidly to develop the hydropower and tree plantation sectors, the externalities of these two forms of resource development will increasingly overlap, combining, and intensifying the other in their local socio-ecological effects.

Indeed, plantations of rubber, acacia, eucalyptus and other cash crops are one of the fastest growing sectors in Laos, and are a key area of focus for the Government of Laos. Ministry of Agriculture and Forestry plans under the 'Strategic Vision for Forest Resource Management' have targeted a goal of 500,000 hectares of industrial plantations

in Laos by 2020. Available data from the Lao Committee for Planning and Investment (2007) indicates that concessions covering a minimum of 150,000 hectares has been granted to six international companies, representing an investment of US\$500 million. A further five plantation firms had applied to the CPI for land concessions covering an additional 70,000 hectares, representing a potential US\$142 million inflow. Included in the list of Lao plantation investors are Oji Paper, as well as a major multinational from India (Aditya-Birla), Vietnam Dak Lak Rubber Company, and numerous smaller Thai, Vietnamese and Chinese firms.²

In the hydropower sector, nine projects are currently in operation in Laos which together generate approximately \$20 million per year in export revenues. Hydropower projects currently under construction include the flagship Nam Theun 2, Nam Ngum 2 and Xe Kaman 3, while Nam Theun 1, Nam Ngum 3, Nam Ngiep 1 are all due to begin in the near term. Another *thirty-five* hydropower projects are under negotiation in Laos with identified investors (see www.poweringprogress.com).

In mining, some 119 companies are active at 193 project sites in Laos. The two internationally financed mining projects in Laos: Oxiana/Lan Xang Minerals at Xepon and Phu Bia Mining in Xaysomboun, are significantly raising the profile of the Lao minerals sector. The total investment of the Oxiana project has exceeded \$400 million (World Bank, 2006), with the Phu Bia/Pan Australia Ltd. project to involve a projected \$300 million investment. Oxiana in particular is attracting significant attention due to the profits it is generating for its financial backers in Australia.

Villages in Laos are negotiating through multiple forces of change which affect access to natural resources, from the effects of the above resource sectors, to war-time unexploded ordinance (UXO), to state-sponsored internal resettlement (see Baird and Shoemaker, 2005), migration, livestock disease, village health and food security issues. Too often however, local research leads to the identification of isolated problem areas, without sufficient reference to the wider forces of change which shape, and are in turn shaped by, the lived experiences and labour of rural people. In attempting such a study, it is hoped that this report may also be of interest to a wider group of people concerned with natural resource management, rural livelihoods, political ecology and agrarian transition in Laos and elsewhere.

The report proceeds as follows. Section III-IV outlines the basic features of the THPC hydropower project and the general downstream implications for villages on the Hinboun River system. The specific implications of the THPC project for Ban Pak Veng are summarized, outlining the basic contours of downstream displacement, via an uncompensated loss of access to productive lowland paddy associated with riverbank erosion and wet season flooding effects of the THPC project operations. This is followed by an evaluation of the company's Mitigation and Compensation Plan (MCP) efforts in the village. Specific attention is paid to fact that while all villagers have suffered

² These statistics do not include plantation investors who may have signed recent deals directly with provincial governments, and also do not include exports of natural forest logs and sawn wood, which are significant but difficult to track with any accuracy. See also Schumann *et al.*, (2006).

economic losses, the MCP has been particularly unsuccessful in reaching the poorest households of Ban Pak Veng. The crucial loss of productive lowland paddy in the lower Hinboun watershed is in turn connected to a post-THPC, post-1998 shift in Ban Pak Veng's agricultural production strategy towards upland swidden rice cultivation (or *hai*).

Section V turns to the Oji-LPFL fast-growing tree plantation project, and situates this in relation to ongoing national forest-land tenure reforms occurring under the Ministry of Agriculture and Forestry's Land and Forest Allocation program. The local outcomes of land use zoning in support of plantation production in Ban Pak Veng are then outlined. This in turn introduces the second displacement effect for the people of Pak Veng village, namely an enclosure from upland swidden fields and village forest-lands. The employment and village development benefits associated with the Oji LPFL project are outlined and placed in relation to the loss of access to upland forests and agricultural fields, again with specific attention to the implications for the most vulnerable households in Ban Pak Veng.

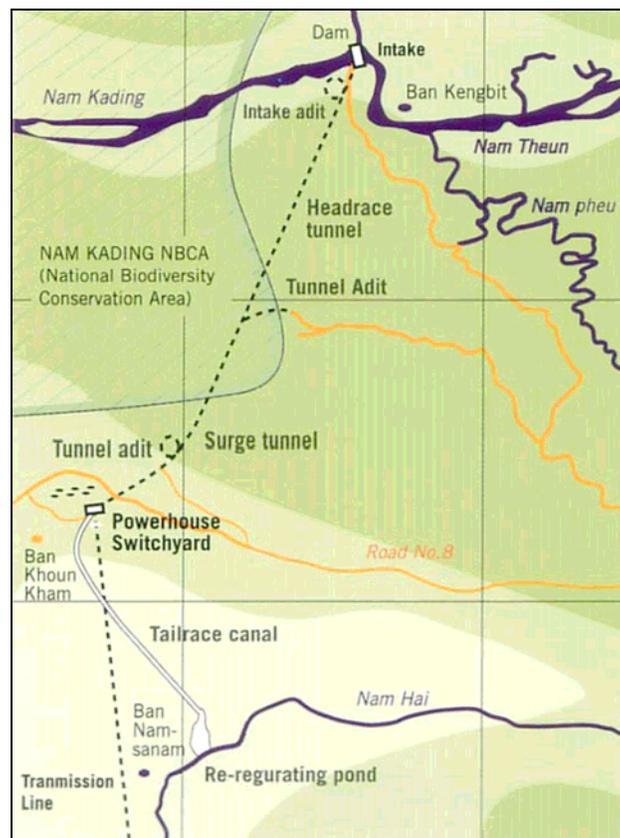
Section VI further develops a broader ethnographic account of the local history of resource-based livelihoods, agrarian transformation, and the social production of natural landscapes in Ban Pak Veng. Rural livelihoods in Ban Pak Veng are situated not only in relation to local ecologies and the double-displacement effects of resource developments, but also in relation to local markets and trading networks for natural resources, and new autonomous, smallholder investments by villagers in Ban Pak Veng into cash crop plantations including rubber. Linkages are also drawn between new village agricultural investments (into smallholder rubber and other productive assets), and the cash remittances accruing from village youth migrations into national and international labour markets. Migration in the context of Ban Pak Veng is also situated in terms of (but not reduced to) a relationship between resource displacement and labour market migrations across the Lao-Thai Mekong border.

Section VII draws out a set of key conclusions regarding the social and environmental challenges being experienced in Pak Veng village, and critiques the overall outcomes of the THPC and Oji-LPFL resource development programs in the village. Finally, implications are drawn for how this report might inform a more critical approach to research on agrarian transitions in Laos, combining detailed, community-based analysis with focused attention to the power effects of resource development policy.

III. The Theun-Hinboun Power Company Hydropower Project in Hinboun District, Laos

Beginning operations in March 1998, the 210 megawatt THPC project was the first independent, international hydropower producer to make an entrance into Laos. The 30 year build-operate-transfer hydro project is notable for being a ‘run-of-the-river’³, inter-basin transfer hydropower project, which at full capacity diverts 110 cubic meters per second of water from the Nam Theun-Nam Kading river system into a tributary of the Nam Hinboun—the Nam Hai (see Map 1). The Hinboun River discharges into the Mekong at the village of Ban Pak Hinboun. The hydro-electricity generated from the THPC power station site at Ban Nahin is conveyed along high voltage transmission lines, crossing the Mekong River at Thakhek-Nakhon Phanom, and feeds into the electricity grid of northeast Thailand.

Map 1: The THPC project, showing the inter-basin diversion, run-of-the-river design.⁴



International actors played a crucial role in the design and funding of the THPC project. Project financing for the \$260 million THPC dam was arranged through grant and loan packages from the Asian Development Bank (ADB, US\$60 million), the Nordic

³ Meaning that the volume of daily inflow into the headpond is equivalent to the outflow.

⁴ Source: <http://www.adbi.org/files/2003.12.12.cmats.allen.presentation.pdf>

Development Fund, the UNDP and the Norwegian Agency for Development Cooperation, in addition to financial packages from several international commercial banks and northern Export Credit Agencies.

In terms of its profitability, the THPC hydropower project has been a major success. THPC generated overall revenues of US\$275 million between the years 1998-2002 (THPC, 2003), and, in a reflection of overall profitability, paid out US\$113.5 million in dividends to shareholders. For the first twenty-five years, THPC is also expected to generate US\$ 25.9 million per year in revenues for the Government of Laos, followed by an average of US\$44.9 million annually in years 26 through 40 (Probe International, 2001: 2).⁵ As the total non-grant revenues collected and administered by the GoL for fiscal year 2004-05 was in the range of US\$339 million (World Bank, 2006: 3), the annual receipts from THPC project alone currently supports about 7.5% of domestically-derived state revenue in Laos. THPC is thus a significant component of the overall national development strategy of the GoL, and the project directly affects the fiscal balance of the country. The THPC project also can be viewed as a forerunner and as a test-case for the World Bank supported, US\$ 1.25 billion Nam Theun 2 hydropower project, the flagship hydropower project in Laos currently under construction⁶

THPC has publicly highlighted a “genuine, deep, and long term commitment to mitigating the environmental impact of the project and supporting communities around it” (see THPC, 2002; 2003). The lack of an initial requirement for outright resettlement of village populations in the THPC project design enabled the Project to secure early support from the ADB (e.g. see ADB Review, 1997). A closer look at the project’s history however reveals serious disagreements concerning whether the company and their financial backers allocated sufficient resources for addressing the foreseeable environmental externalities, or fully incorporated the costs of compensation and mitigation for downstream communities.

THPC completed a 1993 preliminary environmental impact assessment (EIA) by Norconsult, which was followed by a more comprehensive 1996-97 EIA, conducted during the project construction phase by Norplan. This second, more comprehensive EIA was conducted because the ADB rejected the initial Norconsult EIA as being of poor quality. A Norwegian environmental advocacy group, FIVAS, also played a role in pushing for a comprehensive EIA. The Norplan studies included descriptions of likely projected downstream erosion and sediment transport impacts; however these projections failed to reach the stage of initiating mitigation and compensation plans (R.M. Watson, pers. comm.)⁷. As early as 1998, the opinion of independent researchers (e.g. Shoemaker, 1998: 5) was that “...the project proponents had systematically failed to safeguard the interests of Lao citizens both in the appraisal and implementation stages.”

⁵ Although these figures do not incorporate reductions in annual revenues due to the water diversions in the Nam Theun as a result of the NT2 project, or the increases as a result of the NG8-Theun-Hinboun Expansion Project.

⁶ Although there are many design differences between THHP and NT2, including the overall scale of the projects and the relative size of the storage head ponds. NT2 also requires significant direct resettlement, of some 6,200 persons.

⁷ RM Watson is a hydropower expert based in Vientiane.

It was only after a second ADB review, conducted in November 1998, which was only conducted in response to the independent, external investigation published by Shoemaker (*ibid.*), and pressure from FIVAS and the California-based International Rivers Network (IRN) that the "...ADB acknowledged for the first time that the project impact area should be expanded to include the full downstream impacts. This new impact zone included the recipient Hinboun River downstream from its confluence with the Nam Hai River to its confluence with the Mekong River, and the donor Kading River downstream from the THHP to its confluence with the Mekong River" (IRN, 1999:1). A timetable was then developed for assessing the outcomes of the project for downstream villages and for developing a framework for mitigation and compensation.

Shoemaker's 1998 report was the first external document which provided insights into the problems emerging with communities on the Nam Hai and the middle and lower Nam Hinboun and Nam Kading rivers as a result of the THPC diversion project. Shoemaker's field research showed evidence for significant declines in local fishery production, a loss of community access to riverbank gardens, issues with dry season drinking water, and an overall lack of accountability of the THPC project with respect to downstream affected persons. It is notable that issues associated with aggravated wet season flooding events on the lower Hinboun River, documented in this report, had not yet emerged in the late 1990s, at the time of Shoemaker's study. It would appear that the phenomenon of more consistent and damaging flooding events became apparent only gradually, as the major sediment redistributions from the erosion on the upstream Nam Hai began to be shifted downstream into the Hinboun.

Under the terms of the initial contract between THPC and the Government of Laos, (which was mediated by the ADB), "...THPC's total financial responsibility for all mitigation and compensation was limited to \$1 million—almost all of which was spent on project infrastructure, consultants, government training, and similar activities" (IRN, 1999). In response to public pressure placed upon THPC and the ADB by International Rivers Network, and an additional critical study by Warren (1999) on downstream fisheries impacts, in late 2000 THPC finally commissioned their own, independent review. The result of this process was the adoption by THPC of a formal, ten-year, US\$4.7 million Mitigation and Compensation Plan (MCP), to be implemented through a new Environmental Management Division (EMD)⁸. The MCP aimed to address the major issues confirmed in the ADB 1998 review, beginning with:

- (i) Restoration of water supplies for human consumption and watering for dry season gardens
- (ii) Measures to provide protein replacement opportunities through improved livestock or fishery management; and
- (iii) Creation of alternative income generation opportunities, for example silk production and non-timber forest products, to supplement water supply and protein replacement measures (THPC, 2002: 3).

⁸ See http://www.adb.org/Projects/TheunHinboun/logical_Framework/logical_framework_2001_2006.pdf

The MCP work program tabled in September 2000 was designed to address downstream social and environmental impacts in both the donor (Nam Theun-Nam Kadding) and recipient (Nam Hai- Nam Hinboun) river systems. The eventual EMD program, established in 2001, was organized around a series of additional problem areas (from Blake, Carson and Tubtim, 2005: 1):

- The loss of dry season riverbank gardens, which were an important source of food and income for villagers.
- The loss of access to traditional fishing and fish breeding areas, which are an important protein source for villagers.
- Erosion along sections of the Hinboun River, which caused a loss of land and reduced access to clean water supplies.
- Losses of income by villagers due to delays by the company in taking action to solve the initial problems caused by the project.

In all, some 3,000 families in 57 villages were identified as project-affected persons. The logical framework organizing the MCP activities of the EMD included a stipulation for external assessments to be conducted every two years. To date, one review has been conducted since the EMD was established, in March 2005 (see Blake, Carson and Tubtim, 2005).

Notably, the MCP programme did not identify aggravated wet season flooding as a critical issue, likely because flooding problems on the recipient Hinboun River had not yet become serious. The MCP did however require rates of erosion, flooding and sediment transport to be monitored from the Nam Hai. Issues have also been raised consistently by IRN regarding the continued failure of THPC to provide either mitigation or compensation for losses in local fisheries.

Given the EMD's significant financial commitments to achieving 'best practices' in the mitigation and compensation of hydropower impacts, it may appear that the overall storyline regarding THPC in Laos is that of a successful lobbying campaign by an international civil society organisation upon a publicly-held hydropower company operating in a developing country, leading to avoided impoverishment of a local population. Yet, even the paid consultants hired by the company, who designed a THPC mitigation and compensation plan, are much less sanguine.⁹ In a personal correspondence, the consultants have informed the author:

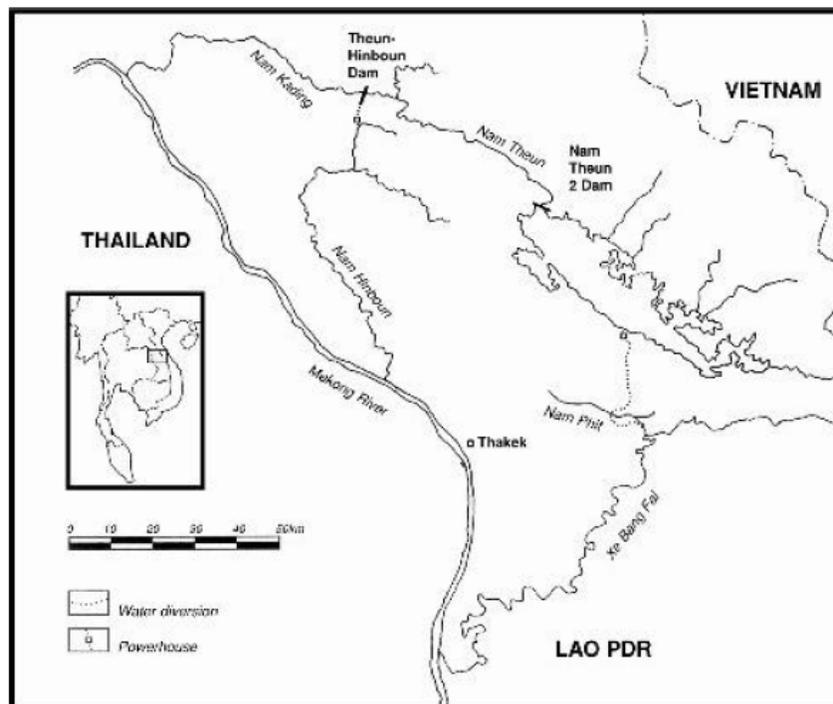
“The MCP was designed to be directed at all families affected adversely by the Project, applying careful assessment and monitoring to assess the losses and damage each had already experienced, and continues to experience as a result of on-going impact events, so that appropriate and agreed rectification in the form of mitigations or compensations, can be made. The EMD programme comprises

⁹ The mitigation and compensation plan proposed by RMR consultants was not adopted by THPC, which instead chose the approach detailed in the published company MCP Logical-Framework.

collectivized or communal infrastructure and institutional developments, and livelihood intensification trials which tend to be taken up by small numbers of the less vulnerable families. It has failed to prevent significant impoverishment of a large proportion of 2,200 moderately to strongly affected households, and some impoverishment of 2,300 moderately to slightly affected households” (R.M. Watson, pers. comm., underline added).

Current plans for a THPC expansion project (THXP) have raised a new series of questions regarding the environmental and social impacts of the Theun-Hinboun Project. THPC has hired Vientiane-based RMR environmental consultants to undertake an Environmental Impact Assessment for this expansion. The rationale for THXP is closely related to the Nam Theun 2 project, as the latter will divert almost all the flows of the Nam Theun at its dam site into the Xe Bang Fai river system, through a second inter-basin transfer project (see Map 2 below). The NT2 project will therefore reduce the water flow of the Nam Theun, which will in turn reduce the generating capacity of THPC, by a highly significant 35 per cent during the initial NT2 reservoir filling stage, and by 18 per cent thereafter (RM Watson, personal communication). Reduced water flows in the Nam Theun-Nam Kading watershed would be accompanied by reductions in generating capacity, annual revenues and profitability for the first project, THPC.

Map 2: The THPC project in relation to Nam Theun II inter-basin diversion project.



To ensure continued economic viability therefore, THPC proposes to build a new storage reservoir on the Nam Gnouang, a tributary of the Nam Theun, which joins the Nam Theun upstream of the THPC weir and downstream of the NT2 dam. The construction of

the THXP dam on the Nam Gnouang will in turn result in the flooding of about 106 km² of river bank and garden terraces, up to a point some 50 km upstream of the dam site. The THXP reservoir will thus enable regulation of discharges into the THPC Headpond, thereby providing more water in the dry season and permitting more energy generation and higher plant utilization factors at the main generating station. These regulated flows are aimed at more than making up for the losses resulting from NT2's diversion. The THXP-NG8 expansion is structured to enable an increase in the turbine capacity at the present power house, in addition to generating extra electricity from a new power station, to be constructed downstream of the Nam Gnouang 8 Dam.

While the relationships between THPC, NT2 and THXP-NG8 are complex, the arrangements proposed will likely lead to higher volume of diverted river flows and a higher intermittency of these flows, in the Hinboun system. These water diversions, which would almost certainly be disallowed by law in most first world jurisdictions, will have two major effects. First, it will exacerbate the erosion rates in the recipient Nam Hai. Secondly, it will cause flooding in the Nam Hai and Hinboun systems to be more frequent, more prolonged and deeper than is presently the case (RM Watson, pers. comm.).

Indeed, accumulated evidence points to a substantial correlation between the massive erosion of channel sediments in the Nam Hai and post-project flooding effects on the mid to lower Hinboun River. Interviews and email correspondence with international hydropower specialists in Vientiane have indicated that the rate of erosion on the Nam Hai as a result of the THPC diversion project is estimated to have reached 1 million tons per year between 2002 and 2006. Current estimates by these consultants suggest a total of between 9.5 to 14 million tons of sediment eroded from the Nam Hai channel, carried downstream into the Hinboun system, since THPC project initiation in 1998 (R.M. Watson, pers. comm.). These consultants indicate that the Nam Hai channel has not stabilised in relation to the diverted flows, and indeed the river's erosion rates may still be increasing.

Given the above observations (which will be situated in relation to the experiences of one community on the lower Hinboun below), it is concerning that THPC has yet to accept the correlation between the extensive, potentially accelerating, project-induced erosion patterns on the Nam Hai, and increases in sedimentation in Nam Hinboun. The THP Company has not acknowledged that that these erosion patterns have aggravated natural flooding occurrences on the mid to lower Hinboun system, or that the additional diverted discharges have raised flood water levels and prolonged such events.

It seems clear that this scenario—the creation of hydropower diversion-induced, river sediment choke points and an accelerating sediment wave being forced down the Hinboun channel, producing the patterns of post 2000-2001 wet season flooding events for villagers in the mid to lower Hinboun system— would represent a very expensive problem for the Company. Engineering works to prevent erosion and remove sediment from the Hinboun (and possibly to enlarge the Hinboun channel) would cost into the tens of millions of dollars (RM Watson, pers. comm.). Alternatively (possibly additionally),

full compensation and livelihood mitigation programs for significant numbers of resettled families, may well be within the same range.

Observers (including the external EMD review, see Blake, Carson, and Tubtim, 2005) have noted the significant effort and partial successes, which have gone into the EMD program. Yet, the task and responsibility of the EMD is in fact to *mitigate where possible, and to fully compensate* downstream communities for all project-related impacts and displacements. This means mitigation and compensation is to be provided not only for the flooding problems, but also for accumulated losses or impairment to fisheries, riverside gardens, water supplies, livestock and property, over an accumulated nine-year period. As described in more detail below, the THPM EMD program is falling far short of this objective in Pak Veng village. Rather than meeting fully the commitments of their slogan of ‘power, progress, and corporate partnership’ THPC has transferred responsibility for the major portion of their total environmental costs onto impoverished downstream Lao communities living along the Nam Hinboun.

As noted in the introduction, it is ironic that many villages on the middle and lower Hinboun valley have not yet received electricity services, nearly ten years after the THPC project came online. THPC is not legally obligated by their Concession Agreement with the Government of Laos to provide electricity to all villages along the Hinboun River. GoL has an electrification project, which is supposed to extend the grid along the Hinboun Valley. From the perspective of Pak Veng villagers, the ultimate lines of responsibility for delays in the provisioning of basic electricity services are unimportant. This report was not able to locate information on the overall profitability of THPC’s hydropower operations. That THPC paid out US\$113.5 million in dividends to shareholders between 1998-2002 is however indicative of very significant profitability. Laos, on the other hand, is a very poor nation state with genuine and structural governance problems, in which delays and issues in the provision of public services are the norm, not the exception. That is, there are fully foreseeable problems with public service delivery in Laos. It will be left with the reader to decide whether this ongoing situation with the lack of basic electricity services for affected communities in the Hinboun valley is indicative of a “genuine, deep, and long term commitment to mitigating the environmental impact of the project and supporting communities around it” on the part of THPC.

The next section will examine in more detail the failures, and limited successes, of the THPC EMD in providing mitigation and compensation for the project-induced changes produced in a village field site located along the Nam Hinboun. Following this, the overlapping and reinforcing outcomes of a ‘double enclosure’ experienced in Ban Pak Veng, as a result of land zoning for forest plantation development, are detailed.

IV. Resources, Livelihoods and Hydropower-Induced Transformations in Ban Pak Veng

Ban Pak Veng is a village of 48 households located along the mid-lower Hinboun River, about 10 km upstream from the district town of Ban Songhong, and 8km by unsealed road to Highway 13. As with the neighbouring villages along the Hinboun River, the people of Pak Veng are reliant upon a mixed assemblage of livelihood strategies. Historically these have included: fishing, collecting a wide range of plant and animal forest species, cultivating upland and lowland rice, and raising of livestock. While rural life in Laos is founded upon the village landscape and its resources, Ban Pak Veng is also integrated into commercial and political networks extending into Khammouane province and beyond. While some of the older village members have never ventured far beyond the district town of Ban Songhong, others villagers arrived more recently to marry and settle in the village. At present, Ban Pak Veng is undergoing intensive rates of out migration of young people in pursuit of new wage labour opportunities. Young people are leaving the village for employment in the markets of Thakhek or Vientiane, in the rubber plantations of *Isaan* (Northeast Thailand) across the Mekong, as housemaids in the wealthy suburbs of Bangkok, or even as far away as the shrimp processing plants in Songkla, southern Thailand.

While it is crucial to recognize the connections, which have always linked the people and resources of Ban Pak Veng to a broader political economy, villagers also have relied upon access to local common pool natural resources for their livelihoods, food security and cash income. These common property resources include the river and stream fisheries; forests for hunting, collecting edible plants and growing rice; paddy and swidden fields for grazing; bamboo stands; and mature forests for housing, and sites for cattle grazing. Cash income is earned in particular from the sale of livestock (cows and buffalos), fish, charcoal and bamboo shoots. Women make house sweeps out of broom grass, or weave fish traps and rice steamers for sale in Ban Songhong. A large range of non-timber forest products including mushrooms and molluscs are not typically sold for cash income, but form an indispensable part of everyday food security.

It is incumbent upon outsiders to avoid a romanticization of rural life in Laos. While rich in culture and natural history, being a peasant farmer in upland Laos is, perhaps primarily, to be marginalised. It is a life of toil for relatively low returns. At the time of fieldwork, the oldest living member of Ban Pak Veng (out of a population of some 260), was a man of only 68 years. No child has ever completed high school from the village, and there is living memory of nearby areas having been affected by epidemics that have decimated local populations. Compared to this uncertain past, some local residents state there have been certain improvements in living standards in recent years, especially as related to health, although in the context of significant losses endured due to project-induced environmental changes.

The THPC project has ushered in a new set of changes to the ecosystem and the cultural-landscape of Ban Pak Veng, which, when combined with other ongoing changes in Hinboun district, are having unpredictable and far-reaching effects. The following section

will outline the basic features of hydro-power linked transformation and displacement occurring in Ban Pak Veng, including an analysis of the THPC Compensation and Mitigation program, which is aimed at ameliorating the negative downstream effects.

A. Wet Season Flooding on the Lower Hinboun

The lower Nam Hinboun has an established history of flooding. In interviews, villagers in Ban Pak Veng noted that 1993 was a high water year, which was well before the THPC project was initiated. However, villagers in Ban Pak Veng are unanimous in the opinion that the onset of severe and extended wet season flooding is timed with the onset of the THPC project operations. According to villagers, the flooding experienced since 1998 has increased significantly in both the extent (of the high-water mark), and duration, (the length of time for which lowland paddy fields are flooded). Previous to the THPC project, villagers claim that flooding events were not as high, and did not last as long as today. And under the previous wet season hydrological regime, their total wet rice production would not usually be lost completely.

Wet season flooding episodes are very significant for lowland villagers in Laos because of its timing in relation to the rice paddy (*naa*) cultivation cycle. Too much water in these low lying areas can drown the rice seedlings and result in a total harvest failure. And the simple reality is that villagers in Pak Veng village have not cultivated any wet season paddy along the Hinboun successfully since 2001, an unprecedented situation which has emerged just three years after the THPC diversion project came on line. Their former rice fields are now abandoned (see Plate 1). There have been sporadic efforts by residents in Ban Pak Veng after 2001 to plant a wet season rice crop, most recently in 2005, with three families making the attempt. From village interviews however, all of these efforts were lost due to August-September flooding events.



Plate 1: Abandoned rice paddy, Ban Pak Veng, eastern bank, dry season, April 2006. Note the deteriorated paddy bunds visible in the foreground and background.

The reason for the abandonment of rice paddy is clearly tied to the new regime of wet season flooding. Ban Pak Veng's riverside paddy field land (and indeed their entire village) is now unpredictably flooded with 1-2 meters of water in periods through the wet season. A visit to the village in July 2006 showed the extent of flooding in former paddy fields, located directly across the river from the village proper (Plate 2).



Plate 2: Same location as Plate 1, viewed slightly further to the east, wet season, July 31, 2006. The depth of flooding to this date in July, about 1 metre, was described by villagers as lower than in recent years.

Aerial photographs dated from 1992 confirm the previous extent of paddy land along the lower Hinboun River at Ban Pak Veng prior to the THPC project (Plate 3).

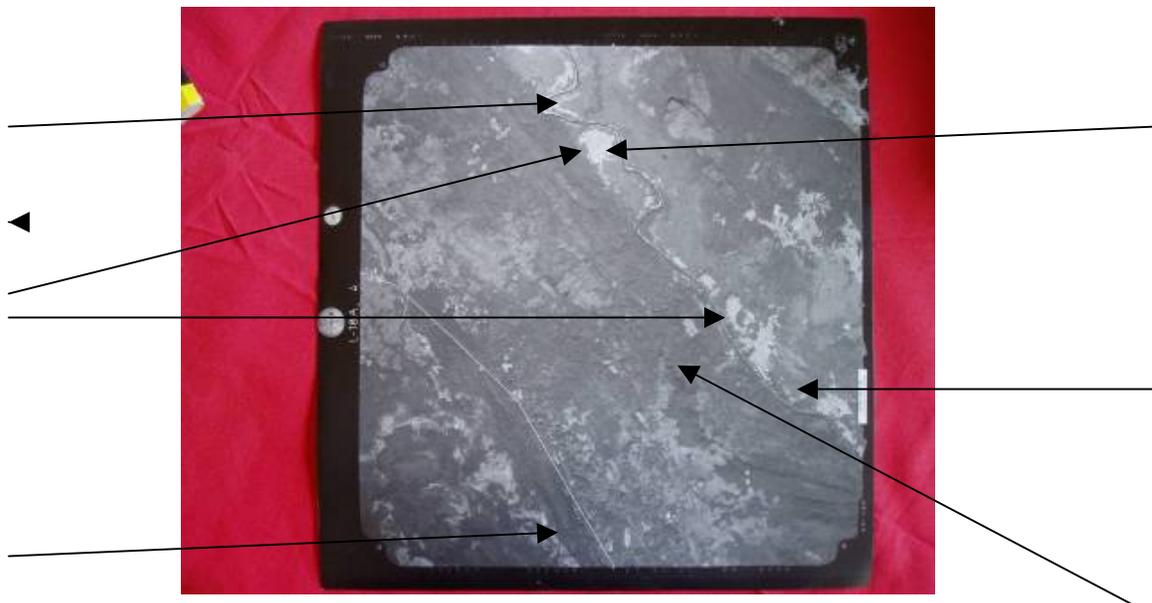


Plate 3: Aerial photograph, Hinboun district, 1992. On the left side, from top, the arrows point to the locations of Ban Song Khone, Ban Pak Theuk, Ban Pak Veng, and Route 13 South. On the right side, the top 2 arrows point to locations of large paddy fields. Note the extensive areas of light coloured, community paddy land along the Hinboun across and down stream from Pak Veng. The bottom right arrow indicates the generally high quality of intact forest in the uplands between Ban Pak Veng and Route 13. There are some small areas of light coloured upland plots, indicating a low intensity swidden system (and implying an agricultural system dominated by lowland wet rice cultivation).

A government organised Land and Forest Allocation exercise, conducted in 2001-2002 in Ban Pak Veng, documented the physical presence of paddy production land in the village. At this time, forty nine out of seventy families identified in this summary maintained wet rice paddy locations within the territorial borders of Ban Pak Veng.¹⁰ Clearly, as of 2001, lowland paddy cultivation was a highly significant livelihood activity in Ban Pak Veng.

The effects of a complete loss of productive wet rice paddy due to post-2001 flooding events for people in Ban Pak Veng have been very significant. Previous to 1998, villagers used to trade their rice surpluses at the state run trading house at Ban Songhong, at the district centre. In exchange for their surplus of both rice and fish, they obtained commodities such as sheet metal roofing, clothing, household goods and fuel. At the present time, no family in the village produces a surplus of rice. Only 17 out of 48 families even maintain a *lao kao*, or a rice storage hut, which all Lao families would typically construct outside their homes to store rice through the year. Many of the existing *lao kao* are in an obvious state of disrepair or disuse. In 2006, two Pak Veng families did cultivate small plots of wet rice paddy, located along small Hinboun feeder streams in the village territory that are not affected by Hinboun flooding events (see Plate 39 below). Quite simply however, well over half of the families in the community no longer produce sufficient quantities of rice to require storage huts.

Families in Ban Pak Veng were never exclusively reliant upon wet rice, and they did cultivate upland swidden (*hai*) fields prior to the THPC project (see Plate 3 above). From interviews, it was especially the younger families, who had not yet invested the labour to construct their own lowland paddy fields, or who lacked draught animals, which were most likely to maintain upland *hai* fields. For those who also held wet rice paddy holdings, mixing *naa* with *hai* may also have been a risk control strategy against occasional flooding events, or against crop damage from drought or pests, that could affect lowland but not upland paddy, or vice versa. Even further into the past, some forty to fifty years ago, one elderly village informant stated that most families in Ban Pak Veng did not cultivate lowland paddy, and instead were engaged only with swidden, because they lacked draught buffalo for plowing the fields. But in interviews, villagers in Ban Pak Veng could not remember a year within the recent past, before 1998, when they could not harvest at least a partial crop of lowland rice paddy from their riverside fields.

¹⁰ There were also a number of persons listed in this table who did not have residence in Ban Pak Veng, but who farmed paddy land inside the territorial boundaries of the village. This is an indication of the flexibility and negotiated nature of village boundaries and land use systems during this period in Hinboun district.

There is thus a weight of oral evidence from Ban Pak Veng that the causes of flooding on the lower stretches of the Hinboun can be correlated to the cumulative effects of the THPC diversion project. The fluvial-geomorphological effects of intensifying erosion, the creation of choke points in the river due to dislodged trees and accumulation of large woody debris, and the formation of a sediment wave in the Hinboun channel, all correlated to what are well documented upstream diversion erosion patterns on the Nam Hai, would be consistent with the noted increases in wet season flooding and the pattern of successive abandonment of wet season paddy in Ban Pak Veng post 2001. Other explanations for wet season flooding and the clear pattern of abandonment of paddy fields, which, for example, attempt to link flooding to erosion and deforestation from swidden farming in the upper watershed, would need to produce some evidence. This evidence would need to be temporally correlated to the fact that villages such as Ban Pak Veng have not planted any wet season rice successfully along the Hinboun since 2001, just three years after the initiation of the THPC project.

In an interview with the author in Vientiane, THPC preferred to locate their explanation for Hinboun flooding events upon other factors.¹¹ The explanations offered included:

- more rain, and natural flooding patterns of the Hinboun tributaries
- increased wet season levels of the main Mekong channel, leading to back-flows into the Hinboun River
- upstream logging and mining activity;
- shifting cultivation in the upper Hinboun watershed catchments.

But the extent of flooding, reaching far up into the middle stretches of Hinboun River, at the location of Ban Pak Veng, suggests that explanations that focus on backwater inflows from main Mekong channel are insufficient (RM Watson, pers. comm.). THPC has also suggested that smallholder riverside tobacco farming on the Nam Hai and Nam Hinboun may be a contributing factor to the Nam Hai erosion patterns (ibid.). While the issues of flooding and erosion are surely complex and to some extent multifactorial, it remains that THPC did not undertake any baseline measurements of the hydrological regime of the Nam Hai or Nam Hinboun prior to project initiation, which could serve as a database for analyzing the differential effects of various factors. In the absence of any other supporting evidence, the most reasonable explanation is the simplest and most direct. A strong argument could be made that THPC, as the most obvious source of hydrological change on the Nam Hai/Hinboun system through this major inter-basin diversion project, must assume responsibility for compensating for the economic losses tied to downstream flooding events for peasants along the Nam Hinboun.

B. Hydropower Mitigation and Compensation in Ban Pak Veng: “*Kwaan Jai Sao Naa*”

As with the other downstream villages in the Hinboun EMD program, THPC has launched a mitigation and compensation program in Ban Pak Veng, which is aimed to

¹¹ Interviews with Bobby Allen, THPC, Vientiane, March 2006; and Bounma Molaknasouk April 30, 2006, THPC EMD Ban Nahin.

address the impacts on fisheries, riverside gardens, and water supplies.¹² The initial form of THPC compensation for livelihood losses in the Hinboun valley was support for dry season, irrigated rice production. In Ban Pak Veng and elsewhere, the materials to support this project, in the form of diesel pumps and tubing, were supplied to the villages between 1996-1998 by the Government of Laos, through an irrigation support project unrelated to THPC (Plate 4).¹³



Plate 4: Dry season diesel irrigation boat and pumps, upstream at Ban Pak Theuk.

In Ban Pak Veng, the capital costs for the pontoon boats and diesel pumps were provided by the Government of Laos for free, and some initial canals were constructed, although at the time there were no supports provided for fuel or fertilisers. Pak Veng villagers reported good yields with the GoL irrigated dry season rice scheme in the first year, about 1998. Loans were secured from the Lao Agriculture and Promotion Bank for covering the diesel fuel costs. According to the Pak Veng headman the twelve participating households borrowed an average of 300,000 kip each (in 1998 dollars, approximately US\$265). The interest rate was 3%, due back at the harvest period. Harvests were said to be high, with yields achieving 120 *sop* per 4 *rai* (at 35 kg per *sop* of unmilled rice, this translates into an impressive 6.5 tonnes unmilled rice per hectare). In the second year, the same twelve families again enrolled into the irrigation scheme, however this year harvests plummeted at the same time as input costs rose. Pak Veng villagers reported that their crop was affected by a disease (“the rice plants flowered, but stayed straight”). Participating villagers came away with a total harvest of only six *sop* (210 kg) over the entire 36 *rai* (5.75 hectare) irrigated area. By year three of the government irrigation project, in 2000, the scheme had collapsed, amid much acrimony in the village. Strong

¹² It has not been made clear however of whether company support for irrigated dry season rice or vegetables was initiated in direct admission of responsibility for the loss of wet season paddy in Ban Pak Veng.

¹³ The information in the next sentences on the GoL dry season pump irrigation scheme is based on a personal email communication, RM Watson, January 12, 2007.

tensions had emerged in the village concerning the spatial arrangement of the irrigation canals, which would leave some farmers' fields at a disadvantageous position in relation to the canals. Other villagers reported in interviews that due to poor management of the irrigation system, some fields were flooded while others had not enough water.

Perhaps in relation to these problems with the dry season irrigation system, the village had voted in a new headman (*nai ban*) in 2001. In the dry season between 2001-02, this newly elected *nai ban* gave permission for the irrigation equipment to be removed by district authorities, and allocated to an upstream village. The pipes went to Ban Kaen, 13 villages upstream on the Hinboun, and the diesel pumps went to Ban Mon, five villages upstream.

The question of the removal of the irrigation pumps continues to be a divisive political issue in the village, and it has served to reinforce divisions between households into competing political camps based around two charismatic leaders. Many in the village say that the *nai ban* from 2002-2004 did not consult the rest of the villagers or the village political committees before signing away the pumps. The present *nai ban*, voted into his position in 2004, is at a loss to explain the former headman's decision. As the issues around the irrigation pumps arouse such a degree of embarrassment and indignation for villagers, and as it was very obviously a continuing factor in the political positioning of the two men with primary political aspirations in the village, I did not push my questioning around the exact circumstances of the event. The present *nai ban* however has harsh words for the former headman's decision to give away the pumps to another village, without any apparent benefit. A possible indication of motive for the actions of the former village headman however, came on the last day of my fieldwork, when we went out to visit the former *naa* fields of an older fellow from the village. He relayed the story of how, in 2000, he was nearly arrested by the district authorities, due to the heated disputes emerging in the village around the construction and spatial arrangement of the irrigation canals. Officials from the district had to come to mediate this dispute directly. This episode resulted in such anger and tension that, even seven years afterwards, the gentleman (Plate 6) did not want to say with whom he had the argument. It is possible then, that the former *nai ban* gave away the irrigation pumps from not only a sense of frustration, but perhaps, as an attempt to keep inter-personal relations in the village from splintering beyond repair, and the village from disintegrating.¹⁴

Only twelve out of approximately 50 households in Ban Pak Veng had enrolled into the state dry season irrigation scheme. In interviews, other Pak Veng families expressed their

¹⁴ In relation to these issues, THPC wrote to the author: "Poor leadership and internal conflict are the main reasons for the failure of programs that have been successful or at least more successful in other villages" (Email correspondence, May 28, 2007). It is also clear that when vulnerable communities and fragile ecosystems are destabilised by major hydropower interventions, some will display "good leadership and cohesion" and some communities will face problems. This very foreseeable range of dynamics on issues of leadership does not absolve the company of responsibility for fully compensating and mitigating their impacts for all affected communities. As suggested above, it is also entirely possible that the previous headman of Ban Pak Veng was displaying the very characteristics of leadership, which THPC suggests were lacking, through the act of giving away the irrigation pumps for the greater purpose of maintaining village integrity and solidarity.

reluctance to participate in terms of a fear of entering into a debt relationship to the Agriculture Bank. Many stated that, at the time, they still had their own paddy fields, which they could farm in the wet season. But events in relation to the THPC project were about to overtake them. While the above government irrigation scheme had collapsed by 2001, in Ban Pak Veng this was also the last year that a significant number of families attempted to plant their usual *wet season* rice in their fields on the east bank of the Hinboun River. From this point onwards, wet season flooding swamped these efforts.

In other villages in the Hinboun valley, the THPC EMD reported major early successes with re-starting the initial government dry season irrigated rice project. Unfortunately for the people of Ban Pak Veng, since 2002 their irrigation boats have sat unused, with one parked beside the village headman's house (Plate 5), and the other on the opposite shore. They are stripped of their pumps motors, and one of these valuable pieces of equipment now serves as something of a storage shed for the headman's tools, rice and corn.

A unique piece of village graffiti was recently painted on the first irrigation boat in Pak Veng village, which reads "*kwaan jai sao naa.*" *Sao naa* would translate as 'rice farmer' or 'peasant'. '*Kwaan jai*' means 'the person or thing you could not live without'; or something or someone 'very close to your heart.' But yet, the irrigation boat just sits there in the middle of the village, useless, like a shipwreck that has washed ashore. When I asked about this graffiti, the headman laughed and shrugged and said, "I just did it!" Later, the headman described the graffiti as a joke. I first interpreted the sign as an ironic statement, to remind visiting officials of the history of failed development promises, and the difficult situation villagers are attempting to negotiate. That is, the graffiti, written offhandedly in order to dry out a paintbrush, surely represented something of a 'weapon of the weak' (Scott, 1985), an effort to 'turn the tables' on visiting company representatives and their provocations to be cooperative development villagers. Indeed, EMD field staff referred to Ban Pak Veng as their "problem village." The perception of THPC field staff was that the families in Ban Pak Veng were slow or unwilling altogether, to participate in the newest round of compensation and mitigation strategies on offer by the company. For villagers, the abandoned irrigation boats are also a constant and painful reminder of this disappointing experience with state organised development efforts, which the graffiti serves to partially lighten and displace.



Plate 5: Ban Pak Veng's irrigation boat, in front of the headman's house. The graffiti joke, partially obscured, reads '*kwaan jai sao naa.*'

My field assistant also compared the graffiti on the irrigation boat to a sign that was once stuck beside a particularly egregious Vientiane city pothole, which read 'no swimming'. In both cases, the dual audience for the graffiti are both frustrated local residents, and admonished visiting officials. Another possibility however is that the graffiti is a political statement by the present *nai ban*, reminding everyone in Pak Veng of the former *nai ban*'s questionable decision to give the pumps away for free. Here, *kwaan jai sao naa* becomes a political statement by the current headman, to deflect criticism for their current livelihood predicament onto the former village leader. Whatever the latent meanings, squeezed between the Lao state, two multinational resource companies, and complex political networks and blocs among residents in the village, including his primary political rival (who has the advantage of being born into the village), the current headman's position in Pak Veng village is very difficult and very political.

In 2002-2003 therefore, the Environmental Management Division of THPC had restarted a subsidised dry season irrigated rice scheme in a number of villages on the Hinboun, although their work did not appear to extend as far down the Hinboun as Ban Pak Veng (and at any rate, Pak Veng had given away their pipes and pump machines). A revolving fund to support input costs was financed by THPC. Participating villagers could borrow from the fund and would be responsible for paying back a fixed percentage. Initially, this initiative met with significant success, and yields stated to be very high, up to 5-6 tonnes per hectare. This EMD scheme has also run into management problems in subsequent years however, primarily, it is suggested, due to a rice blast disease associated with the high nitrogen/high production, and risky, agricultural strategy adopted by THPC (RM Watson, pers. comm.). Tensions also emerged between THPC and certain villages, which were viewed by the company as attempting to manoeuvre out of repaying their share of the input costs. Farmer debts to the THPC supported village fund program also emerged, as diesel fuel costs continued to rise, which in turn led to a reduction in support by THPC, and an emphasis on switching the dry season rice program towards corn, rather

than water-demanding rice (ibid.). The experience of capital intensive engineered irrigation systems in northeast Thailand suggests that there are often serious natural, economic and technical hurdles to effectively implementing large-scale irrigation systems (e.g. Blake, 2001 in Thailand; Shoemaker, Baird and Baird, 2001:48-52, for the Xe Bang Fai River in Laos), and some observers are unsurprised that the GoL-THPC scheme in the Hinboun valley has suffered a similar fate.



Plate 6: Pak Veng villager, on his now abandoned paddy fields, describing the local disputes over the construction and arrangement of the dry season irrigation canals.

The 2005-2006 dry season started optimistically in Ban Pak Veng, with the entrance of a new THPC subsidised irrigation scheme: dry season corn. Fourteen households, typically wealthier, more experienced, and with extra available labour, decided to take the risk (including five families who were also previously involved in the GoL irrigated rice scheme). Yet, the corn project has also been met with very limited success. During a follow up trip in February 2007, the participating Pak Veng villagers had made a decision not to continue with this project option. From the project results (Annex 2), the reason for a less than enthusiastic response becomes apparent. The top income earner, number 5, a former *nai ban* and one of the hardest working and most skilled farmers in the village, was able to come away with an adequate profit of about 720,000 kip (approx. US \$72.00)¹⁵ on 2 rai of dry season corn¹⁶ (although that was only because of the fact that a calculation error was made by EMD staff, and his input costs were only calculated for one rai). The lowest return after input costs came for farmer 14, at 45,000 kip (US \$4.50) for the effort of growing one rai of corn (see Annex 2). It was observed that farmers who had located their fields situated closest to the river generally came away with higher yields.

¹⁵ Participating farmers were also advanced 50 kg of rice @ 3,500 kip per kg -- which is column 11 in the Table 1)

¹⁶ 1 hectare = 6.25 rai.



Plate 7: A more successful plot with the THPC dry season irrigated corn project, February 2006.



Plate 8: February 2006, same date as Plate 7, showing significant variation in yields between farmer plots.

It is important to recall here that the irrigated corn system did not enrol any of the very poorest households in Pak Veng. Indeed, for all of the reasons which make development interventions so often unsuccessful, THPC's overall EMD program in the village has in fact had very little success with enrolling such households. An array of factors work against the inclusion of the most vulnerable households: a typically short supply of adult household labour; a calculated conservatism by the poor regarding enrolment into what are often risky new production systems; and the general effects of a reinforcing pattern of

social marginalisation within the village. An analysis of participation in the irrigated dry season vegetable farms, the village revolving fund, the livestock vaccination program, and the outhouse toilet program, highlights a general pattern of the exclusion of the more vulnerable households from THPC's development programs (see Annex 3).

Summary of Annex 3:

Average Participation Index: 1.52/4

3 Very Poor Families:

Average Participation Index: 0/4

27 Poor Families:

Average Participation Index: 1.41/4

18 Medium Families:

Average Participation Index: 2.06/4

Number of Pak Veng families not enrolled in any major THPC compensation and mitigation activities: 10/48

It should be noted that the irrigated dry season vegetable garden project was aimed at replacing the traditional dry season vegetable gardens grown along the banks of the Hinboun. To a limited extent these riverbank vegetable gardens can still be cultivated (see Plate 9); however a look at the extent of sheering-effect erosion occurring at Ban Pak Veng provides an indication of why this traditional garden system is no longer feasible in most sites (Plate 10).



Plate 9: Limited riverbank gardening on eroded riverbanks with fluctuating water levels, Ban Pak Veng, December 2005.



Plate 10: Sheering effect of riverbank erosion, Ban Pak Veng, February 2006.

To compensate for these lost riverbank gardens, THPC has also organised a smaller, dry season irrigated vegetable project. It is also the aim of EMD to support a transition of Ban Pak Veng villagers into growing and selling these vegetables for cash. After installing a second, smaller scale irrigation system (with floating pumps) and providing three years of input support for diesel, fertiliser and seeds, this program is designed to become 'self-supporting', whereby the profits from the sale of vegetables become sufficient to cover the costs of inputs. In 2006, 25 of 48 village families were enrolled in the project, and it provided nutritious vegetables for many families. Yet again however, very few of the poorest families were engaged (see Annex 3), and to date, none of the families in Ban Pak Veng have been able to make the shift to selling any marketable surplus produce in the district market at Songhong. From observing the range of vegetables sown, and the everyday manner in which the produce is used in household cooking, most village women are more interested in using this program to provide daily food security, rather than negotiating complex and contingent arrangements for bringing these vegetables to market; of which few have any experience. It remains to be seen what will happen to this program after 2007, when the THPC subsidies for diesel and inputs are to be ended.



Plate 11: A range of household produce, THPC vegetable gardens, Ban Pak Veng, February 2006.

In summary, the overall THPC EMD mitigation and compensation program has met with very limited success in Ban Pak Veng. In this, it bears recalling the extent of displacement from the village's pre-1998 riverside paddy land. Household interviews conducted by research assistants in December 2006 indicate that eleven of the more established and older residents of the village—that is, the farmers who would have been maintaining their own paddy rice fields through the early to mid 1990s—described their pre-THPC rice paddy harvests as either sufficient for the entire year, or more than sufficient, with the option of storing or selling surplus rice. In Annex 3, these families are represented by households 28, 31, 32, 33, 34, 35, 36, 40, 41, 47 and 47. One of the most respected elders in the village, a former Buddhist monk, stated directly: “We are poorer because of the flooding” (village interview, December, 2005).¹⁷

C. Externalizing Downstream Effects: THPC- Linked Flooding and Livestock Losses in Ban Pak Veng

The ecosystem outcomes linked to the THPC project have not been limited to agricultural losses. In July-August 2006 during the author's stay in Pak Veng village, a livestock epidemic began, possibly involving a disease called *hemorrhagic septicemia*. This outbreak resulted in the loss of 15 adult buffalos and 3 adult cows from July 7 to August 22 (Plates 12-14). One buffalo expired in a stream behind the village, the carcass of which served as a source of water pollution, and was likely a vector in the onward spread of the disease. In addition to the immediate health concerns, the livestock epidemic represented an overall economic loss to these families in Ban Pak Veng in the range of

¹⁷ See Tables 8 and 9 below for summary data on village rice security in 2006.

US\$6,500. For a full statement on this issue, written by the author and submitted to THPC in October 2006, see Annex 4. For THPC's response to this letter, see Annex 5.



Plate 12: An infected village cow (fore grounded) showing characteristic symptoms of disease, appearing in the mouth and tongue. The onset of the epidemic was strongly correlated with the presence of standing water in the village, and in turn, to THPC-linked wet season flooding events. July 31, 2006, Ban Pak Veng.



Plate 13: The epidemic would claim an adult buffalo within 24 hours. July 31, 2006, Ban Pak Veng.



Plate 14: A Pak Veng farmer transporting a buffalo across river for burial. July 31, 2006.

THPC did provide a timely *mitigation* effort to this problem, and at the request of the author, sent an EMD team to re-vaccinate the livestock herd at Pak Veng. However, there has been no movement by the Company to financially *compensate* villagers for the direct losses incurred through the deaths of 18 head of buffalo and cattle, which can be closely correlated to wet season flooding effects, the presence of polluted standing water in the village and the THPC diversion project.¹⁸

Households in Ban Pak Veng have also been forced to live with the unmitigated effects related to THPC-induced wet season flooding in the village proper (Plates 15-20). During these flooding events, standing water quickly became fetid with the manure waste of livestock. Villagers were forced to wade through the water as they undertook their daily activities. This situation, which has been repeated each wet season for the past number of years, represents not only an economic threat in terms of the health of livestock. It also represents a serious threat to human health, particularly for young children. Plate 19 below shows an example of the skin rashes, which accompanied the last flooding events in July-August 2006.

¹⁸ In response to this section, THPC commented: “The presentation of the data on the hemorrhagic septicaemia outbreak does not take into account the facts that this outbreak was regional and that Pak Veng refused to cooperate in the EMD vaccination program. These facts should not be buried in annexes. Even though THPC was not the cause of the outbreak and had their programs rejected by the village authorities, it has subsequently returned to the village and vaccinated all remaining cattle and buffalo free of charge” (Email communication, May, 28 2007). THPC’s framing of Pak Veng villager’s traditional beliefs in *phi* spirits as representing a ‘refusal of cooperation’ by villagers, is perhaps indicative of the extent to which THPC is avoiding responsibility for affected downstream communities. The reader is referred to the annexes for a fuller account.



Plate 15: A poorer family's home inundated with floodwaters.
August 1, 2006, Pak Veng village.



Plate 16: Livestock as a disease vector
August 1, 2006, Pak Veng village.



Plate 17: Stagnant floodwaters
August 2, 2006, Pak Veng village.



Plate 19: Foot rash from polluted floodwater.
August 6, 2006, Pak Veng village.



Plate 20: Wet season THPC-linked flooding on the Nam Hinboun turns the houses into islands. Facing west to Ban Pak Veng, on former rice paddy land. July 31, 2006.

D. Uncompensated, Project-Induced Relocation in Pak Veng Village

From 2001, three families in the village have also had to move their homes because the banks of the river were literally disappearing under their homes. As of February 2007, ten Pak Veng households have decided to completely disassemble and reassemble their homes and relocate to higher ground behind the village (Plates 21-23). THPC has not provided any financial or material support for this move, which is directly related to the flooding events that now regularly accompany the wet season months. Even though THPC generates significant profits on an annual basis, and the company is the recipient of major ADB loans with attached social and environmental safeguards, and even though the company publicly proclaims an outstanding record in social and environmental issues, there has not been any compensation or support provided to Pak Veng villagers for this relocation.



Plate 21: Displaced from their homes, moving uphill to avoid floodwaters.
January 2006, Ban Pak Veng



Plate 22: A young man establishing a new family home on higher ground
2006, Ban Pak Veng

The manner in which the displacement effects of the first THPC project have been handled in Pak Veng village does not inspire confidence in the ability or commitment of the company to effectively oversee the outright relocation and resettlement of the community in 2010, as proposed in the Theun-Hinboun expansion Nam Gnouang 8 project documents.



Plate 23: Representing hydropower development: Pak Veng residents being informed by THPC staff of the company proposal for the relocation and resettlement of the village.
June 2006, Ban Pak Veng



Plate 24: Pak Veng residents being informed of the plans for relocation and resettlement of the village.
June, 2006, Ban Pak Veng

E. Fisheries and Living Aquatic Organisms

This research effort did not attempt what would have been a highly complex survey of fishery management techniques and fish catches in Ban Pak Veng. What can be highlighted however is the crucial importance of this food source for sustaining livelihoods and supplementing cash income in Ban Pak Veng. Any larger fish caught will

almost always be sold for cash income, either to traders who visit the village (including Oji-LPFL staff), or, in the wet season when the access road is impassable, transported down to Songhong village by villager motorboat (Plates 25-27). The range of species of fish, frogs, mollusks, shrimps and other river organisms caught, and the management techniques employed are highly diverse and sophisticated in the Hinboun River, as elsewhere in Laos, and these aquatic organisms serve as a daily protein source. The local ecological knowledge of fisheries is also highly impressive—Annex 6 lists the phonetic names of 61 species of fish, which an 11-year-old boy from Ban Pak Veng, already a highly skilled fisherman, listed one evening with the occasional help from his teenaged brother. It bears repeating that, to date, in Ban Pak Veng THPC has not provided any mitigation or compensation the losses in fisheries resulting from the dam construction, such as through the construction of fish ponds (see Shoemaker, 1998; Warren, 1999; Schouten *et al.*, 2004 for data on project-induced fishery declines in the Hinboun).



Plate 25: Fishery catches and trading in Ban Pak Veng



Plate 26: Dry season stream-fishing is also an important source of fish protein, Ban Pak Veng



Plate 27: Dry season stream fishery, Ban Pak Veng



Plate 28: Local food security and ecological resources in Pak Veng village. A picnic forest lunch with grilled stream fish, *khao neo* (sticky rice), garden vegetables, and *lao lao* (rice alcohol). February 2006



Plate 29: Local ecological knowledge—a young boy fishing, July 2006, Ban Pak Veng

F. Conclusion:

A village meeting was held on June 25th 2006, with the staff from the Theun-Hinboun Environmental Management Division, where the author and field assistant were observers. The meeting was held to gauge the villager's expectations and issues with respect to the NG8/THXP project. THPC EMD staff began a series of questions related to direct concerns with the THXP expansion project. Below are the edited author notes to this meeting:

THPC: "What do people worry about in the future? If the NG8 expansion project is constructed?"

Villager Responses:

1. We have no rice to eat, no paddy. This is because of Theun-Hinboun, and the flooding, every year it comes, and quickly. We request rice to eat.
2. Our village areas have flooding. We request to move the village, to clear an area for a new settlement, and to build a road to new settlement area.
3. We request a fish pond, with the provision of small fish.
- 4: We have no place for our animals when there is flooding. They also then get stolen at night [this is by outsiders who come in at night on the Oji access road].
5. We request to clear a new area for gardens at the south of the village, and an electric pump.
6. Health. There are problem with foot diseases. And we have stomach aches and fevers. This is because the water and food are not clean.

In fact, there have been specific policy decisions made by THPC and their financial backers that have led to a structural neglect of downstream villagers on the Hinboun River. The company mitigation and compensation program is not working to effectively reconstruct the livelihoods of the people on Ban Pak Veng. This is not a matter of achieving a 'correct' implementation of the village irrigated corn, gardening or toilet projects, although the fact is that the poorest members of this community are still not being enlisted into the EMD program. The issue is broader and structural, and calls for significantly more resources by THPC to fully and effectively work in reconstructing the livelihoods of affected Hinboun district residents. What is also required is for THPC to address the underlying cause of the downstream flooding on the Hinboun, which are related, according to expert opinion, to the diversion project and to the destabilization of the riverbanks of the Nam Hai, leading to massive amounts of annual sediment erosion and the creation of river choke points and sediment waves.

THPC is not a charity organization. Their responsibilities as a company are to mitigate where possible, and then fully compensate, affected downstream communities for all damages and losses that their operations have resulted in. The fact that these are very poor and vulnerable communities, and that THPC is a very large and profitable company, adds to the moral argument that villagers should experience a net improvement in their livelihoods compared to their pre-project situation. The reality is that the village elder's

assessment of the situation, on page 33 above, is correct. The families of Ban Pak Veng have been significantly impoverished due to the outcomes of the THPC project.

Villagers currently have few options, although the ingenuity, detailed knowledge, and resourcefulness with which they are able to survive and make a living through this situation are impressive. The basic agricultural response of Pak Veng villagers, to the loss of wet rice paddy land and the generalised failure of the THPC compensation and mitigation program, has been to shift production into the only other areas of the village which can support rice—that is, the forested hills between the village and the Hinboun river, and Highway 13. But in this crucial forest-based livelihood support zone, 600 hectares of productive secondary forest—a full third of total village territory and almost all of their potential upland swidden forest-land—has been zoned for bulldozing and commercial eucalyptus production, via the Oji-Lao Plantation Forestry Ltd. project. It is to this second process of enclosure and double displacement that we turn next.

V. Oji Paper and the Multiple Drivers of Displacement: From Fisher and Paddy Farmer, to Swidden Cultivator, to Plantation Labourer

THPC EMD Question: “What do you worry most about for the future, in your own idea?”

Villager’s Response: “We will have no rice to eat.”

“We had no money for buying oil for the pump irrigation machine. We have good soil for rice paddy in this village, but if we plant, we cannot harvest. There is too much flooding. Now we seek employment with Oji to find money to buy rice. We cannot persist.”

“We have no land. Oji has taken it.”

[Oral Translations, Pak Veng Village Meeting Discussion with THPC EMD staff, June 25, 2006]

“They want the Oji company to stop. Or else they will have no land for swidden.”

[Interview on the situation of Ban Pak Veng, with a resident from neighbouring Ban Nong Dong. April 6, 2006.]

“No academic staff [i.e. Lao state officials] are coming to look [at our problems]. Where are the agricultural staff, where are the forestry staff? Why don’t they come to give us advice? If things continue the way they are going in this village, within the next few years all of the young people will have gone to Thailand. Only the older people will remain.”

[Oral Translation, internal Pak Veng village meeting held during the livestock epidemic crisis, July 31, 2006].

With the loss of paddy from flooding, and the loss of the dry season irrigation pumps, the only other rice supply option for villagers in Pak Veng has been to shift progressively into upland rice cultivation through swidden (shifting cultivation) farming systems (or, *hai*). An understanding of the upland swidden-forest rotational system in Ban Pak Veng also provides the entry point for a discussion of the Oji Lao Plantation Forestry Ltd. activities in Hinboun district and this village.

Oji-Lao Plantation Forestry Ltd. is a joint venture plantation project between Japan’s Oji Paper Ltd., holding an 85% stake, and the Government of Laos (15%). Oji Paper entered into the project in December 2004, with a takeover of the New Zealand BGA-Laos Plantation Forestry Ltd. BGA had originally secured the concession lease agreement with

the Government of Laos in 1997. BGA was a recipient of approximately US\$1 million of subsidised loans through the Asian Development Bank Lao Industrial Tree Plantation Project (ITPP). Upon takeover of the BGA project, Oji-LPFL has paid off the full principle of the original ADB financing package.

Oji Paper is a significant player in the global pulp and paper market, and is the largest paper company in Asia. PriceWaterhouseCoopers' annual survey of pulp and paper companies lists Oji Paper as number eight in the world, with 2005 revenues reaching US\$10.8 billion. To compare, the Gross Domestic Product of Laos in 2005 was US\$2.9 billion (World Bank, 2006). The Oji-LPFL project is likely geared towards developing a base of high yielding plantation forest land to support a significant pulp and paper manufacturing expansion project by Oji near Shanghai, at the port city of Nantong. The proposed Oji Nantong project represents a projected investment of US\$1.7 billion, involving construction of a 1.2 million ton per year integrated pulp and paper mill. Securing the wood fibre supply to this mill will be imperative for the company, given the new competitive pressures other, ongoing pulp and paper manufacturing investments in China are placing upon the regional and global fibre supply situation (see e.g. Cossalter, 2004; Sun, Katsigris, and White, 2004). With respect to pulp mill fibre supply issues, the International Finance Corporation of the World Bank Group (IFC, 2006:26) has recently stated:

“We see fibre supply developing as a crucial issue for investors and funders. While in the past, investors were encouraged to look only at high growth demand drivers, fibre supply constraints have the potential to undermine margins for less capable operators. As correct assessment of raw material supplies is a key determinant of earnings growth, failure to obtain sufficient and consistent supplies is therefore likely to lead to share price correction.”

Oji Paper report that they are seeking to export 450,000 BDT's¹⁹ of woodchips per year from Laos, which would make the LPFL project the largest single ex-Japan in-house source of woodchips. It is reasonable to state that the risk pressures upon Oji-LPFL to generate a stable supply of wood fibre in support of this major capital investment in China will determine their overall land acquisition priorities in Laos.²⁰ Indeed the company is proceeding with the Laos project even though they have not published any detailed studies on the potential effects upon villagers of zoning one third or one half of village territories in Hinboun and Pakkading districts for fast growing plantation production. The Company's 29 page Social and Environmental Impact Assessment, completed in 2002, does not address any significant problem areas (see EcoLao, 2002).

Under the terms of the contract agreement, Oji holds prospecting rights to locate up to 50,000 hectares of suitable plantation land, within an identified concession area of

¹⁹ Or, 'Bone Dried Tonnes,' a standard unit of measurement for pulp woodchips.

²⁰ Indeed, the first thing a visitor will see upon arrival at the Oji-LPFL regional office in Ban Songhong, Khammouane province is a wall-mounted, whiteboard chart which details the company's progress in meeting the targets for hectares planted. In 2006 this target was 4,000 hectares, in subsequent years it will be 7,000 hectares per year.

154,000 hectares, extending between Hinboun district in Khammouane province, and Pakkading District in Borikhamxai province. There are approximately 56,000 Lao people, living in 94 villages, inside this concession zone. The terms of the state lease agreement are very favourable to the company, in the range of US\$6-\$8 per hectare per year. By comparison, in China, land rents for commercial tree planting may range up to US\$70 per hectare per year, with US\$40 typical for Brazil or South Africa (ADB, 2005:46).

Before being purchased by Oji, BGA had planted approximately 1,600 hectares of acacia and eucalyptus in their concession area. Oji- LPFL was able to meet their targets of 4,000 hectares planted in the 2005-2006 season. In future years the planting targets will be 7,000 hectares per year, up to an overall company target of 50,000 hectares (Plate 30).



Plate 30: LPFL’s seedling nursery operations at Ban Songhong, Hinboun District.

Oji LPFL is concerned to project a positive image regarding their investment in Laos. Oji’s on-line wood procurement policy states that the company aims to seek third party environmental certification status for each of their eleven overseas plantation holdings²¹. In April 2006, Oji’s jointly-owned plantation in Quy Nhon (Binh Dinh province) Vietnam, was the first in that country to qualify for a Forest Stewardship Council (FSC) sustainable forest management certificate. Preparations have begun in Laos for a FSC forest management certificate program.

In addition to these efforts towards forest certification, Oji-LPFL has begun investigations into the Clean Development Mechanism program, operated under the United Nations Framework Convention on Climate Change²². In 2005 a Feasibility Study was published by the Global Environment Centre Foundation²³ for how Oji might

²¹ See http://www.ojipaper.co.jp/english/pdf/wood_material_policy.pdf

²² See http://www.ojipaper.co.jp/english/news/2006/release_20060614.html

²³ See “CDM Project Activities in Laos: Eucalyptus Plantations and Use of Biomass Energy”, available at http://gec.jp/gec/gec.nsf/en/Activities-CDMJI_FS_Programme-List.

qualify for CDM status in Laos. The Oji-LPFL CDM proposal is organized around developing a small scale, biomass fuelled electricity generation power plant, from “shrubs” which are being cleared during plantation establishment, and from on-site post-harvest wood residues. This, it is suggested, will be sufficient to generate electricity to a number of villages in the project area. Selected portions of the report read:

“The areas for plantations by LPFL are mainly lands degraded by slash-and-burn farming...and spontaneous second-growth is hardly expected. In addition, the inhabitants do not have steady incomes and must continue to rely upon slash-and-burn agriculture.”

“...local inhabitants in the subject area continue to practice illegal slash-and-burn farming and the spontaneous recovery of the forest cannot occur due to the land degradation. The alternative scenario, “keeping the current non-forest” land-use will not be prevented by any of the barriers.”

“...Unless this project is implemented, illegal slash-and-burn farming will be continued by the locals, who have no other means to secure food.”

The contradiction that is elided in this document is that, in the case of Ban Pak Veng, as with many other villages located along the Hinboun River inside the Oji concession, farmers are undertaking swidden farming not out of timeless tradition, but largely due to the loss of access to lowland paddy from the THPC hydropower project. The document shows a lack of understanding of even the most basic aspects of swidden farming systems in Laos. It ignores at least twenty years of research in Laos on the importance of upland farming and swidden based non-timber forest products in the rural economy. In the case of Laos, Foppes and Ketphanh, (2004: 1) have written:

“The direct contribution of NTFPs [or, ‘non-timber forest products’] to food security in valuation studies is roughly 50% compared to that of rice, the staple food, together these foods take up around 80% of total value of family subsistence expenditures. NTFPs also contribute indirectly to food security, as they can be sold to buy rice in times of shortage. NTFPs are estimated to contribute 40-50% of cash income of Lao rural households. A similar amount of 50 % of average household cash income is used to buy rice (more for the poorer families). NTFPs are therefore the most important safety net or coping strategy for the rural poor in Lao PDR.”

The World Food Program in Laos (2004: 1, underline added) concurs on this issue, stating:

“The majority of Lao people depend upon Non-Timber Forest Products (NTFPs) for their existence. Rural households are reliant upon NTFPs for subsistence (food and shelter) and trade. They provide 50% of cash incomes in rural villages, where 80% of the Lao population lives. Typically, the poorest families are the most dependent on NTFPs, the sale of which enables these families to purchase

rice for their own consumption. Foppes (IUCN, 2000) comments that NTFPs provide a low-cost survival system securing food, housing and medicinal needs. Their importance cannot be over stated.

The Oji CDM feasibility study statements on slash and burn agriculture and the role of forests in supporting rural livelihoods are misinformed, perhaps willfully. They reduce swidden systems in Laos to questions of legality or illegality, and denigrate this form of agriculture as incapable of providing a formal, “steady income.” As will be shown below however, the income opportunities provided by company plantation labour regimes are scarcely more secure (see e.g. Noor and Syumanda, 2006, for data villagers and plantation labour regimes in Indonesia). As a result, a new set of livelihood risks are being pushed onto rural villagers in Laos, while the safety net of access to natural resources is removed from underneath them.

A. Oji’s Plantation Programme in Central Laos: “Pulping” or “PLUPing” (Participatory Land Use Planning) Village Forest-Lands?

A map of the Oji-LPFL concession and existing plantation area is shown in Plate 31. To January 2007 the company had planted approximately 4,000 hectares. An additional 1,600 hectares were planted by BGA in the years prior to 2005.

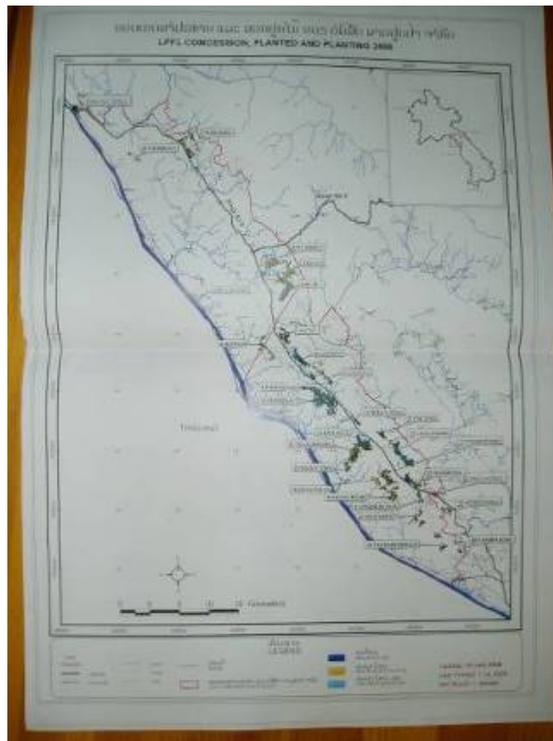


Plate 31: Oji-LPFL concession area and tree planting progress to June 2006.

According to the 1999 Lease Agreement between BGA and the Government of Laos, a total of 14,678 hectares of degraded forest, grassland, shifting cultivation and agricultural production lands had already been surveyed for plantation production, in Hinboun and

Pakkading Districts, and had been approved by the provincial authorities (Annex 7). And Annex 8 provides data on the progress of the BGA and Oji-LPFL planting programs in Hinboun district between 1996 and 2006.

Plates 32 to 34 below indicate, through author photos, the approach that Oji LPFL has taken in their plantation program in Pakkading and Hinboun Districts. Their operations have involved clearing high quality secondary forests for eucalyptus and acacia plantations, at times leaving villagers displaced and living in a radically altered landscape, on the edge of the cleared block areas.



Plate 32: Ban Phone Thong, Pakkading District. March 22, 2006.



Plate 33: Ban Phone Thong, Pakkading District. March 22, 2006.



Plate 34: Ban Dan Hi, Hinboun District. June 22, 2006.

It should be noted that there is nothing illegal about these operations. BGA and then Oji-LPFL have proceeded in accessing plantation land in Laos through the legal framework designed for upland zone land use planning and zoning— the Land and Forest Allocation Programme (LFAP). In theory the LFAP forms part of a broader Land Use Planning and Land Allocation (LUPLA) process, developed by the Ministry of Agriculture and Forestry in the mid 1990s in association with Lao-Swedish Forestry Project advisors. A 1996 Prime Ministers Decree (PM/03/1996) brought the LFAP into effect. Under the Land and Forest Allocation program, village boundaries and village forest and agricultural areas are delineated, with the forests then classified into five basic categories: protection forest, conservation forest, production, regeneration and degraded forest. Distinct land use regulations are attached to each category of forest. Village production forest can be used for NTFP collection and for household timber use; while timber cutting is not permitted in protection or conservation forest. Upland agricultural rice practices (swidden) could be undertaken in designated areas only. Up to three hectares per family may be awarded with Temporary Land Use Certifications (T-LUC's) for permanent access to upland swidden fields.²⁴ In theory, T-LUCs were to be convertible into full Land Use Certificates if the land was being used in a 'sustainable' manner, although the allocation of full LUC's has not yet occurred in Laos.

²⁴ Ironically, a three year rotation of swidden fields would provide insufficient time for fallow, and eventually lead to serious soil degradation and reduced rice yields. This is in opposition to the stated program goals of promoting ecological conservation and poverty reduction.

Inclusive of where village boundaries have been fully mapped in accordance with the LFAP, villagers are awarded only use rights, and ultimate ownership rights over village forest-land and the resources on those lands, including timber, is maintained by the Lao state. Large areas of swidden fallow land located inside the territorial village boundaries may thus be ceded for national development programs such as industrial tree planting, in full accordance with existing legislation, without a legal requirement to provide compensation to villagers. Indeed zoning and planting of industrial trees on these 'degraded' sites is a state priority. Full land titles, which allow for fully secure local ownership, are being issued in urban and peri-urban zones, in association with the second phase of a World Bank-funded Land Titling Project. As of yet however, titling programmes have not been extended significantly into rural areas.

There have been a series of critiques on the flaws and mis-implementation of the LFAP over the past years in Laos. The broad patterns and outcomes have been summarised by Ducourtieux *et al.* (2005: 519), who write:

“Land allocation accentuates inequalities in the villages, leading to increased impoverishment of the most underprivileged farmers— in direct opposition to the stated aim of reducing poverty. In all the cases studied, land allocation is related to an artificial acceleration of rotations, which lead to soil degradation, increased weeding (at the cost of other economic or social activities), reduced yields, greater agricultural risks and increased poverty for slash and burn farmers.”

In Hinboun and Pakkading Districts, the LFAP system has been used in a somewhat different way than elsewhere in Laos, as described in Ducourtieux *et al.* (2005) among others. Rather than manipulate the LFAP process to favour the zoning of conservation and protection forests (and thus contributing to the effort to reduce swidden), in central Laos the usefulness of the LFA program for state authorities has been used to zone village lands as *degraded* forest, which are then available for zoning and 'rehabilitation', to plantation companies. In both strategies however, reducing or eliminating swidden has been the common objective. For the GoL, swidden farming remains a problematic issue both from a poverty alleviation perspective and from a sustainable forest management perspective. It is viewed, often through a cultural, even racialised, lens, as a practice of upland ethnic minorities, which is both damaging to forests and economically unproductive, and therefore as a threat to the interests of the state (Vandergeest, 2003). The GoL maintains that swidden is to be eradicated by 2010 (which follows upon a previous directive issued in 1994 that swidden was to be eliminated by 2000). It is at times unclear, however, if it is all forms of shifting cultivation that are to be eliminated (or, at other times the term 'stabilized' is used), or just pioneer forms of swidden involving the cutting of larger, economically valuable tree species.

At the district level there are often more pragmatic approaches taken to upland swidden practices, an everyday realisation by officials that this form of agriculture represents the food security foundation for thousands of families in rural Laos. In Hinboun district for

example, there appeared to be something a tacit agreement between forestry officials and rural villagers that the state will not ask of, and the villagers not speak of, swidden farming. In Hinboun district, the three-year T-LUC system restricting swidden to three or four specific plots was also never implemented. There is little direct attempt to eradicate swidden here, which is also perhaps reflective of an awareness of local officials that villagers have become more reliant upon swidden as they have lost access to productive paddy along the Hinboun river.

However, village shifting cultivation land and degraded forest land are being allocated for tree plantation development to companies, and the promotion of tree plantations is a key overall strategy for transitioning villagers out of swidden agriculture in these villages. Indeed, in the Ban Pak Veng LFAP agreement, completed on 13 November, 2002, the district committee charged with implementing the LFAP is known as “*kanaa kamakan jad san tii din lae mop din mop baa yut tii kan tang baa het hai lae jat san asip khong tii kan mai.*” In English, this would be translated as “*The Committee of Land Use Planning and Land Allocation, Poverty Reduction and Elimination of Slash and Burn Shifting Cultivation and Finding Permanent Jobs.*”

In Hinboun district, the village LFAP programmes were implemented with the direct financial and technical support of BGA (and subsequently, through Oji-LPFL support). This situation introduces a more direct conflict of interest into the LFA process, whereby a commercial plantation company with a direct interest in accessing land, is significantly adding to the salaries of the Provincial and District Forestry Department staff charged with implementing the state land zoning process. Wages for GoL forestry staff are typically in the range of US\$40-\$60 per month. Given the relative economic imbalances involved between local forestry staff, and a company such as Oji with annual revenues three times the size of the GDP of the state of Laos, it is not difficult to imagine whose interests are likely to be protected first when the company seeks access to land, particularly in an authoritarian state that does not tolerate political dissent (Stuart-Fox, 2004).

The Land and Forest Allocation map produced for Ban Pak Veng, in booklet provided to the headman, appears as follows (Plate 35). Plate 36 below shows the same LFA map, as posted in the village centre at Ban Pak Veng:

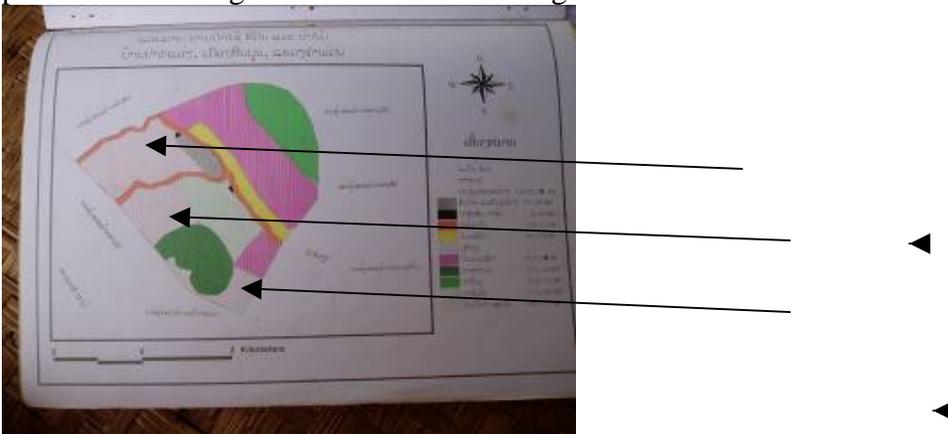


Plate 35: Ban Pak Veng LFA map. Arrows pointing to village land zoned to BGA-Oji LPFL.



Plate 36: Village LFA map showing locations zoned to BGA-Oji. Ban Pak Veng.

The lightly coloured areas are the village lands in Ban Pak Veng that have been zoned to Oji-LPFL for commercial plantation establishment through the Ministry of Agriculture and Forestry LFA process. In Lao, the legend which indicates these locations reads *din suan book mai bolisat bii jii ae* (“land for tree planting, BGA Company”). 610 hectares out of a total village land area of 1,833 hectares have been allocated to Oji-LPFL for tree planting. With the exception of just over thirteen hectares of stream side paddy, which was carefully mapped and labeled with GPS instruments supplied by the company (see Plate 37), any further village claims to land in these spots were overridden. It is notable that a very singular attention is paid to respecting paddy land in Plate 37—it is mapped down to the square meter—while all other aspects of village resource use were excluded. The village forest and swidden land zoned for plantations is considered unstocked, “degraded forest”, and, despite the wealth of research which has shown the importance of such forest-lands in sustaining rural livelihoods, without any record of any land tax payments villagers and households have no further legal claim.



Plate 37: 13.37 hectares of Ban Pak Veng lowland paddy along streams that have been recognized as farmer’s land inside the area zoned for plantation by Oji-LPFL.

The LFAP derived forest land categories for Pak Veng village are listed below. Particularly notable is how the areas which are to be allocated for plantations were generated. Interviews with Oji company officials in Ban Songhong, Hinboun district have confirmed that the figure for *din suan book mai bolisat bii jii ae* (“land for tree planting, BGA Company”)—610 hectares—was simply taken as 1/3rd of the total Pak Veng village territory. This more or less random proportion was arrived at without any analysis of how the land was actually being used, or an analysis of the importance of this land in sustaining current village livelihoods. This same process has been repeated for many other Oji villagers in Hinboun and Pakkading Districts.

Overall, BGA-Oji has based their support for the land zoning program in technical criteria. The company process for zoning land was described to a 2007 meeting in Vientiane as follows. An initial Feasibility Study was first used satellite imagery to demarcate the boundaries of the 154,000 hectare concession area. The company then subtracted the rice paddy locations from this total, using aerial photographs. Soil classification maps from the Ministry of Agriculture and Forestry were then used to determine soil type locations, which were suitable for tree planting. Out of a total area of shifting cultivation with suitable soil classes in the two districts, some 96,500 hectares, 40-50 per cent was estimated as ‘available for commercial tree plantations.’ From this point, LFAP exercises were used to acquire, or extract, land from villagers.²⁵

Annex 9 shows the cursory and inadequate attention which went into the preparation of the company-village agreement upon which Oji-LPFL have based their plantation program.

Box 1: Village Land Use Categories in Ban Pak Veng under the Land and Forest Allocation Program:

• Din Ban lae Din Booksang [village housing land]	45.39
• Paa Saksit, Paa Xa [spirit and cemetery forest]	2.00
• Paa Pongkan [protection forest]	108.19
• Din Kasikam [agricultural land]	85.34
• Pou Hinboun	--
• Din Heykasikam [Land for Agricultural Expansion]	469.96
• Paa Sa Nguan [Conservation Forest]	171.00
• Paa Phunphu [Regeneration Forest]	292.50
• Paa Somsai [Use Forest]	174.25
• Din Pheua Tham Kaan Palit [land for agricultural production]	484.35

Khet Khoom Khorng Khong Ban
[Total Village Area]

1,832.98 hectares

²⁵ The information in this paragraph is based on, Oji-Lao Plantation Forestry Ltd., *Presentation to NLMA meeting on Land Use in Commercial Tree Plantations*, Vientiane, 14-15 February 2007.

Total Land Allocated for “Bolisat BGA” [BGA Company] **610 hectares**
(Derived as 1/3rd of Village Land)

When the 13.37 hectares of paddy land, mapped with the GPS, is subtracted, the net area allocated for Oji from Ban Pak Veng is 596.63 hectares.

For Ban Pak Veng, approximately 100 hectares of village land had been cleared and planted with eucalyptus by Oji to the end of 2006.

In a 2007 meeting on Land Use in Commercial Tree Plantations organized by the Ministry of Agriculture and Forestry (MAF) and the Lao National Land Management Agency (NLMA), Mr. Kham Ouane Boupma, Minister of NLMA used the following words to define landscapes which could be made available for commercial plantations establishment: “*barren land, grass land, degraded land without trees, and land that could not regenerate forest without human intervention.*”

The above evidence from villages in Hinboun and Pakkading Districts shows how far Oji LPFL has strayed from this idea of ‘degraded forest’ in their plantation operations. A larger point however is that in these districts of Laos, there are very few areas which are in fact ‘barren’, or ‘dominated by grassland’, or degraded to the point that forests and swidden fields do not quickly regenerate large trees. Indeed, the soil and climatic characteristics supporting dense forest cover in Hinboun and Pakkading Districts are largely why BGA and Oji have come to invest in these areas of Laos. The high quality soils and the high annual rainfall (averaging 2,000-2,500 mm per year) make it much more possible to reach the required plantation growth rates of 18-20 cubic meters of wood volume per hectare per year, which is the single most critical precondition for the profitability of Oji’s project.

B. At the Summit of Duckfoot Mountain: Forests, Landscape and Memory in Ban Pak Veng

In discussing the process of land alienation and plantation establishment in Ban Pak Veng, and the responses of the community, it is crucial to situate a discussion within the lived experience of villagers. Villagers in Ban Pak Veng are not actively resisting either the plantation company or the hydropower company in their operations, although many villagers have tended to avoid the THPC MCP initiatives, and some villagers have taken steps to complain about Oji’s activities in the village. However, many villagers responded in interviews that, in their view, some things had improved in the village with the development interventions over the last five to ten years. An anecdote may give some indication of how villagers situate recent developments in their village.

One afternoon, the village headman from Ban Pak Veng, and another community member who owned a motorboat engine, myself and my field assistant Phorn, went to visit Ban Pak Theuk, the next village upstream, to inquire with that village concerning the activities of THPC and Oji in their community. As we were relaxing and waiting for the

headman of Ban Pak Theuk to arrive at his home, Ai Pien began talking of how he used to live briefly in Ban Pak Theuk before moving to Ban Pak Veng with his wife, in the late 1970s. I inquired how many households lived in Ban Pak Theuk at that time. And his response was that there were a third more households living in Ban Pak Theuk in the late 1970s than today. A few more questions revealed that he and his young family had moved to Ban Pak Veng because of a fever epidemic, which had raced through Ban Pak Theuk one wet season more than 25 years previously, which was responsible for the deaths of many village residents. Compared to the living memory of many people in Ban Pak Veng, compared to a past that was unpredictable and often short, in terms of basic health care the situation *has* improved in Ban Pak Veng. However, it is also clear that in other respects, in access to natural resources, their livelihoods are heading towards significant deterioration. Compared to the benefits which THPC and Oji are extracting from the natural environment in Hinboun district, the people of Ban Pak Veng, and other villagers in this area, are not receiving a fair return for what they are having taken away.

Plate 38 shows the extent of plantation development in Ban Pak Veng as of August, 2006.

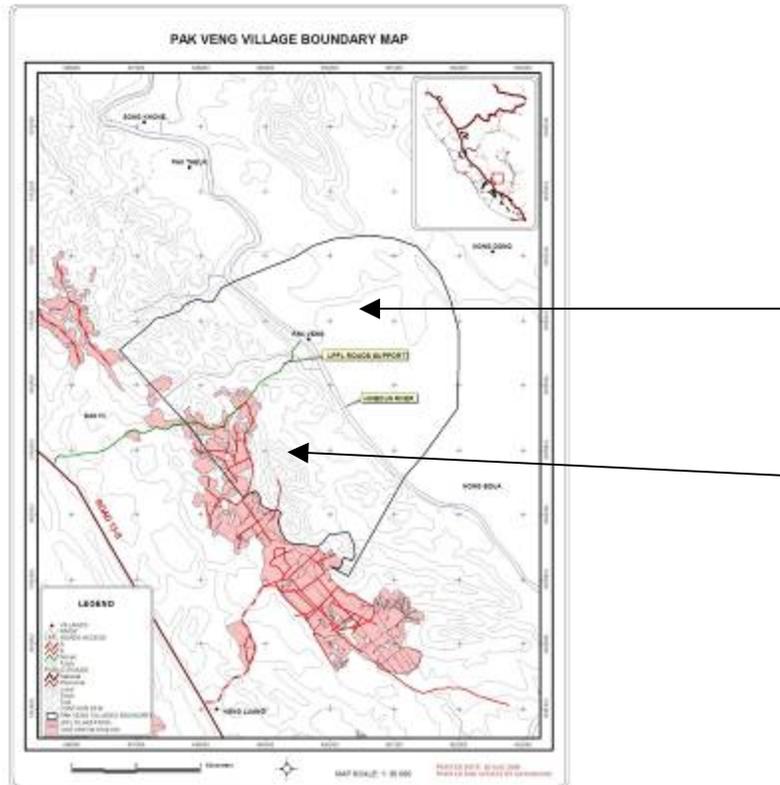


Plate 38: Ban Pak Veng LPFL plantation map August 2, 2006. Oji-LPFL.

It is useful to compare this map, showing the village boundaries, to the above Land and Forest Allocation maps (Plates 35 and 36), which show the location of the 610 hectares designated to BGA-Oji for tree plantations. All of the flatter areas inside the Ban Pak Veng village boundaries, shown in the map to the west of the Hinboun river (top arrow),

are seasonally flooded forests (now much more than previously), bamboo forests, scrub, or abandoned rice paddy. The only areas which are appropriate for upland agriculture in Ban Pak Veng are from the river eastwards towards the main highway (bottom arrow). With the exception of areas demarcated as village conservation forest, almost all of the area indicated by the bottom arrow has been zoned for Oji's plantation program. Thus, while the figure of 610 ha. of zoned plantation land out of a total village area of 1832 hectares may appear to allow for the potential to continue swidden, in reality, if the full proposed area is developed by Oji, this will enclose nearly all of the remaining upland swidden forest-lands (i.e. productive agricultural land) in the village.

In return for this scenario, Ban Pak Veng residents receive a sum of \$50 per hectare, to be awarded not in cash, but in the form of development interventions organized by the Oji-LPFL Company. In the case of Ban Pak Veng, this money appears to have been used in the extension of a company access road 1.3 km to reach the village proper, although nowhere are the sums made clear in any documents given to the villagers. As the Oji-LPFL company has a 50-year lease on these locations, this would amount to a compensation of US\$1 per hectare per year for village land. From the perspective of communities in Hinboun and Pakkading districts, this land is being given to a multi-billion dollar transnational pulp and paper company, nearly free of charge.²⁶

The Oji-LPFL programme started in Ban Pak Veng in 2005. Approximately 80 hectares were cleared using bulldozers, and prepared for planting with high-yielding eucalyptus clones. The company's plantation zone connects to established plantation sites at Ban Lao Louang, which were established in the late 1990s by the BGA Company. The author's arrival in January 2006 at Ban Pak Veng coincided with the second year of land preparations for plantations establishment in the village.

In describing the relationships between community upland swidden farming and the company plantation program, it is first helpful to outline the basic features of rice production in this village. Evidence from 2001 Land and Forest Allocation surveys show that prior to the onset of intensified wet season THPC flooding, a significant minority number of families in Ban Pak Veng did not maintain their own lowland rice paddy, (although from a personal knowledge of the people identified in the LFA document, almost all of the male family heads listed were young families, who likely would have been moving to clear their own paddy spots as their household became established). There are only small areas available for lowland wet rice paddies that are not affected by the hydrology of the main Hinboun channel (Plate 39).

²⁶ In discussions with the General Manager of LPFL, it was suggested that the figure of \$50 per hectare for what is, more or less, permanent access to land should be viewed as a 'starting point,' and that the company was committed to a 'long-term engagement' with local villages in their concession area. Nowhere are the terms of this long term commitment made clear for villagers however, and there are no company documents which I have seen which indicate what form such an extended commitment would take. This situation represents an unacceptable risk from the perspective of poor rural communities in Laos, who are losing their only real asset, as well as the entire basis for their food security.



Plate 39: One of two places for cultivating wet rice paddy in Ban Pak Veng, in a small valley location away from the main Hinboun channel.

The use of upland forests for swidden in Ban Pak Veng was always an option for community members. Swidden agricultural practices are based on family membership in Ban Pak Veng. Relatives or friends may often situate their swidden fields next to one another. This can be for simple comradeship, but it also saves on the perimeter area required for fence construction around the boundaries of one's field. Families will usually coordinate the burning times if their fields are next to one another—and share the labour in constructing fencing. After this however, each family usually is responsible for their own fields—with the exception of young, newly married men working on behalf of their parents in law, swidden agriculture is not a 'communal' undertaking in Hinboun district (although one may help a relative if one's tasks are completed early).

A swidden field is subject to the vagaries of weather. If the rains come early, a farmer may not achieve a sufficient quality of burn to make a viable swidden field. On the other hand, if a farmer decides to burn the fallen trees too early, and the rains are delayed, the water in the vegetation may hinder combustion and provide an insufficient source of fertilizing ash. In Ban Pak Veng in the burning season of 2006, a few families abandoned their entire effort at upland swidden for the year, after earlier than expected rains made a quality burn impossible for those who had waited too long. In such circumstances, all of the labour of cutting the forest is lost, at least until the following year, and a family is dependent on accessing the local wage labour market, selling fish or forest products, or even borrowing rice from relatives (or non-relatives, at interest), to survive through the year.

After cutting the vegetation and trees in the hot months and waiting for them to dry through April, the next step is to fire the dried forests. Nearby forests that had not been cleared do not catch alight, as only the cut vegetation is dry enough to burn (Plate 40).



Plate 40: Only the cut and dried vegetation is able to burn in swidden firing systems.

After the first burn, it takes some weeks to gather up the small twigs and branches, and cut any remaining vegetation, in preparation for a “second cutting and burning” (Plate 41). Around this time the first vegetable seeds are planted, to provide an advance crop of melons and a suite of other useful household vegetables before the rice.



Plate 41: Second burning in a swidden field, Ban Pak Veng.

The procedures for rice planting are as gender based as the initial forest cutting. Men use dibble sticks, punching depressions into the soil, which are filled with rice seeds by women. For planting, a supply of rice seeds is kept handily inside the hollow bamboo

stick, and the bamboo stick itself is used as a tool to cover up the soil over the rice seeds (Plates 42-43). At this time of planting, larger kin groups may join together to complete the work in each field.



Plate 42: Younger married men assist with preparing the swidden fields of their in-laws.



Plate 43: Planting rice in swiddens is a distinctly gendered set of activities.

Weeding (Plate 44) was only required once or twice in high quality secondary forest swiddens of Ban Pak Veng, typically for which women and older children would be responsible for. But often this work is shared between both men and women.



Plate 44: A husband and wife sharing weeding duties.



Plate 45: A family resting next to self-managed swiddens, Ban Pak Veng.



Plate 46: The range of fruits and vegetables, as well as rice, produced in swiddens (including chilies, corn, banana, papaya, beans, sugar cane, and melons) make the Lao colloquial term “*suan*” (or ‘garden’) an apt term to describe these integrated upland agricultural systems.

Harvesting takes place in November-December, again with each family largely controlling their own labour inputs. Pak Veng villagers stated that they never planted rice in the same field over multiple years; rather they identified and cleared new areas of forest each year in a rotational system. From conversations and observations of areas cleared for swiddens in Ban Pak Veng (outside of the new areas of large forests, opened up through the Oji-LPFL program,) the current rotation period for swidden fields appeared to be in the range of between 6-10 years.

The following represents the family labour estimates from one family who cleared swidden fields in the large forest area, and intercropped these sites with eucalyptus for Oji-LPFL. The total area was 1.28 hectares (measured with Oji GPS unit)

- | | |
|---|-----------------------------|
| - 15 days to cut the big trees and for first burn | [1 person, male] |
| - 16-17 days for second clearing and burning | [2 people, male and female] |
| - 2-3 days for fencing | [2 people, mostly male] |
| - 1 day for planting | [2 people, male and female] |
| - First weeding 7 days | [2 people, mostly female] |
| - Second weeding 5 days | [2 people, mostly female] |

Person-Days: 79

(no data on harvesting labour)

Provincial forestry authorities in Khammouane province have taken a pragmatic approach to farmers undertaking swidden farming systems. While the official policy of the

Government of Laos is still to ‘stabilize’ or ‘eliminate’ swidden agriculture, local forestry officials in Khammouane realize that this major agricultural production system is not going to be eliminated through official regulations alone. One official from the Khammouane forestry office relayed an indication of a more mediated and moderated approach taken to the swidden issue by both state officials, where some linguistic flexibility between the terms *hai* (swidden rice field) and *suan* (gardens, which may include fruit trees) ‘solves’ the problem of implementing the official swidden stabilization/eradication policy handed down by the central government:

The villagers do not say “*hai*” anymore. Now it is always “*bai het suan*” (or, “gone to work in my gardens”) [smiling]. They [villagers] plant banana, and papaya in the rice fields, and so it [*hai*] turns to “*suan*” [laughing].

The fact remains that villagers are using upland swidden plots for much more than just rice, and the following is a list of the major fruits and vegetables planted in Ban Pak Veng rice swiddens:

- *pak mak buab* (climber on a pole)
- *mak man*
- **mak thua** (bean)
- *mak kaanoy*
- *mak peuk*
- *mak hoong* (papaya)
- *pak salii* (corn)
- *mak taeng* (watermelon)
- *mak guay* (banana)
- *pak oi* (sugar cane)
- other melons
- *mak ped* (hot chillies)
- *pak e-tou*
- *pak sa nyet*

The same official interviewed above was also closely involved in the Land and Forest Allocation exercises in Hinboun District. Here, the mechanisms of controlling farmers’ agricultural and land use practices and promoting foreign investments are clear and direct, with much less room for ‘flexible implementation’ of development policy by local officials. Swidden agriculture is to be reduced and eliminated in Laos through allocating degraded swidden lands for commercial tree planting projects.

It is after the end of a swidden cycle, as the forest is quickly re-growing through the following wet season, when the full use of swidden in relation to non-timber forest products becomes apparent. It is a full landscape mosaic of forest types, between recovering swiddens, in their first, second or third year of fallow (*paa lao on*, see Plate 47), older swiddens, in their 5-10 years (*paa lao kae*), mature secondary forests (*paa dong*) and ‘older’ forests which provide the fullest range of forest products which are so important to rural livelihoods in Laos. Plates 48 through 58 show a range of mushrooms

and plants which thrive on the decaying logs of old swiddens, in *paa lao on* forests. The collection of NTFP's is also highly gendered, with women often holding primary responsibility for accessing and managing these resources. The sheer range and diversity of forest products of which village women have detailed knowledge is highly significant. Women in Ban Pak Veng know of well over 150 species of herbs, shrubs, fungi, and other non-timber products (I did not request them to list them all!), for each of which they know the best micro-site to find them, their seasonality, and their preparation requirements. This range of forest produce is simply indispensable for everyday village food security.

Men also collect forest produce when walking to and from their swiddens, though not to the extent of women, and they would rarely make a concerted trip to collect NTFP's in the manner that village women would. Men also go on occasional hunting trips with their hunting dogs in Ban Pak Veng, with a wild pig the most prized. Snakes, monkeys and other small mammals or reptiles would also be caught however (Plate 55).



Plate 47: An example of *paa lao on*, or one to two-year-old swidden fallow.



Plate 48: Areas of *paa lao on* are locations for collecting an important range of NTFPs, such as *nor san*.



Plates 49-50: A wide range of important edible plants, including mushrooms growing on rotting logs, are located primarily in old swidden fallows.



Plate 50: Women collecting *het kataan*, a type of edible mushroom in *baa lao on* (young swidden fallows). Ban Pak Veng.



Plates 51: Woman's basket of forest produce in the dry season. Ban Pak Veng.



Plate 52: Woman's basket of forest produce in the wet season. Ban Pak Veng.



Plate 53: Women's collecting team: wet season white mushrooms (*het kao*). Ban Pak Veng



Plate 54: Women's forest management institutions: Grandmother's *kaem* (broomgrass) collection team, Ban Pak Veng



Plate 55: Hunting trips can provide occasional sources of extra protein.



Plate 56: Women and men weave baskets and fish traps for use and for sale. Ban Pak Veng.



Plate 57: A father and daughter collecting bamboo shoots for sale. Ban Pak Veng.



Plate 58: Bamboo shoot sales to traders are a crucial source of cash in the early wet season, when rice supplies are running low. Ban Pak Veng.

Bamboo shoots (Plate 57-58) represent a particularly important source of cash income at the beginning of the wet season, at a time when rice stocks have dwindled to negligible for many villagers. The prime bamboo shoot collection season coincides with the beginning of the wet season, running from May to the end of June. Prices for bamboo shoots sold to traders in 2006 were in the range of 8,000 kip per 12 kg at the beginning of the wet season, dropping to 7,000 kip per 12 kg at the end of the season. While it was not possible to collect information from all of the households on income earned from bamboo shoot sales, a survey of 25 families showed average cash earnings of 185,000 kip (US\$18.50) per family through this three-month period. In Ban Pak Veng, bamboo shoot collection is largely a task for women and children; although men do participate (the man collecting shoots in Plate 58 is a widower). The amounts sold per family ranged from 16,000 kip (US\$1.60) (for a woman who does not walk well, and whose husband did not assist her), up to 600,000 kip (US\$60) for a hard working younger family. Besides the sale of fish, charcoal, and livestock, bamboo shoots were among the key local NTFP resources sold to traders coming to Ban Pak Veng.

Village records provide an overall estimate for bamboo shoot sales in the village, as a tax of 1,000 kip is collected for village development funds per 12 kg of bamboo shoots sold (there would be an incentive to under report this amount, so these figures could be taken as minimum amount). Village records show a total of approximately 4,000 Thai baht (1,072,000 kip; US\$107) was collected by the headman in bamboo shoot taxes during the wet season collection months of 2006. This suggests a total of 12.86 tonnes of bamboo

shoot sales in 2006 from the village, bringing into the village economy a value of income earned of over 8 million kip (US\$800).²⁷

Eventually, the fallow swidden fields regenerate to the point where it becomes ‘*paa dong*’, or big forests. In Laos, the irony of the Land and Forest Allocation program is that the program ‘fixes’ landscapes in a singular moment, and then enframes village-managed forests into modern classifications, as ‘conservation forests’ or ‘production forest’ and makes it illegal to conduct certain activities in these zones. In reality, such areas of intact conservation and production forests are often simply over-mature swidden fallows. For example, Plates 59 and 60 below show photos of officially zoned “conservation forest” (“*paa sa nguan*”) in Ban Pak Veng. Villagers themselves have other names for these forests however. For people in Ban Pak Veng, the forested hilltops pictured in the two photos below are called “Phou Ai Baa”, and “Phou Thamong” (‘Ai Baa Mountain’, and ‘Thamong Mountain’). Ai (*elder brother*) Baa was the name of the man who first made swiddens on that hill some years previously, and Mr. Thamong was the name of the villager who similarly cleared his swiddens in the area of the now tall, ecologically ‘valuable’ forests in Plate 60.



Plate 59: The colloquial name for the forested hill in the distance is “Phou Ai Baa.” Ban Pak Veng.

²⁷ This claimed tax total would be consistent with an average family cash income from bamboo shoots of approximately 167,000 kip per family, which is less, but certainly consistent with, the author’s survey of 25 households.



Plate 60: “Phou Thamong”, Thamong’s Mountain. Ban Pak Veng

Other forests types are similarly known in colloquial terms, which are not used in official state forestry programs. The village “protection forest” (*paa pong kan*) (Plate 61), is known in Ban Pak Veng as *Phou Din Bet* (“Duckfoot Mountain”), where there are traditional regulations in place against clearing these forests for swidden (the timbers in this forest are reserved for house construction). Indeed, much of the reason why the Ministry of Agriculture and Forestry (MAF) Land and Forest Allocation maps are poorly comprehended by villagers in Ban Pak Veng relates to the fact that the state officials, trained in scientific forest management, do not use anything like the same terms for landscape and forests as villagers do.

At the same time, it is crucial not to reify or essentialize forest and landscape management practices and traditions in Ban Pak Veng, or project them back into a mythical natural-sustainable history. It is useful to recall that the upland forests behind the village only took on its contemporary significance for food security within the last ten years, and largely as a result of an earlier displacement effect from the THPC-induced flooding. The upland landscapes are also under an increasing amount of pressure from villagers themselves, as new opportunities for selling forest and river produce emerge, particularly after the 2004 construction of the BGA/Oji-LPFL access road and the start of regular visits by traders.



Plate 61: At the summit of “*Phou Din Bet*”, or ‘Duckfoot Mountain.’ Ban Pak Veng.

With this brief introduction into the historical and the cultural production of village forests and landscapes in Ban Pak Veng, we can proceed to an analysis of the present and potential effects of the Oji-LPFL plantation program in the village.

C. The Micro-Politics of Agrarian Enclosure and Impoverishment: Land Clearing and Plantation Establishment in Ban Pak Veng under the Oji-LPFL Project

“Recently, there has been growing emphasis on the corporate social responsibility (CSR) concept. I am proud to say that, ever since the Company’s founding, Oji Paper’s management policies have emphasized CSR in line with the philosophy of its founder. In 1998, we articulated this basic philosophy in three phrases—“Contribute to the protection of the environment and the advancement of culture,” “Strive for continuous innovation in a proactive, responsive, and determined manner,” and “Build and maintain trust throughout the world.” Both the other managers of the Company and I do our utmost to act in rigorous accordance with this philosophy.”

- Shoichiro Suzuki, President & CEO, Oji Paper²⁸

“We are saying goodbye to our forests.”

- Village Headman, Ban Pak Veng, Hinboun District, Laos

²⁸ Oji Paper (2007). “An Interview with the President: The CEO’s Approach to Sustainable Management.” http://www.ojipaper.co.jp/english/sustainability/e_report/e_report_2004.html

In early 2006, there were two main methods of land preparations occurring in Ban Pak Veng. The first was with the bulldozer. The company cleared approximately 12 hectares of forest in a village location close to the access road (Plate 62).



Plate 62: Oji-LPFL forest-land clearing, Ban Pak Veng (in the background are the mountains of the Phou Hinboun National Biodiversity Conservation Area).



Plate 63: Ban Pak Veng resident (right) helping an Oji-LPFL subcontracted tractor team. February 2006.

Plate 63 above is particularly interesting, in it shows a village member from Ban Pak Veng (on right) assisting the Oji-LPFL subcontracted tractor driver and his foreman to repair the tractor—which is clearing village forests. It is important to reiterate that villagers in Ban Pak Veng have not acted in direct resistance to the tree plantation development. What they are doing is trying to support their families and to produce enough rice and food to eat, and they are seeking the best possible terms from the company projects in their village. In reality, given the authoritarian political circumstances prevalent in Laos, they likely have few other options, although villagers are by no means passive. Below, in Plate 64, a Pak Veng villager surveys an area recently cleared by subcontracted bulldozers working for Oji LPFL, in January 2006. He stated:

“If the villagers cut the big forest like this, we would go to jail... Laos loses benefits from these actions.”

This man’s responses were framed in reference not just to the inequalities between application of the forestry law between villagers and the company, but also to the overall ‘national’ implications of large-scale, extractive rural development strategies.



Plate 64: “If the villagers cut the big forest like this, we would go to jail.”
January 2006, Ban Pak Veng.

Another resident forwarded the following perspective on the Oji land clearing program in Ban Pak Veng, drawing upon his conversations with other villages located along the main banks of the Mekong River. The quote shows a wry defense of the terms of engagement with the authorities and the Oji Company over the LFA process and the plantation program, in the context of an accelerating plantation program in the district:

“Other villages beside the Mekong said to us [Pak Veng residents] ‘Why do you give so much land to Oji?’ They said we were stupid. But now it is their turn.”

Another villager, a member of the Ban Pak Veng Land and Forest Allocation Committee (which signed to the LFA framework described above), forwarded the following perspective:

“One day I will confront the district and provincial authorities about this Land and Forest Allocation. Yes, the province and district said that they have to give land to the company. ‘How much is up to you, and you can ask for benefits,’ they said. And the province and district said that if you have degraded forest or old swidden (‘baa lao on’), land you cannot use for agriculture and it has no economic trees, you can give it to the company. But at first they say you have to give land to the company, then they say you can give land with no economic trees. So they said two things.”

Plates 65 through 69 provide a sense of the landscape transformations occurring in Ban Pak Veng as a result of Oji’s plantation programme, as well as the often high quality secondary forest, which is being cleared to make way for monocrop eucalypt and acacia plantations.



Plate 65: Forest-land areas cleared by bulldozer, 2006, Ban Pak Veng..

In addition to the use of heavy bulldozer machinery, the second means which Oji-LPFL organised the clearing of upland forest-land in Ban Pak Veng in 2006 was through the provision of cash payments directly to a group of village farmers, paid to cut down their own forests. The farmers would then use this land for making swiddens for one year, and

also intercrop eucalyptus seedlings in between the sown upland rice. Plates 66 through 74 show how this proceeded in Ban Pak Veng.

For their exhaustive labour in clearing secondary forest by hand axe (Plate 68), which could take some months of labouring, Oji compensated the 13 participating Ban Pak Veng residents 800,000 Lao kip (approximately US\$80). The 13 households were also able to earn 600,000 kip per hectare for marking and digging holes (US\$60). The actual planting of trees was compensated at a rate of 20,000 kip per day. In 2006 the labour for marking and digging holes and planting trees in the locations cleared by company tractors was performed by outside wage earners brought in from Vientiane province by the company as the time when this work became available conflicted with the swidden preparation schedules of most of the residents of Ban Pak Veng.



Plates 66-67: Pak Veng village ‘degraded, barren forests’ prior to clearing for Oji-LPFL.



Plates 68: Oji LPFL paid villagers US\$80 per hectare in compensation to clear their own forests and plant eucalyptus on these sites for the company. The arrangements come at a heavy long-term cost -- a loss of villager access to the land for the next fifty years.



Plate 69: The rural poor "...may be forced to destroy their own environment in attempts to delay their own destruction" (Gallopín and Berrera, 1979, *cited in* Blaikie, 1985:19).
February 2006, Ban Pak Veng



Plate 70: “Second burning” period, preparing upland swiddens for rice and for intercropping with Oji eucalyptus seedlings.



Plate 71: Upland swiddens in forest locations opened up by the Oji-LPFL project. Ban Pak Veng.



Plate 72: Upland rice fields
June 23, 2006, Ban Pak Veng



Plate 73: Marking holes for eucalyptus seedlings in intercropped upland rice fields.
Ban Pak Veng.



Plate 74: Upland swiddens in forest locations opened up by the Oji-LPFL project. Ban Pak Veng.

Why would the thirteen families participate in clearing their own village forests on behalf of the company? Even more important than the direct cash income, which they urgently require, village respondents suggested that they were doing so in order to access these high quality upland forests for making swiddens. After clearing and burning and constructing a fence, rice could then be intercropped between the company eucalyptus seedlings. This could only be done for the first year however, as by year two the canopy in a well managed eucalypt plantation has begun to close. This group of thirteen villagers were clear in stating that they would have faced problems-- a fine per high diameter trees cut—from the district forestry authorities for clearing these locations of high quality secondary forests with their hand axes. The fact that the company was overseeing this work meant that villagers could use this opportunity to clear high quality upland forest, which, after burning would provide a good rice crop in return. The costs of doing so however were also clear. In effect, these villagers were trading short term food security and cash income, for the loss of access to these village forests for the next 50 years. The village headman put it bluntly, fully cognizant of the trade-offs that were involved: “*We are saying goodbye to our forests.*” Other villagers are also aware that if the company plantation project continues, they will not have any future locations for making swiddens and planting upland rice.

In theory, it may be possible to intercrop rice in a staggered block plantation program, designed and spread over seven or eight years. However the productivity of upland rice is dependent upon the fertilizing pulse of ash and charcoal from a good burn (see Plate 75). In subsequent rotations, there would be no such significant fertilizing pulse of ash, and there is little information on the long term sustainability of such soils in supporting upland rice after successive rotations of intensive eucalypt plantations. It seems likely

that expensive fertilizer inputs would be required in successive rotations to support intercropped rice—again placing another dimension of ecological risk externalized from a resource company onto community livelihoods in Ban Pak Veng. There is also no indication that LPFL has planned to stagger their plantation program around such local food security priorities.



Plate 75: Ash and charcoal from burned forests provide the fertilizing pulse of nutrients into soils, forming the basis of forest nutrient dynamics in upland swidden rice agricultural systems. This fertilizing pulse will not be available in successive rotations of eucalyptus plantation.

In a classic of the political ecology literature, Piers Blaikie (1985) investigated such questions of peasant land and resource use in the context of a broader political economy of development and soil degradation. In a section, which echoes the experiences of Ban Pak Veng, Blaikie writes (p. 19):

“...the relationships in which the inhabitants are enmeshed often encourage soil degradation in fragile environments—which has the effect of a vicious circle and makes it even harder for transitional and progressive technical (and political) changes to be made. In the words of Gallopin and Berrera (1979); They (the poor) may be forced to destroy their own environment in attempts to delay their own destruction.”

It bears noting that one of the major problems that villagers in Ban Pak Veng residents had with the LPFL Company in the planting season of 2006, which led to a complaint submitted with the district authorities, revolved around non-payments for the wooden fences built around these upland areas (Plate 76). Pak Veng residents cleared these spots but in which Oji saplings had also been planted. Fences are necessary both for upland rice, and for young eucalyptus seedlings, to keep cattle and buffalo outside of the fields. The company’s apparent position was that Pak Veng residents would need to build the

fence anyway, since they were planting rice in these locations. Pak Veng residents saw the company taking advantage of their labour, as the company eucalyptus seedlings were also being protected by the fences built by villagers, which would take approximately 1-2 weeks of hard labour to construct. The reader need not be reminded that the Oji Paper Company generated revenues of US\$10.8 billion dollars in 2006, while the annual income for Pak Veng residents is likely very close to the average GDP per person for Laos, in the range of US\$450 per year.



Plate 76: Disputes emerged around the lack of payments for fence construction, Ban Pak Veng.

A second major issue in Ban Pak Veng with the LPFL Company in the middle months of 2006 involved issues with delayed payments for village labour. In the months of June, July and August, most villagers had run out of their stores of rice, and were now fully dependent upon cash income to purchase their staple carbohydrates. Delays of weeks, or even months in the company payments for labour inputs meant that the poorest members of Ban Pak Veng were forced to borrow rice, at high interest, either from other village residents or from the rice millers in Ban Songhong. For one villager, one of the poorest members, one 30 kg sack of rice usually cost him 190,000 kip (US\$19). However, because the wages for weeding Oji's plantations were 2-3 weeks late, he had to borrow rice from other villagers to provide for his family. He would have to repay an amount of 230,000 kip (\$23) for the loan. This \$4 in interest represents an additional 2 days of labour on the plantation (at 20,000 kip per day). For this man, even though wage labour opportunities in weeding or fertilizing the company plantations were becoming available, he feared he would not be able to participate due to the acute requirements of his family's food security needs.

While these villager concerns may appear as minor, it is these every-day, micro-processes of displacement, enclosure, partially-successful mitigation projects and missed or delayed compensations, compounded over the last ten years, which have led to the current situation of Ban Pak Veng. Village residents are slowly slipping further and further behind in terms of their resource entitlements and social welfare.

D. Rice Production Strategies and Restricted Options

For other families in Ban Pak Veng, including many householders without the inputs of men who were willing to undertake the fatiguing 2-3 months of labour to prepare high quality secondary forests for swiddens, another option was to intercrop rice between eucalyptus seedlings in the areas cleared by the company tractors. This option was the method of choice for rice planting in 2006 for ‘labour-short’ Pak Veng households (for example, whose young men were away in Thailand working for cash income). However, the corresponding rice yields were also likely to be significantly lower in tractor-cleared areas than in the areas cleared by hand axe. In these tractor-cleared locations, any valuable trees were removed by the company, and the remaining woody vegetation was usually piled by tractor and burned, instead of felled and burned evenly over the entire field. Also, company bulldozers resulted in a heavy compaction of the upland soils, making it more difficult to plant and grow rice. In other available tractor-cleared locations, the quality of the soils was simply poor, with many small stones. All these factors would tend to increase weed growth and reduce rice yields in swiddens planted in tractor-cleared locations. Plates 77 below shows the quality of the forests which were excised out of the landscape in Ban Pak Veng, while the following Plates show farmers planting upland rice in these ‘tractor-cleared’ locations.



Plate 77: Tractor-cleared secondary forests, Ban Pak Veng.



Plate 78: Intercropping upland rice in tractor-cleared plantation locations was an attractive option for labour-short, or more elderly, households. Ban Pak Veng



Plate 79: Intercropping rice in 'tractor-cleared' locations. Ban Pak Veng.



Plate 80: Wet season weeding in an intercropped, tractor-cleared eucalypt plantation site. Ban Pak Veng



Plate 81: Oji-LPFL cloned, high performance eucalypt seedlings intercropped with upland rice. Ban Pak Veng.



Plate 82: Within the first year after planting, eucalypt plantations become unavailable for any further intercropping. Ban Pak Veng.

Annexes 10 and 11 provide a summary of household rice cultivation strategies in Ban Pak Veng through 2006. Of particular note are the average and the range of household rice security, and the overall trend that villagers who planted rice in the ‘tractor-cleared’ areas came away with lower yields than villagers who planted rice on ‘axe-cleared’ upland plots.

Average Household Rice Supply: 4 months
Average Household Rice Supply (own swiddens): 3.1 months
Average Household Rice Supply (tractor-cleared): 4.7 months

Summary Totals of Annexes 10 and 11:

Four Strategies of Rice Production, Ban Pak Veng 2006

1. Axe-cleared intercropped rice with Oji eucalyptus swiddens (mapped with Oji GPS) (13 data points)
Mean average productivity = 816 kg/ha.
Median average productivity = 682 kg/ha.
Average household rice supply: 5.75 months.
2. Own-managed swiddens (22 data points):
Mean average productivity = 748 kg/ha.
Median average productivity = 710 kg/ha.

Average household rice supply: 3.1 months

3. Tractor-cleared intercropped upland rice with eucalyptus (16 data points):

Mean average productivity = 642 kg/ha.

Median average productivity= 644 kg/ha.

Average Household Rice Supply: 4.7 months

4. Wet Rice Paddy (2 data points)

Mean average productivity = 1,563 kg/ha.



Plate 83: Local wage labour opportunities sawing wood. Ban Pak Veng.

E. Pulpwood Plantations and Income Generation in Ban Pak Veng

Promoters of industrial pulpwood plantations invariably point to the benefits to local communities, in the form of wage labour opportunities, as a crucial factor that justifies tree planting on degraded lands. Poverty alleviation is said to result from providing steady income generation for rural communities previously dependent upon the vagaries of sporadic access to non-timber forest products and other natural resources.

There has been significant debate on this issue. Analysis of the distribution of benefits from pulpwood plantations is dependent upon the scale of analysis used. What this report will attempt is a quantitative estimate of the total cash income earned by households in Ban Pak Veng for 2006. This is done through accessing the village headman's recorded notes, and paper receipts from the company, for all wage earning opportunities in Ban Pak Veng linked to the Oji LPFL project for this year. It is possible that the following is an incomplete record; however the author is comfortable that this represents a very good approximation, certainly within the correct order of magnitude, of the cash returns to Ban Pak Veng arising as a result of the Oji plantation program for that year.

Plate 84 below shows the type of cash labour, which is becoming available in Hinboun district with the Oji programme. The importance of this labour is not to be dismissed; it provides an important source of cash income for villagers at a time of year when rice stocks are at a minimum. At the same time, this report shows clearly how the Oji-LPFL planting program will result in a serious decline in upland rice productivity in villages in Hinboun district.



Plate 84: There are limited village labour opportunities in tree planting.
July 2006, Ban Pak Theuk

Cash income from the Oji project was earned through 4 broad methods in 2006 in Ban Pak Veng:

- Cash compensation for 13 families who cleared forest by hand axe for LPFL (for intercropping upland rice)
- Salaries for marking and digging holes, and planting trees
- Salaries for weeding in the rows in existing village plantations

In 2005, the daily wage labour rate paid by LPFL was 18,000 kip per day (US\$1.80). In 2006, this increased to 20,000 kip per day (US\$2.00), possibly reflecting a direct rise in the value of wage labour as a result of rising demand in Hinboun district.

It should be noted that on two of the three occasions during the author's fieldwork in Hinboun district when he was able to observe labour opportunities directly (once in Ban Pak Veng, once in neighbouring Ban Lao Louang, see Plate 85), the work was being performed by persons brought in to the village sites from the cities of Vientiane or from Tha Khek, because the opportunities for this labour conflicted with local imperatives and livelihood activities.



Plate 85: The tendency towards ‘non-local’ capture of employment benefits in industrial tree plantation development. External recruited chainsaw operator in Oji-LPFL acacia plantations. January 2006, Ban Lao Louang

Annexes 13 and 14 show the author’s data for cash income earned in Ban Pak Veng for 2006, from Oji-LPFL-related activities.

Summary of Annex 12: Household Tree Cutting, Planting and Weeding Labour Opportunities in Ban Pak Veng, 2007

3 Very Poor Households: \$14.00= avg. \$4.67 each
27 Poor Households: \$1,750.80 = avg. \$64.84 each
18 Medium households: \$919.12 = avg. \$51.06 each

Summary of Annex 13: Other weeding labour availability, 2007. [At the time of recording, the weeding in 80 hectares (2005) was completed, but had not yet taken place in the areas planted in 2006. The Pak Veng headman suggested there would be an additional 5 days of weeding left for this works in the village after this date].

Total person-days @ Ban Pak Veng: 322
Total Payments @ 20,000 kip per day =
6,440,000 kip (US\$644.00);
or US\$13 per household.

When the results of Annexes 12 and 13 are combined, an overall total of wages paid to Ban Pak Veng in 2006 was US \$3,327.42. This is not an inconsequential figure, and for many households in the village their cash income earnings will be very important sources of their total livelihood in 2006. However, the discrepancy among different households is

sharp; and the poorest households are not benefiting from these new wage labour possibilities. Secondly, major portions of these income-earning opportunities are one-off arrangements for village members to clear natural secondary forests on behalf of the company. This source of income will not arise again in subsequent years.

The thoughts of one village member perhaps summed up the overall sense of the village with respect to the cash labour options arising from the plantation program:

“Work with Oji is not a real job. The work is available just a few days at a time. It is not sustainable work.”

[Village interview, February 12, 2007]

Comparing the above labour options, to the suite of forest products and services provided by the natural forest land-swidden cycles (and recalling the US\$50/hectare in development compensation provided by Oji-LPFL), the limited benefits accruing to the residents of Ban Pak Veng is being far surpassed by the value of the land allocated to Oji-LPFL’s control. It bears repeating that this multi-billion dollar per year transnational paper company is already leasing this land from the Lao government at a rate far below regionally competitive land valuations.

F. Additional Trends and Issues:

The tree plantations in Hinboun district can still support limited livestock ranging land, and villagers at this time are not voicing concerns about access to grazing land (Plate 86). Perhaps, the company plantation program may provide continued locations for intercropping upland rice, in the periods between successive rotations. The potential for pesticide and herbicide residues to accumulate in these locations must also be considered however. It is also probable that such plantations are, in the long term, less able to support productive grazing lands than mixed swidden-natural forest fallows. Most certainly, the range of forest products and ecological services available in these plantations for local villagers is being vastly reduced.



Plate 86: Grazing options in Hinboun district eucalypt plantations.

Reforestation with fast growing tree species is often justified in the name of ecological integrity—whereby swidden systems are associated with deforestation and increased rates of soil erosion. The author and field assistant of this report spent a significant time in the months of 2006 walking through the forests and plantation landscapes of Ban Pak Veng with villagers. The above pictures and descriptions above make clear that ‘deforestation’, if it is to mean anything at all, must describe the bulldozing of village-managed natural secondary forests and swidden fields for monoculture rows of eucalyptus. These short-rotation plantations are in effect an agricultural crop, and should be considered as indications of tropical deforestation. Secondly, by far the most obvious and serious instances of wet season soil erosion and land degradation in Ban Pak Veng were not associated with village managed swidden fields. Rather, serious and highly damaging “gully” patterns of soil erosion could be easily and regularly observed in relation to the plantation access roads constructed by Oji-LPFL. The LPFL plantations in Plates 88-89 are only in their second year—there is another fifty years of wet season gully erosion on these sloping access roads to come.



Plate 87: Upland rice swiddens in Ban Pak Veng show little in terms of observable patterns of soil erosion.



Plate 88: Significant patterns of gully erosion in sloping LPFL plantation access roads. Ban Pak Veng.



Plate 89: Gully erosion in year old Ban Pak Veng eucalypt plantations

The result of the LPFL program has already resulted in a drastically altered landscape in the uplands of Ban Pak Veng, where productive forest and agricultural land is being taken out of local management. The inevitable result, as the program intensifies, and up

to 600 hectares (one-third of village lands) are planted, will be a plantation-induced squeeze in potential areas for making upland swiddens. This will be followed in Ban Pak Veng by reduced fallow periods, increasingly restricted forest areas for the collection of timber and non-timber forest products, and vastly reduced animal populations for hunting. Completely new patterns of vulnerability, village poverty and serious food insecurity should be considered as likely. In effect, a radical, 'end-game' transformation of the cultural-ecological landscape and rural livelihoods of villages in Hinboun district is underway. Local managed forests will be replaced by rows of genetically-identical fast growing eucalypt or acacia trees. Exclusive reliance upon cloned, exotic tree species opens the ecosystem up to new risks of pests and tree diseases. The trees will grow for 5-8 years before being chipped and sent to China or Japan, and into Oji Paper's Bleached Hardwood Kraft Pulp (BHKP) commodity chain. The bulk of the profits will certainly leave Hinboun district with the woodchipped logs, and the Government of Laos will collect approximately US\$6 per hectare per year in land rents, significantly less than in relation to corporate concession land rents of between \$40-\$80 per hectare in neighbouring Vietnam or China.



Plate 90: The spread of eucalypt pulpwood plantations can indeed take on the appearance of an arboreal 'invasion' taking form across a landscape (cf. Lang, 2002).



Plate 91: Maturing Oji-LPFL eucalypt pulpwood plantations, Ban Dan Hi, Hinboun District

A return visit to Ban Pak Veng in February 2007 showed the LPFL was continuing with their clearing program. Village interviews suggested that up to 80 hectares has been marked out for clearing. Plate 92 shows an area of three hectares, which had been cleared by early February. While the company appears to have been taking more care to clear areas of young swidden fallows (closer to the definition of ‘degraded forests’)—the broader point remains that these locations are only temporarily ‘degraded’. In previous circumstances these fallows would have returned to mature forests. This form of development continues the process whereby locally- managed forests and livelihood systems are being inexorably squeezed, with few and uneven benefits to the villagers, and even fewer long term guarantees.



Plate 92: Ban Pak Veng landscape showing continued progression of land clearing by Oji-LPFL in February 2007.

VI. Cross-Border Migrations, Remittances, and Agricultural Intensification in Ban Pak Veng

“For working in Thailand, people first started to go to Thailand after the revolution, but that was to escape the country. But 2-3 years ago many people [from Ban Pak Veng] started to go to Thailand. Before then people went, but not too often. But this year, people go a lot. Because of their need. This is because they have nothing to employ them, no money. And also, before they had no broker. This is the first year that they went through the broker. And to Vientiane, people never went before, but after the daughter of Ms. Sisuphan went, and got married, then they all started to go.”

Village Headman, Ban Pak Veng
Interview, July 11, 2006

There is a close relationship between the ongoing industrial incursions in the socio-natural produced landscape of Hinboun District, displacement of access to natural resources for the local population, and intensified processes of degradation of those resources. This report has detailed how these forces are combining in unpredictable ways, upon and through the landscape and villages of Hinboun district. At the same time, this report has argued that this is not simply a process of an imposition of ‘global forces’ upon a local population. The families and individuals of Ban Pak Veng are very active agents within this process of manufacturing a new resource landscape in Hinboun district. They do this however, from a position of relatively little power, and the choices they are making are limited by the political space open in Laos to voice their concerns and positions. Certainly, they are not the agents who are capturing the majority of the benefits from this new resource landscape.

This final section of the report will focus on the responses of families in Ban Pak Veng, in terms of an intensifying shift of young people towards national and international migration in search of wage labour opportunities. It is very difficult to pin down precisely the series of events and decisions, which lead young people to leave the village. The quotations above by the village headman identify a number of issues, and combined pressures and opportunities, which are advancing such movements. Any study of cross-border migration in Laos must also acknowledge the history of the cross-Mekong movements, in the form of refugees fleeing the wartime bombing and violence in Laos between 1964-1975. Ban Pak Veng however escaped the major effects of the American bombing campaign, and the locales around Pak Veng village at that time were not seriously affected by the war (although some in the village were soldiers through that period). The headman, however, identified a number of processes that are intensifying this very recent shift to migration in search of labour opportunities. The first is the new requirement of villagers for cash income. This could be viewed in a number of ways—as an indication of the new desires for manufactured products in the village, such as motorbikes (of which there are 3-4), tractors, stereo equipment, and other consumer durables. This new interest and reliance upon cash income can also be taken however as an indication of the decline in the local resource base which could previously support

locally-derived sources for cash income (including the problems with producing rice, fishery declines, forest product and livestock diseases, which this report has documented).

But there are other forces at work as well. The newly constructed access road has resulted in an increase in ‘connectivity’, linking the village more easily to both visits by traders and officials, and external trips to the district centers and beyond. As is often the case, the very recent migration shifts in Ban Pak Veng started with one individual, whose success in negotiating through the process of settling and working in Vientiane provided the impetus, and opened new information networks, for others to follow. The emergence of a ‘broker’, a Lao businesswoman, who lives on a village along the Mekong, who organizes (illegal, undocumented) work placements for village residents in Thailand (for a significant fee), has also been a factor in the movements of young people into the Thai wage labour market.

The income-earning opportunities for working in Thailand are an attraction for young people. The purchase of new clothes, and stereo equipment, and the option to send money back to parents (for the latter, young women seem more rigorous at sending remittances than men) are all ‘pull’ sources in the migration process. But there are also significant concerns. From interviews, the rate of out migration from Ban Pak Veng is substantially higher than for their immediate village neighbours. For instance, informants from Ban Pak Theuk, the next village upstream suggest that only four or five teenagers are working outside the village. Similar to Pak Veng, Ban Pak Theuk has also been affected by downstream flooding, and has also been the focus for a more limited Oji-LPFL planting program (though only 80 hectares have been zoned for Oji in Pak Theuk, compared to 600 in Pak Veng)²⁹. However, Ban Pak Theuk has also been able to continue with the

²⁹ The headman from Ban Pak Theuk stated in an interview (August 4, 2006) that the village committee agreed to allocate to Oji only 20 hectares of land: “But Oji did not say anything because they already have a big area at Ban Dan Hi [the next village]. Oji arrived with the district officials, but the district also did not say anything.” When asked of his opinion of the Oji planting program occurring at Ban Dan Hi, one man from Ban Pak Theuk stated “I pity the big trees. So far, at Ban Dan Hi, I do not see anything improving. They only work day by day, for a little money. And now it is hard to find things in the forest” (Interview, August 5, 2006).

In turn, the headman (*nai ban*) of Ban Dan Hi (where BGA-Oji has cleared and planted some 415 hectares since 1998) stated in an interview: “I gave the land to the company because the district forestry staff, they said that the land is now for Oji because they have a concession with the government. When we said that the area was village land, the district said: ‘Do you have enough money to pay the tax on that land?’” And the answer was no. So we have to give the land to the company. And when I go to see the district staff, they say they do not know anything. The district official said, even the big trees, 1 to 2 foot in diameter—‘don’t worry.’ But I have a lot of pity to lose that forest. I cannot say anything... In my mind, I do not want the company to come. But the officials said ‘the government has benefits from this company, and the government gives permission to this company... In the plantation area Oji established last year, the company never asked Ban Dan Hi about clearing this area. Nobody informed us last year, they just started clearing. And then the provincial and district staff came and took away the valuable trees (Interview, May 29, 2006).

planting of rice through the last nine years, as they held onto their GoL irrigation pumps. More recently, as oil prices have made *naa saeng* (dry season irrigated rice) too expensive, the farmers of Ban Pak Theuk have experimented with an intermediate strategy for planting irrigated rice (termed '*naa tao*'), which gets underway as the wet season is ending, and which therefore partially saves on the fuel costs. Only six out of some thirty families in Ban Pak Theuk rely upon swidden rice fields. This suggests that the 'push' factors moving young people out of Ban Pak Theuk may be less intensive than in Pak Veng.

Interviews in Ban Pak Veng conducted in July 2006 and February 2007 show that there were up to 26 young women (and female children), and 9 young men working in Thailand or Vientiane. Out of a village of 48 households and some 260 residents, this is a major portion of the village young people. Almost all unmarried women in this cohort have in effect left their community for opportunities elsewhere. The ages, particularly for young women, are as low as 13 years, and the majority of these young people are working in Thailand without a passport or another form of official documentation.

Table 1: Out migrations for Wage Labour, Ban Pak Veng, February 2007.

Gender/ Age of Migrant	House hold #	Househol d Wealth Ranking	Location of Work	Notes
Female, 14	7	Very poor	Thailand	
Female, 22	9	Poor	Thailand	She is a recent widow, her husband died unexpectedly in 2006, leaving her with a young child. She left Ban Pak Veng for Thailand to earn money for her parents and her child. She could save 8,000 Thai baht in Thailand, in 6-7 months, after the broker fees.
Male, 18	12	Medium	Thailand	These 2 brothers work loading and unloading goods at the port of Tha Khek/Nakhon Phanom, or in the rubber plantations or tobacco fields in northeast Thailand. This time they say they want to stay working close to the Mekong border, so they will not be given a beating by the Thai police if they are caught working illegally.
Male, 17	12	Medium	Thailand	
Male, 18	15	Medium	Thailand	She sends money back to her family, which has supported the construction of a new house for her parents, (and possible for herself, if she returns to live in the village). (see Plate 94).
Female, 17	16	Poor	Thailand	
Female, 17	18	Poor	Thailand	Their father, does not know where his two daughters are working in Thailand, but they do call each month. They work as household maids. They have not yet sent back any money.
Female, 13	18	Poor	Thailand	Their father has been ill with stomach pains for 2 years and cannot work. The two daughters have
Female, 15	19	Poor	Thailand	

Female, 17	19	Poor	Thailand	left the village to find work in Thailand to support their family.
Female, 21	20	Poor	Vientiane	
Male, 18	21	Medium	Thailand	She could not save enough to send any money home, after broker fees and some purchases of food and clothing.
Female, 14	22	Medium	Thailand (Chachoen gsao province)	
Female, 14	25	Medium	Thailand	
Male, 18	28	Medium	Vientiane	
Male, 18	28	Medium	Thailand	He was recently arrested by Thai police and deported to Pakse. He spent 2 days in a Thai prison after his arrest.
Female, 14	29	Poor	Thailand	She was arrested before in Thailand, on the way back home. She does housework in Thailand. She can send money back to her family, for the purchase of a tractor (<i>rot tai naa</i>). In 3-4 months, she could send about 5-6,000 Thai baht.
Female, 21	29	Poor	Vientiane	
Female, 15	32	Poor	Thailand	
Female, 17	33	Medium	Thailand (Lat Phrao, Bangkok)	
Male, 18	33	Medium	Thailand	
Female, 22	35	Medium	Thailand	
Female, 15	35	Medium	Thailand	
Female, 13	35	Medium	Thailand	
Female, 14	36	Poor	Thailand	
Female, 15	38	Medium	Thailand	
Female, 17	40	Medium	Thailand	
Female, 20	42	Poor	Vientiane	The father and his family have 3 daughters working in Thailand. The eldest has run into trouble with her employer in Bangkok. She works as a housemaid, but is not getting paid, and has no money to return to Laos. In part through the remittances from his two other daughters, the father has invested 20,000 baht in rubber seedlings, to start a family smallholder para-rubber plantation, one of the first in the village. (See Plate 95).
Female, 15	42	Poor	Thailand	
Female, 20	43	Poor	Thailand	

Female, 14	43	Poor	Thailand	<p>She has worked for 1 year in Thailand, more recently 9 months in Vientiane, selling goods at a market. She could send home 10,000 baht from Thailand, and 2 million kip from Vientiane to her parents.</p> <p>She worked as a housemaid in Bangkok. She could send back 2,000 baht to her parents. On her way back she was arrested by the Thai police and spent 4 days in a prison. She was then released and sent to Mukdahan-Savannakhet. If she had money on her person, the Thai police would have confiscated it.</p>
Female, 17	45	Medium	Vientiane	
Female, 23	46	Medium	Thailand (Pathum Thani, near Bangkok)	
<p>26 young women and female children, ages 13-21, working outside the village.</p> <p>7 young men, ages 17-18 working outside the village.</p>		<p>1 from a very poor household</p> <p>15 from poor households</p> <p>17 medium from medium households</p>	<p>29 to Thailand</p> <p>4 to Vientiane</p>	<p>None of the above persons from Ban Pak Veng have official documentation or a passport for working in Thailand. In interviews, parents often did not know where their children were working or the type of work being performed.</p>

To secure official documentation for migrant work involves a long process. Most residents from Ban Pak Veng have neither the knowledge, nor the confidence, to secure these papers from various urban offices and departments. The steps involves first a signed letter from the village headman, followed by a trip to Hinboun district police and immigration station, and to the provincial immigration police in Tha Khek, and lastly to the Thai consulate in Vientiane. Villagers report that this documentation could cost up to 10,000 Thai baht (\$US 270), including a passport. Instead, young people from Ban Pak Veng pay the broker, at Ban Houay Kava, a fee of 3,000-8,000 baht (US\$80-\$215) to organise an illegal work placement and provide transportation to the work site in Thailand.



Plate 93: Young men departing on a modified *rot tai naa*, for work in Thailand. Ban Pak Veng.



Plate 94: A new house under construction, built in significant part through the cash remittances from female wage labour in Thailand. Ban Pak Veng.

The role of the remittances into smallholder agricultural investments in Ban Pak Veng is of particular interest. This process may represent the beginning of an autonomous trend towards the breakdown of the Ban Pak Veng upland swidden land use system, based on common property ownership. 2006 represented the first year of smallholder investment for Ban Pak Veng, with five of the more advanced farmers beginning experimentation with a new crop—para-rubber (*yang para*). These new rubber gardens thus represent *locally-driven* removals of land from the common property system, and the first farmers in the village to make this move will clearly be in an advantageous position over other Pak Veng residents who make the transition to intensive agriculture at a later date, or not

at all. While shouldering a degree of risk, the early pioneers in this process will have their selection of the best land, closest to the village for their rubber or fruit tree gardens.



Plate 95: This village family have used some of the remittances provided by three daughters in Thailand for the purchase of rubber seedlings, to begin a smallholder para-rubber plot. Ban Pak Veng.



Plate 96: Smallholder rubber investments are at the leading edge of an accelerating *locally-driven* process of market engagement, and of the privatizing of common property forest-land. Ban Pak Veng.

While this report has detailed the process whereby a transnational corporation, in alliance with state actors and policies, has acted to zone common lands for commercial plantation development, the same process is in fact occurring through the local engagements in cash crop markets by village residents themselves. At the same time, this process shows clearly that local people in Hinboun district are not rejecting commercial agriculture, tree

planting and other agricultural improvements, or indeed a transition out of swidden agriculture. Indeed, such smallholder engagements shows that there are local alternatives to large-scale, corporate concession style plantation development, and that local people are already making this transition, given access to sufficient capital and exposure to new ideas and technologies. The process is highly complex and uneven however, as these village stories highlight. Agricultural investments, including perennial rubber and fruit tree plantations, are happening at the same time as the local resource base is being rapidly transformed and degraded, and the available land base is being quickly 'squeezed' by a powerful outside actor. This agrarian transition is also occurring in a very uneven fashion, where the most advanced and asset-rich villagers will likely be in the first position to reap the rewards of commercialisation, while the poorest members of the village may be forced into a smaller corner of increasingly unproductive upland swiddens. At the same time, such agricultural investments can come at a cost, of separated families and increased vulnerabilities for young people negotiating through the migration process. The imaginative and original villager responses to, and engagements with, a difficult and fast-changing set of circumstances of landscape transformation and resource degradation, suggests that the people of Ban Pak Veng may continue to carve out new livelihood opportunities which present themselves. A less sanguine prognostication would question whether Ban Pak Veng will continue to be a viable community into the future. The future of Ban Pak Veng, if there is one, may be one which occurs in spite of, and not through the assistance of, large scale hydropower and industrial plantation development, while serious risks of impoverishment and significant degradation of the local forest-river ecosystem are introduced.

VII. Conclusion: Powering Impoverishment in Hinboun District

In their conclusion to a 2001 study of livelihoods along the Xe Bang Fai river basin, located just down National Highway 13 from Hinboun district, at the border between Laos' Savannakhet and Khammouane provinces, Shoemaker, Baird and Baird (2001: 59) write:

“River-based livelihoods involve a combination of many different linkages and relationships between people and their rivers. While rice fields, fisheries, livestock and vegetable gardens are the most visible components of local livelihoods and economies, many other resources are perhaps less visible but no less important. Many of these less visible components of local livelihoods can only be appreciated and understood in the light of the knowledge and experiences of local people living along, and with, their rivers. Together, aquatic and forest resources form the foundation of livelihood security for many of the people living in the Xe Bang Fai River Basin.”

This report confirms and expands upon this complex relationship between people and nature, and forests and rivers, in central Laos. The potential threats to this system, which the authors identified in 2001 for the Xe Bang Fai: hydropower, logging, industrial tree plantations, poorly designed irrigation systems, have all been enacted in Hinboun watershed as well. A key message of this report is that rivers and forests, and the villages who manage these resources, are a complex, inter-dependant, ecological-economy. Large-scale resource development in Laos, if it is to occur, needs to take much more rigorous account of these inter-dependencies and the complex nature of community resource management systems. Otherwise, power and progress, but combined with violent acts of impoverishment, may be the result.

This report also has identified the things that can and do go wrong when large-scale, industrial resource development interventions, backed up with inadequate research analysis and poorly designed, under-capitalised mitigation and compensation programs, are foisted upon vulnerable rural communities and complex ecosystems. The analysis documents the features of an agrarian transition underway in Hinboun District, but with close attention to the real political choices and specific relations of economic power. Individual, but cumulative acts of enclosure, displacement, and ecological degradation are key features to how this agrarian transition is proceeding in the Hinboun valley.

Ban Pak Veng shows a complex set of linkages between resource development, ecological degradation, village social-economy, and agrarian transition. These changes are not unrelated to the trend towards cross-border migration by the majority of the young people from Ban Pak Veng, into the illegal migrant labour market in Thailand. Remittances from this migration however are having complex implications for village life, as financial flows from village youth are in some cases being invested by their parents back into productive agricultural technologies, including smallholder rubber plantations. These multiple forces of ecological change, and trans-national enclosure of common property forests and rivers in Ban Pak Veng will almost certainly result in a

rapid breakdown of common property rights in the village. Ultimately, a steady decline in the natural resource base in this village is likely. In its place may be a new regime of individual household and corporate-based accumulation, cash cropping for those able to make a market transition, and migrant labour. The future will no doubt bring new opportunities, but also, as a result of continued resource developments in corporate hydropower and industrial plantations, new and intensified sources of impoverishment and vulnerability for the people of Ban Pak Veng.

In terms of Laos' land development policy strategy, Ducourtieux et al. (2005: 521) write:

“There is a real danger that a poorly defined or poorly applied land reform will lead to a large proportion of farmers—the poorest ones, who generally now have access to land—being evicted from the countryside, with the risk that none of the country's other economic sector will be able to absorb them.”

This report suggests that the scenario described by these authors is now well underway in the countryside of Laos. The rates of *coerced* outmigration of young people to Thailand from Ban Pak Veng, while certainly multi-faceted, should nevertheless be cause of concern, and reiterate to government and donor agencies that the connection between industrial resources development, enclosure and displacement, and cross-border rural migration is a reality in the Lao countryside.

In terms of land policy, this field report will not enter into an analysis of this complex matter here. There are numerous initiatives under way which are revisiting the Land and Forest Allocation procedures in Laos. GTZ (2005: 25) write:

“Securing access and use rights to communally held forest lands through the registration of communal land is... a direct contribution to the objectives of improved food security and poverty eradication.”

Such initiatives towards registering communal land tenure already under way in Laos should be supported by donor agencies, and expanded, and strengthened through the new National Land Management Agency. The recent decision by the Government of Laos to halt further allocation of land concessions to private entrepreneurs and plantation companies is also a welcome shift which could provide a measured breathing space for introducing pro-poor policy reforms. However, this report also shows how the activities of even international, “best practices” plantation firms, such as Oji Paper, can result in serious problems for local communities in Laos when communal tenure rights are undermined through zoning of ‘degraded’ forests.

In considering contemporary development problems emerging in Laos, this report has also been wary of idealisations of the past in rural Laos, or analyses that portray Lao villagers primarily as ‘development’s victims.’ Residents of Pak Veng are also active agents in the agrarian transition underway, although not under conditions which they themselves are in full control. In interviews, many villagers in Ban Pak Veng are broadly neutral towards the overall changes that are occurring in their village, although the

positive changes are not often viewed as stemming from THPC's or Oji's development programs. The overall situation may be a case of a villager forced into future trade-offs, which will eventually serve to undermine the ecological basis for villager livelihoods. In that sense, it is of interest that when the author asked the question of 'where do you see this village, or your family, in ten years?' there was not a single member of Ban Pak Veng who would venture a confident prediction.

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IX. Annexes:

Annex 1: Political map of Lao PDR. (Source: www.adb.org)



Annex 2: THPC / Ban Pak Veng Corn Planting Project January-April 2006

(Source: Author's access to village records).

(1USD: 10,800 Lao Kip in January 2006).

Farmer	Corn						Cost of Diesel (190 kip/m ²) (?)	Total Input Cost (kip)	30 per cent of inputs to Village Revolving fund	Dry Rice 50 kg/3500	Yield in kg (yield per rai)	Yield in Kip	Profit (profit per rai) (Lao kip)
	Proposed Area (m ²)	Planted Area (m ²)	Seed		Fertilizer 20.10.05								
			3kg/Rai	Cost 26,500 kip/kg	50 kg/Rai	Cost 2,703 kip/kg							
1.	1,600	3,200	6	159,000	100	270,300	608,000	1,037,300	311,190	175,000	1,139 (570)	968,150	481,960 (240,980)
2.	1,600	1,600	3	79,500	50	135,150	304,000	518,650	155,595	175,000	460 (460)	391,000	60,405 (60,405)
3.	1,600	1,600	3	79,500	50	135,150	304,000	518,650	155,595	175,000	726 (726)	617,100	286,505 (286,505)
4.	1,600	3,200	6	159,000	100	270,300	608,000	1,037,300	311,190	175,000	1,070 (535)	909,500	423,310 (211,655)
5.	1,600	3,200	3	79,500 *error	50	135,150	608,000	822,650	246,795	175,000	1,344 (672)	1,142,400	720,605 (360,302)
6.	1,600	2,400	5	119,250	75	202,725	456,000	777,975	233,393	175,000	1,006 (671)	855,100	446,708 (297,805)
7.	1,600	3,200	6	159,000	100	270,300	608,000	1,037,300	311,190	175,000	1,267 (633)	1,076,950	590,760 (295,380)
8.	1,600	1,600	3	79,500	50	135,150	304,000	518,650	155,595	175,000	511 (511)	434,350	103,755 (103,755)
9.	1,600	1,600	3	79,500	50	135,150	304,000	518,650	155,595	175,000	733 (733)	623,050	292,455 (292,455)
10.	1,600	1,600	3	79,500	50	135,150	304,000	518,650	155,595	175,000	686 (686)	583,100	252,505 (252,505)
11.	1,600	1,600	3	79,500	50	135,150	304,000	518,650	155,595	175,000	596 (596)	506,600	176,005 (176,005)
12.	1,600	1,600	3	79,500	50	135,150	304,000	518,650	155,595	175,000	716 (716)	608,600	278,005 (278,005)
13.	1,600	2,400	6	159,000	75	202,725	456,000	817,725	245,318	175,000	1,106 (553)	940,100	519,783 (346,542)
14.	1,600	1,600	3	79,500	50	135,150	304,000	518,650	155,595	175,000	443 (433)	376,550	45,955 (45,955)

													955)
Total	22,	30,	56	1,	900	2,432,	5,776,	9,679,	2,903,	2,	11,	10,03	4,678,
1	400	400		470,		700	000	450	835	450,	803	2,550	715
				750						000	(621)		(246,
													248)

Annex 3: Village Participation in THPC EMD Programs, Ban Pak Veng, 2006.

House No.	Wealth Ranking ³⁰ (in Association with Village Headman)	BPV Participation in THPC- Compensation and Mitigation Programs, July 2006				“Participation Index”
		THPC Corn Garden	THPC Vegetable Garden	THPC Toilet Facility	THPC Village Fund	
1.	Medium	-	-	-	-	0
2.	Poor	-	-	-	Y	1
3.	Very Poor	-	-	-	-	0
4.	Poor	-	Y	-	-	1
5.	Medium	-	-	-	-	0
6.	Poor	-	-	-	-	0
7.	Very Poor (female headed household)	-	-	-	-	0
8.	Poor	-	Y	-	-	1
9.	Poor	-	Y	-	-	1
10.	Poor	-	Y	-	-	1
11.	Poor	-	-	-	-	0
12.	Medium (current <i>nai ban</i>)	Y	Y	Y	Y	4
13.	Poor	-	-	-	Y	1
14.	Poor	-	-	Y	-	1
15.	Medium	-	Y	Y	-	2
16.	Poor	Y	Y	Y	Y	4
17.	Medium	-	Y	Y	-	2
18.	Poor	-	-	-	Y	1
19.	Poor (male household head ill for 2 years)	-	-	-	-	0
20.	Poor	-	-	-	-	0

³⁰ This wealth ranking exercise conducted with the village headman should be taken as very broadly indicative only, and was based on the *nai ban*'s lived perception of the families in his village. The ranking was explained to involve factors such as the size and quality of the family house, ability to purchase consumer goods and commodities, ability to produce sufficient food versus a requirement of the household to regularly borrow rice or cash from relatives or lenders, and so forth. However, families that might be currently ranked as 'poor' can also be, for example, new families with young children, who are still supporting older parents in law. It is the indicative but positive correlation, between a generalized perception of wealth and status in the village, and participation in THPC's programs, that I wish to point out here.

21.	Medium (former <i>nai ban</i>)	Y	Y	-	-	2
22.	Medium	Y	-	Y	-	1
23.	Poor	-	-	-	Y	1
24.	Poor	-	-	-	Y	1
25.	Medium	-	-	-	-	0
26.	Poor	-	Y	-	-	1
27.	Medium	-	Y	-	-	1
28.	Medium	-	Y	-	-	1
29.	Poor	-	Y	Y	-	2
30.	Poor	Y	-	-	-	1
31.	Poor	-	-	-	Y	1
32.	Poor	-	Y	-	Y	2
33.	Medium	-	-	Y	-	1
34.	Medium	-	Y	-	-	1
35.	Medium	-	Y	Y	-	2
36.	Poor	Y	Y	-	Y	3
37.	Poor	Y	Y	Y	Y	4
38.	Medium	Y	Y	Y	Y	4
39.	Very Poor	-	-	-	-	0
40.	Medium	Y	Y	Y	-	3
41.	Medium	Y	Y	Y	Y	4
42.	Poor	Y	Y	Y	Y	4
43.	Poor	Y	Y	-	-	2
44.	Medium	-	-	Y	-	1
45.	Medium (former <i>nai ban</i>)	-	-	Y	Y	2
46.	Medium	Y	Y	Y	Y	4
47.	Poor	Y	Y	Y		3
48.	Poor	-	-	-	Y	1
3 very poor families; 27 poor families; 18 medium families		14 families in irrigated corn project	25 families in irrigated vegetable garden project	18 families in toilet facility project	17 families in village fund project	

Annex 4: Letter sent by the author to THPC, October 2006, regarding the July-August 2006 livestock disease outbreak in Ban Pak Veng.

To: Robert Allen
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Email: gmthpc@thpclaos.com

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Ban Nahin, Khammouane Province, Lao PDR
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Cc: Aviva Imhof
International Rivers Network
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From Keith D. Barney
Department of Geography, York University
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kbarney@yorku.ca

October 22, 2006
Toronto, Canada

Greetings Mr. Allen and Mr. Bounma:

You may recall that some months ago we met at the Theun-Hinboun Power Co. office in Vientiane. I am a Canadian doctoral student researching commercial forestry, resource tenure and rural change in Laos. During my fieldwork in Laos from 2004-2006, I was based with the Faculty of Forestry at the National University of Laos.

As you may also recall, one of my primary field sites was a village located along the lower Hinboun river—Ban Pak Veng—and as such my village case study also relates to the Theun Hinboun Power Company project.

On August 5th 2006, as I was departing from my second last village field trip from Pak Veng, I alerted Mr. Bounma at the Environmental Management Division by mobile phone that there was a livestock epidemic underway in Ban Pak Veng.

I was then pleased to hear on my last trip to Hinboun District in late August, that Mr. Bounma had taken up my suggestion to direct THPC EMD field staff to the Ban Pak Veng, to encourage and facilitate the villagers in vaccinating their livestock. While THPC had, in the months prior to this disease outbreak, previously provided a medical kit and training for supporting vaccinations, the majority of the villagers in fact did not take the opportunity vaccinate their animals. This relates largely to traditional belief systems,

whereby illness, for both humans and animals, is viewed to be governed by the *phi* or village guardian spirits, as opposed to causes such as bacterial or viral infection.

I contacted Mr. Bounma in the morning of August 5th, and the THPC staff arrived that same evening. It is hard of course to pinpoint the actual effect of the booster antibiotics and vaccinations on slowing the course of the epidemic; I understand another 6 animals still died after receiving inoculations. But I am indeed appreciative that THPC actively followed up on this issue, and directed EMD field staff to the village. I understand the EMD staff stayed for nearly two weeks, and were able to vaccinate almost all the larger animals in the village. This action by the THPC EMD likely helped halt a further spread of the disease, and may have spared the village from experiencing a complete loss of all their larger livestock. It goes without saying that it is a heavy loss indeed for villagers to lose buffalos and cows to disease. At approximately US\$400 per head for an adult buffalo, and US\$150 for an adult cow, they truly represent “savings on the hoof” for many villagers in rural Laos.

The total losses for the village between July 7th to August 22nd 2006 were recorded at 15 adult buffalos and 3 adult cows. The peak mortality period however occurred between July 28th to August 8th, during which 13 adult buffalos and 2 adult cows expired. This peak mortality period coincided with my observations of the presence of standing floodwater in the village. At the above valuation rates, the epidemic resulted in a total economic loss to Ban Pak Veng in the range of US\$6,500. For the villagers, this was a crushing blow, representing years of accumulated savings.

A colleague who works in animal diagnostics in Vientiane suggested that a probable cause of the outbreak was an infection called *haemorrhagic septicemia* (HS). HS is a livestock disease that is endemic in Laos, a bacterial infection of *Pasteurella multocida*. Among its notable features include: a pronounced seasonality (wet and moist conditions prolong the survival of the bacteria); buffalos are more affected than cattle; and decaying carcasses are an important source of infection.

“Infection occurs by inhalation or ingestion of P. multocida bacteria. Higher incidence of HS is associated with moist, humid conditions, high buffalo population density, and extensive free grazing system of management, where large herds graze freely in common pastures and are paddocked together at night. In situations where occasional sporadic outbreaks occur in some regions within endemic countries, mortality may be very high unlike endemic areas where regular, seasonal outbreaks occur, where losses in each outbreak are low and confined to young animals...losses in endemic areas may be of an insidious nature which may escape the notice of the animal health authorities but may be of considerable economic significance (De Alwis, 1981). Once clinical signs appear, case fatality is nearly 100%.”¹

¹ Benkirane, A. and M. De Alwis (2002). *Haemorrhagic septicemia, its significance, prevention and control in Asia. Vet. Med. – Czech, 47, 2002 (8): 234–240. pp. 236.*

http://www.cazv.cz/2003/2002/vet8_02/Benkirane.pdf

See also: http://www.fao.org/AG/AGAINFO/programmes/en/haemosept/haemo_about.html

The onset was indeed remarkable. It would start with foaming around the mouth of the animal, and within 24 hours a fully healthy adult buffalo would be dead. Villagers noted that the animals' body temperature increased rapidly with onset, to the extent that buffalo would run into nearby water sources to cool down. In one instance, an adult buffalo did so and subsequently expired in a stream located nearby the village. The smell of a decomposing buffalo wafting through the village added to the general unpleasantness and discomfort of the flooding situation, and it certainly did not help in terms of the water quality of the standing water in the village at the time. The large decaying buffalo carcass in the nearby stream may also have acted as a source of onward infections in Ban Pak Veng.

Benkirane and De Alwis (2002) also write that:

"The onset of the monsoon in Asian countries also set into motion other activities such as rice cultivation which bring about movements of animals, work stress in work animals, etc. all of which favour the precipitation of outbreaks (De Alwis, 1990a)."

It is notable that in Ban Pak Veng, water buffalo are not used as draught animals. This is because the villagers no longer cultivate lowland wet-rice paddy. The shift from wet rice paddy cultivation to upland swidden rice cultivation is a result of the downstream flooding effects of the THPC project on the lower Hinboun River. The available wet-rice paddy land in Ban Pak Veng is now unpredictably flooded in the wet season, making cultivation a highly risky endeavor, and often impossible. The humid, moist conditions which present a favourable environment for outbreaks of this disease in village livestock was more likely associated with the presence of standing water in the village itself, rather than via the a more usual mode, of the employment of livestock as draught animals in wet rice paddy preparation.

It is also notable that in Ban Pak Veng, the livestock herd can be separated into two main groups, depending on their owner's practices. That is, the animals that return to the village compound each evening, versus the animals that remain grazing in the forest, even at night. Villagers noted that the animals trained to return to the village compound each night (or whose owners went and fetched them) were more likely to become infected and die, than the animals who tended to stay on higher ground in the forest. This supports the notion that it was the presence of standing flood water in the village itself which was an important factor in the disease outbreak.

It would seem plausible that the infectious disease that raced through Ban Pak Veng in early August was causally associated with the presence of dirty standing water in the village. It is also the case that an increase in the extent and duration of wet season flooding events are among the downstream effects of the THPC's hydropower operations, which diverts 110 cubic meters of water per second from the Nam Theun into the Nam

Hinboun via the Nam Hai. As you are aware, this diversion of water increases volume flows in the lower Nam Hinboun considerably.²

When one connects these observations, it is a logically consistent hypothesis that the operations of the Theun-Hinboun Power Company may represent a contributing factor in causing, or exacerbating the extent of, livestock disease and mortality losses via infections such as *haemorrhagic septicemia* in villages located along the lower Hinboun River, especially when such an outbreak coincides with a wet season flooding event.

Clearly, it is not possible to provide a statistically valid scientific correlation between THPC's hydropower operations, post 1998 flooding effects on the lower Hinboun river, and this specific incident of livestock disease in Ban Pak Veng in August 2006. Without established baseline data, the specific effects of THPC's operations upon a range of ecological variables are not possible to isolate. However, if it is accepted as logically consistent that THPC's operations may play a role in causing or exacerbating the incidence of livestock disease via the mechanism of an increased *extent* and/or *duration* of downstream flooding events, then: A) THPC has a responsibility to investigate further the causes of such significant disease outbreaks and B) in the absence of clear data, THPC also holds an obligation to provide financial compensation to downstream villages experiencing significant livestock losses, especially when the incidence of disease and mortality coincides with wet season flooding events. That is, the weight of responsibility for addressing the economic losses that impoverished Lao villagers in the project area experience, which are associated with ecosystem changes resulting in part from THPC's operations, lies with the Company.

It should be noted that this past August in Ban Pak Veng, the Hinboun River did not significantly overflow its banks, although it came very close. Rather, the very dirty standing water under many of the houses in Pak Veng village was the result of nearby feeder streams backing up into the village. The resulting standing water quickly became a health issue: cows and buffalos were urinating and defecating into the water, children were playing in it, and everyone was forced to wade through it. Many villagers, especially children, developed resulting foot rashes. For adults, the foot rashes could keep them away from working in their swidden agricultural fields for some days. Village flooding events can still therefore occur even though the Hinboun has not technically overflowed its banks in a specific location.

Observers might point out that THPC had attempted to establish a livestock vaccination program in the village prior to this outbreak of livestock disease, yet most of the villagers chose not to take advantage of this option. In response, I would argue that if the spiritual beliefs of rural villagers in Laos may at times work against the timely, 'rational'

² Although the lower Hinboun floodplain is prone to seasonal flooding events, villagers stated that historically flooding events usually did not result in complete crop failure. Since 2002 however, villagers in Ban Pak Veng have abandoned any further efforts to cultivate productive wet rice paddy in locations along the Hinboun. Villagers in Ban Pak Veng are unanimous in their view that after the Theun-Hinboun Power project came on-line in 1998, the *extent* and *duration* of wet season flooding events increased considerably. (Five Pak Veng households maintain small plots of wet rice paddy in low-lying areas located a distance away from the main river).

implementation of health and livelihood programs, this is simply an issue which calls for more imagination, innovation and resources on the part of THPC to address, in a responsible manner. After all, it is THPC that has been the primary source of the destabilizing ecosystem changes along the Hinboun, and the associated hardships for villagers. Secondly, the reluctance of Pak Veng villagers to vaccinate their herd is exactly the type of initial response that one would *expect* in many areas of rural Laos, where religious tradition represents the prism through which villagers interpret and explain the world, and where a belief in *phi* spirits forms part of the cosmological foundation for village life.

The power of religious spiritual beliefs should not be underestimated in these situations; and the role of the *phi* spirits certainly outweighs the explanatory power of scientific vaccinations for animal health issues in the minds of many villagers. For instance, in a communal meeting on July 31st, as the epidemic was developing, village elders agreed that if any livestock owner refused to join the proposed spirit ceremony, and that person's cow or buffalo subsequently become ill with the disease, either the owner would be required to keep the animal away from the village housing area, or the offending owner would be requested to leave the village. To my knowledge, no such collective sanction was proposed with respect to a refusal or failure to inject one's animals with THPC's scientific vaccine.

One could even imagine various innovations which could integrate village spiritual belief systems with a scientific vaccination program. For instance, THPC staff could time an advance vaccination program with the periods of the agricultural calendar when villagers in Ban Pak Veng make alcohol and chicken offerings to the village guardian spirits. The goal would not be to dismiss customary beliefs as 'irrational', but rather to seek options to integrate a scientific vaccination program with religious belief and village culture.

THPC may also want to consider looking further into sending rapid mobile health units into villages at critical flooding event weeks. Alternatively, THPC could consider mechanisms whereby if villagers are experiencing livestock disease outbreaks, there is an efficient communication mechanism in place for the village headman to quickly alert the THPC EMD for required assistance. I also refer you to the recommendations listed in the Benkirane and De Alwis publication, for improving your prevention and vaccination program and to minimize the economic losses from this type of disease in your project area.

Again, while village religious beliefs may not exactly facilitate a timely vaccination program, the cost of dismissing villager's perspectives and beliefs may lead to a general failure of the THPC livestock health program in many villages. On the positive side, more flexibility by THPC, combined with a respectful and detailed understanding of the local situation, attitudes and belief systems of Lao villagers, may identify innovative and exciting ways forward.

I will be writing up a fuller field report on my research Ban Pak Veng shortly, which I will be sure to direct your way.

I would look forward to hearing back from you on these matters.

Sincerely,

Keith D. Barney

Doctoral Candidate, Department of Geography
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M3J 1P3
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Email: kbarney@yorku.ca

Annex 5: Response from Theun-Hinboun Power Company Environmental Management Division

Mon, 6 Nov 2006

emd@thpclaos.com

Re: Respond to Hinboun District, Letter to THPC

Dear Mr. Keith D. Barney,

I would like to provide you with some additional information and clarifications about the mortality of livestock at B. Pakveng during early rainy season this year.

You claim that Hemorrhagic Septicemia (HS) is caused primarily by flooding of water discharged from the power station. In reality, the mortality of livestock at that time was discovered not only at Pakveng. Before that the outbreak of this disease there it occurred in Khamkeut district, leading to a close down all butcher shops in KM 20 for a while, due to the death of 250 buffaloes, 25 cows, 2,450 pigs, 85 goats and 20,940 poultrys. Mortality of livestock was not only in Khamkeut district, other places such as upper Hinboun River, in Phontieu numerous of livestock mortality was also found. The total mortality of buffaloes and cows all over Hinboun district were 274 and 366 respectively. There were also reported cases on the Nakai Plateau.

The first buffalo that died at Pakveng belonged to Mr. Seng, he took it from his parents at B. Nongdong. On the way he was taking this buffalo from Nongdong to Pakveng, it died and he separated buffalo in to pieces and took the pieces of meat to village for sell and offer to his cousins. He told villagers that his buffalo died due to the rope tighten it neck. Four days after that, there was a cow of Mr. Pain died, and he told villagers that it was trapped in the deep dug well. So almost all people in the village ate the meat. After that Livestock in the village started to die on by one. All together there were 13 buffaloes, 4 cows died and 11 buffaloes were treated.

EMD has taken Livestock activity as an important factor to develop in impacted project villages. Our strategies of Livestock development are conducted as follow.

Management Improving.

- Area for grazing allocation.
- Basic knowledge training on Livestock
- Establish two veterinary surgeons in each village and equipped with necessary materials.

Breeding Improvement.

Livestock health care.

- Providing materials for construction standard pen
- Collecting animal manure for sell to EMD.
- Vaccination.
- To worm.
- Treatment of sick animals.

Develop animal feed.

- Utilize available feed in the local area (rice straw processing, grass nursery...).
- Produce mineral block.

The mortality of Livestock caused by HS is considered as a regular event in South-East-Asia countries, particularly live-stock that is not received vaccination.

Every year we request for cooperation from head of the village, veterinarian in the village and owner of livestock to have vaccination of livestock. We schedule to vaccinate cows and buffaloes twice a year, April and December, because outbreak of the HS is often occurred at the beginning of rainy season.

Vaccination of livestock during the past three years we faced a lot of difficulties due to lack of cooperation and careless of livestock owner and village authority. Majority of livestock in the village are released without control, no monitoring of livestock health, even though EMD is always ready to provide lump sum budget of 100,000 kip to each household for purchasing necessary materials to build their own livestock pen.

During 2002-04, EMD in cooperation with district personnel had organized vaccination in each village base on vaccination calendar and we found that only minority of people took their livestock for injection of vaccine. Then we reconsider again maybe charging 3000 kip per each cattle irritates villagers to have their livestock vaccinated, even though they realize that 3000 kip could replace livestock that worth 4,000,000 kip.

Then 2005-2006 we changed to new strategy with the objective of how to convince villagers to take attention on Livestock vaccination role. So we offer the vaccination with free of charge. We cooperate with villagers to setup rules and regulations on livestock development in the village, referring to the regulation of Ministry of Agriculture and Forestry issued in 1996. This regulation is mentioning to Management of livestock. One of the most importance of village regulation is mentioned to vaccination calendar and how to struggle with mortality of Livestock both clear and unclear mortal reason:

- Bury, incinerate.
- Cover with lime powder.
- Forbidden to eat meat.
- Livestock mobilization is forbidden.
- Emergency Report to authorized personnel, etc.

We also announced that vaccination of Livestock is free of charge and veterinary surgeons can obtain benefit from each vaccination. But we still did not have proper cooperation from villagers especially Ban Pakveng, none of cows and buffaloes were vaccinated.

On the other hand, the villages as B. Done and Vangdao the vaccination reached 70-80%, so there was no mortality of Livestock during that time.

What I would like to explain is the vaccination of livestock can not be conducted when disease outbreak is being occurred. Only anti-biotic can be used for treatment. We have to schedule 4-5 months in advance, because vaccine is affected within 5-6 months only.

I would finally like to summarize that:

People participation in each development activity that suit to the time and situation are a big challenge for us. Flooding that caused by Hydropower station is not the most significant issue, because 110 m³/s of discharged water is considered as small volume if compare with thousand hectares of flooded area that could receive 5,000-6,000 m³/s of natural flooding along stretches of the Hinboun.

Flooding of Nam Hinboun is not different from other rivers. The flood occurs only during the rainy season, once again it is another challenge if communities or we all do not help each other to protect environment. If the forest have not been well reserved especially along Nam Hinboun and Nam Hai now the dense forest has been destroyed by different activities inside and outside people, nowadays small trees along Nam Hai and Hinboun river side are being cut for tobacco planting.

Regarding spiritual beliefs, this is a complex issue and is related to leadership and levels of technology and knowledge at the village level. Other villages of the same ethnic group in the region allow vaccination. It is a challenge to convince villages to accept changes in practices but EMD is attempting to introduce methods and materials in a culturally sensitive manner. Using such an approach means reaching consensus and compromises through dialogue, and some groups will take longer to adapt and only do so after they see benefits themselves in neighboring villages. Thus some losses will be expected but in the long run, there will be acceptance gradually and without the use of coercion.

Regard, Bounma Molakhasouk

Annex 6: Species of Hinboun fish caught regularly in Ban Pak Veng, as recalled by an 11 year old boy (Plate 29).

No.	Species Name	Lao spelling	How do they catch it
1	Ba Seuam		Hook, net, hae
2	Ba Sanyang		“
3	Ba Kot		“
4	Ba Sout		“
5	Ba Laat		“
6	Ba Kao		Hook/net/hae/chan
7	Ba Koun (Mr. Kongtaa caught a 33 kg ba koun last week before we arrived)		Big chan
8	Ba Nang		Hook, het, hae
9	Ba Kor		“
10	Ba Pak		“
11	Ba Dook		“
12	Ba Kii Feuy		Net/hae
13	Ba Pia		Hook/net/hae/ big chan
14	Ba Bian Fai		Hook/net/hae
15	Ba Kaa		“
16	Ba Kae		“
17	Ba Nai		Hook/net/hae/chan
18	Ba Pok		Hook/net/hae
19	Ba Choiw		Net/hae
20	Ba Ket Tii		“
21	Ba Oup		Hook/net/hae
22	Ba Keng		“
23	Ba Sakaang		“
24	Ba Yorn		“
25	Ba Kang		“
26	Ba Kadeut		Net/hae
27	Ba Kadaeng		“
28	Ba Kachoan		Hook/net/hae
29	Ba Kachai		“
30	Ba Pao		“
31	Ba Hark Kuay		Hae/net/kadong
32	Ba Chiew Thong		Hook/hae/net/kadong
33	Ba Kin Nong		Hae/net
34	Ba Yang Borng		Hook/net/hae
35	Ba Keo Kai		“
36	Ba Nou		“
37	Ba Kaeng		“
38	Ba Koum		Net/hae/kadong
39	Ba Koun		Hook/net/hae
40	Ba Kai		Hae/hook/chan/net
41	Ba Dau		Hook/net/hae
42	Ba Kii Koh		Net/hook/hae
43	Ba Kuarnng		“

44	Ba Hang Fa			“
45	Ba Yarnng			Hook
46	Ba Houmard			Hook/chan
47	Ba Chok			Hook/net/hae/chan
48	Ba Men			Hae/net
49	Ba Nok Kao			Net/hae
50	Ba Bou			Toum/seu
51	Ba Od O			Hook/net/hae/kadong
52	Ba Nang Naed			Hook/net/hae
53	Ba Eun			Hook/net
54	Ba Ie Tou			Net/chan
55	Ba Dot			Hook/net/hae
56	Ba Keung			Hook/net/hae
57	Ba Chard			Hook/net/hae/toum
58	Ba Kabok			Hae/net/hook
59	Ba Karb Kong			Hae/net/kadong
60	Ba Seu			Net/hook/hae
61	Ba Pae			Net/hae/kadong
Total: 61 species				

Annex 7: Areas Surveyed for Oji-LPFL in Hinboun and Pakkading Districts

Hinboun District, Khammouane Province Village:	Area (hectares)	Village	Area (hectares)
<i>Ban Houay Kasa</i>	360	Ban Houay Kamin Ngai	65
<i>Ban Phon Kor</i>	450	Ban Phone Mouang	124
<i>Ban Phong Tai</i>	581	Ban Pak Pa Kan	388
<i>Ban Phong Kang</i>	586	Ban Vang Houa Pa	685
<i>Ban Phong Neua</i>	1,340	Ban Pha Veng	128
<i>Ban Hahtxaykham</i>	92	Ban Na Heuang	181
<i>Ban Hin Laht</i>	110	Ban Phone Sa Vang	179
<i>Ban Meng</i>	663	Ban Lao Louang	118
<i>Ban Na Than</i>	337	Ban Phone Thaong	141
<i>Ban Phone Die</i>	986	Ban Song Hong	67 (Nursery & Trial Area)
<i>Ban Phone Xay</i>	144	Pakkading District, Borikhamxai Province	
<i>Ban Pha Chua</i>	438	Ban Pak Xun	1,623
<i>Ban Vang Mon</i>	678	Ban Phon Sy	363
<i>Ban Xang</i>	233	Ban Phon Ngam	836
<i>Ban Song Kom</i>	177	Ban Phon Thong	212
<i>Ban Pak Theuk</i>	359	Ban Phon Hai	1,266
<i>Ban Pak Veng</i>	610	Ban Na In	125
<i>Ban Haht Ikom</i>	21	Ban Nam Thone	9 (Nursery)
Ban Houay Kamin	43	Total Area	14,678 hectares

Noi

Annex 8: BGA-Oji LPFL Tree Planting in Hinboun district, 1996-2006.³¹

Village No.	Village Name	Tree Planted	Locations	Hectares	Years Planted
1.	Ban Lao Kha	Eucalyptus	1	239.935	2000,02
		Acacia	1	59.363	1996,98,01
2.	Ban Phone Sa-at	Eucalyptus	1	43.299	2006
		Acacia	1	2.596	2005
		Mai Basom	2	37.923	2002
		Mai Kin Naak	1	2.879	2002
		Eucalyptus	1	573.264	2001,02,03,04
3.	Ban Houay Heua	Acacia	4	5,792	1997
		Eucalyptus	1	65.126	1997,00
4.	Ban Dan Hi	Acacia	1	5.933	1998
		Eucalyptus	1	159.764	1998,00,01,02
5.	Ban Lao Louang	Eucalyptus	1	249.261	2006
		Acacia	3	52.672	1998
		Eucalyptus	1	312.532	1997,01,05
6.	Ban Wie Sakub (?)	Eucalyptus	1	263.566	2006
		Eucalyptus	1	76.449	2006
7.	Ban Tha Som Hong	Eucalyptus	1	56.643	2006
8.	Ban Hin Boun Neua	Eucalyptus	1	320.512	2006
9.	Ban Hin Boun Neua	Eucalyptus	1	31.538	2006
10.	Ban Phone Mouang	Eucalyptus	1	10.6	2006
11.	Ban Pak Pakan	Eucalyptus	1	45.5	2006
12.	Ban Wang Hua Baa (?)	Eucalyptus	1	23.9	2006
13.	Ban Nong Jan Laa	Eucalyptus	1	50.5	2006
14.	Ban Nong Houay	Eucalyptus	1	31.00	2006
15.	Ban Paa Veng	Eucalyptus	1	63.731	2006
16.	Ban Na Heuang	Eucalyptus	1	112.895	2006
17.	Ban Houay Kao Min Noi	Eucalyptus	1	27.520	2006
18.	Ban Song Hong	Eucalyptus	1	3.3	2006
19.	Ban Phone Sa Vang	Eucalyptus	1	63.6	2006
20.	Ban Nong Boua Noi	Eucalyptus	1	103.698	2006
21.	Ban Pak Theuk	Eucalyptus	1	5.555	2006
22.	Ban Pak Veng	Eucalyptus	1	12.00	2006 ³²
23.	Ban Houay Bone	Eucalyptus	1	208.828	2006
24.	Ban Naak Veng	Eucalyptus	1	36.228	2006
25.	Ban Kava Tai	Eucalyptus	1	78.158	2006

³¹ Source: Unpublished Document, Khammouane Provincial Agriculture and Forestry Office. Dated August 22, 2006. Author Translation.

³² Note: this table includes area planted in 2005 within Ban Pak Veng boundaries into the figures for Ban Lao Louang. See Plate 38 below for map detail.

25.	Ban Kava Neua	Eucalyptus	1	5.919	2006
26.	Ban Houay Kiaw	Eucalyptus	1	43.822	2006
27.	Ban Houat Tiw	Eucalyptus	1	104.548	2006
28.	Ban Pong Tai	Eucalyptus	1	29.402	2006
29.	Ban Pong Kang	Eucalyptus	1	38.311	2006
30.	Ban Na Than	Eucalyptus	1	83.00	2006
31.	Ban Phone Dii	Eucalyptus	1	59.676	2006
32.	Ban Ka Taeb	Eucalyptus	1	147.679	2006
			49	3,949.062	
				hectares	

Annex 9: Translation of the Land Use Agreement between BGA Plantation Forestry and Ban Pak Veng (Translation by Phornmanee Xayasouk)

LAO PDR

Hinboun District Ban Pak Veng

Implementation Document Ban Pak Veng, 12/2/2005

- I. Objective
 - a. To make the people understand well the Forest Land Law, and contract allowing to plant trees of BGA
 - b. Together implementation of Forest Law and Forest Land Law to be concrete [make safe]

Staff Workers Include:

1. District Coordinator, Team Head
2. District Coordinator
3. BGA Management Representative
4. Representative from the Social and Environmental Management Team of BGA Co.
5. Representative from BGA Company

Participants: from Ban Pak Veng, including

1. Village Committee
2. Village Authority and villagers

II. Implementation

In the morning of 12/2/2005, 8:30am, the staff agreed to open the meeting with villagers from Ban Pak Veng. Ban Pak Veng is one of the villages in Hinboun District (Khammouane Province). Consists of 49 households, 51 families, with a total population of 27, including 127 women and 147 men. Main labourer is 122, young labour is 25. Main occupation: 1. planting rice 2. producing vegetables 3. raising animals.

The total land area of the village is 1,832.98 hectares, including:

- Agricultural Land 85.34 hectares
- Village Land [housing land] 25.35 hectares
- Preserve Land [conservation forest] 171.00 hectares
- Paa Phun Phu [Regeneration Forest] 292.51 hectares
- Use Land 174.25 hectares
- Spirit Land 100 hectares
- Cemetery Land 100 hectares
- Total= 948.45 hectares

This conference vote coordinator of district and company staff has passed main document of Forest Law, Land Law and contract allowing planting of Lao BGA Co.

After passing this document, people have agreed and understand the explanation of the document. From the explanation and discuss with each other, the staff know about the number of families that have land, and who are using land in the land given to the company.

III. Opinion of Pak Veng Villagers

After listening to the explanation and agree/see that their village understands clearly to the law. And company went to ask for the land from the government. People see that and agree together with forest land and the land that the team come to explain. The people understand about the benefits to the national economy and people who get permission. The government and people will have benefits together.

IV. Opinion of the Team

When talking about policy, law and contract of permission it is main issue in area of permission. To implementation to be concrete in developed form, the finding of the work (job). The company has many jobs- that can include villagers to support their livelihoods. Everything that happens in the work of planting forest also focus on people labour in that area. Such as: cutting, planting, use fertilizer, and looking after, cutting down, etc. Anything that is above, also is the benefit of both. In other words, the staff representative of BGA see that coming work with villagers not only pass document but next step, also have to survey about real land of the villagers. If it includes permission area, the company think anything that people used to find in that area is to have survey and plan a map clearly.

They raise this problem in order to protect Forest Law and Land Law.

V. Total of Land

Total of land that the government give permission to plant tree of total company: 610 hectares. In that area there is also communal land 13.37 hectares. So the total is 596.63 hectares. Separate/divide the land that have to clear 596.63 hectares.

The detail of the families that have land in the permission land:

Farmer	Ha.	Locations	Land Use	History
1	0.82	1	Paddy	Occupying and cultivate without land tax document
2.	0.52	1	One part is paddy already, and other is forest around the stream	Same
3.	1.89	1	Use to make paddy 2 years ago, other spot still small island	Same
4.	0.29	1	Planning for paddy	Same
5.	1.78	1	Planning for paddy	Same
6.	0.73	1	Reserve paddy and will make paddy	Same
7.	5.13	1	Paddy already and some place not cultivate yet	Same
8.	1.42	1	Still forest	No land tax document
9.	0.35	1	Paddy around canal and 1 spot is not cultivated	Same
10.	0.44	1	Still forest	Same
	Total: 13.37 hectares	10 areas		

Remark: on this area have a map

VI. Planning of Company

The land that plant the tree will conclude after clear land and planting in the period 7/2005.

Signed,

Ban Pak Veng Village Headman

Annex 10: Ban Pak Veng: Intercropped “Axe-Cleared” Areas and Swidden Harvests and Rice Security, 2006

Household	Mapped Area (with Oji GPS) (ha.)	Self-estimates of Area (ha.)	Self-Estimated Rice Harvest (kg) (not milled)	Yield per (GPS'd) Hectare (kg/ha.)	Number of Household Members (Adults, Children under 12)	Self-Estimated Rice Supply (months)	Household Head Comments on Alternate Sources of Cash Income
2	1.100	1.352 (8.45 rai)	750	682	(4, 4)	4	<i>Employment in local rubber plantations</i>
47* (also planted tractor-cleared rice)	1.433	1.56 (9.75 rai)	825	575.7	(3, 5)	4*	
32* (also has wet rice paddy)	1.012	1.56 (9.75 rai)	1,250	1,235	(4, 1)	6*	
33	1.280	1.56 (9.75 rai)	1,250	976.6	(4, 0)	9	<i>A son and daughter are working in Bangkok. If he is running short he phones them to send money.</i>
29	0.969	1.352 (8.45 rai)	1,000	1,031.9	(5, 3)	4	<i>Local employment, sawing wood, wife and daughter also work with Oji. Borrows rice from other villagers.</i>
4	1.251	1.00 (6.25 rai)	690	551.6	(2, 3)	4	<i>Local employment, sawing wood, borrow rice from other villagers</i>
9	1.152	1.00 (6.25 rai)	1,140	989.6	(3, 2)	9	<i>Local employment, sawing wood</i>
21	1.324	1.352 (8.45 rai)	750	566.5			
26	1.209	0.96 (6 rai)	650	537.6	(2, 3)	5	
25	2.084	2.08 (13 rai)	2,000	959.7	(2, 4)	12	
5	1.151	1.56 (9.75 rai)	1,500	1,303.2	(3, 2)	7	<i>Local employment,</i>

8	1.151	rai) 1.56 (9.75 rai)	900	641.0	(2, 1)	8	sawing wood Local employment, Oji, cutting weeds in rubber plantations, sawing wood
6	1.404	2.08 (13 rai)	1,250	559.3	(2, 3)	7	Local employment, sawing wood
Totals:	17.604 hectares	18.976 hectares (93% accuracy overall compare d to GPS)		Mean Average Product- ivity: 816 kg/ha.		Average Household Rice Supply: 5 ³ / ₄ months	

Annex 11: Ban Pak Veng, All Other Rice Harvest and Rice Security Data 2006

Name	Location/ Type	Self- Estimate d Yields (kg.) (not milled)	Self- Estimated Area (ha.)	Yield per Hectare (kg/ha.)	Number of Househol d Members (Adults, Children under 12)	Self- Estimate d Rice Supply (months)	Household Head (usually male) Comments on Alternate Sources of Cash Income
1	Own swidden	450	1.50 (9.375 rai)	300.0	(4, 2)	3	Fishing
3	Own swidden	300	0.32 (2 rai)	937.5	(2, 5)	3	Local employment, clearing land cutting weeds
7	Single mother household, has no paddy of her own				(3, 2)	3	Local employment with Oji, helping relatives in the village for cash, borrowing rice from relatives
10	Own swidden	720	1.00 (6.25 rai)	720	(3, 3)	3	Local employment, sawing wood, cutting weeds
11	Own swidden	810	0.8 (5 rai)	1,012.5	(2, 2)	2	Purchases rice through his and his wife's state teacher salaries
12	Own swidden	234	0.24 (1.5 rai)	975	(4, 2)	1	As village headman, receives a base salary from

13	Own swidden	300	0.32 (2 rai)	937.5	(2, 3)	3	<i>Oji-LPFL of US\$50 per month for work on plantation management</i> <i>Local employment, sawing wood.</i> <i>Borrows rice from his sister in the village.</i>
14	Tractor-cleared	540	0.8 (5 rai)	675	(2, 1)	8	<i>Local employment, sawing wood, weeding for Oji-LPFL</i>
	Own swidden	300	0.32 (2 rai)	937.5			
15	Tractor-cleared	1,250	2.08 (13 rai)	601	(6, 0)	3	<i>Local employment, e.g. weeding for Oji (but sporadic, once or twice per month); fishing</i>
16	Tractor	300	0.96 (6 rai)	312.5	(2, 4)	5	<i>Local employment, sawing wood, cutting weeds for Oji-LPFL, fishing</i>
	Own swidden	600	0.4 (2.5 rai)	1,500			
17	Tractor-cleared	650	1.00 (6.25 rai)	650	(3, 0)	3	<i>Local employment, sawing wood, borrows rice from Ban Songhong traders or other villagers</i>
18	Tractor-cleared	300	0.48 (3 rai)	625	(1, 2)	3	<i>Fishing, working for Oji-LPFL</i>
19	Tractor-cleared	375	0.32 (2 rai)	1172	(2, 3)	3	<i>She does not know what to do. Her husband is sick and cannot work. Her son catches fish.</i>
21	Wet-paddy	600	0.48 (3 rai)	1,250	(7, 1)	4	<i>Local sawing wood, employment with Oji-LPFL</i>
22	Own swidden	375	1.00 (6.25 rai)	375	(3, 3)	4	<i>Local employment, sawing wood, working for Oji-LPFL</i>
23	Tractor-cleared	300	1.00 (6.25 rai)	300	(2, 2)	1	<i>Employment, sawing wood. Working for Oji is 2-3 days per month. Is not sure what he will do.</i>
24	Tractor-	363	0.64 (4 rai)	567	(2, 3)	3	<i>Local employment,</i>

	cleared						<i>sawing wood in Mekong plantations, weeding for Oji-LPFL. Fishing can provide 200-300,000 kip per month</i>
28	Tractor-cleared	1,500	2.08 (13 rai)	721	(5, 1)	7	<i>Has 1 child working in Vientiane, every month she sends 200-300,000 kip</i>
30	Tractor-cleared	1,000	0.8 (5 rai)	1,250	(3, 0)	10	<i>Local employment, Oji-LPFL (his wife and son work as he is getting older)</i>
	Own swidden	150	0.32 (2 rai)	469			
31	Tractor-cleared	875	1.00 (6.25 rai)	875	(2, 2)	10	<i>Local employment, sawing wood. Fishing for eating.</i>
32	Wet-paddy	450	0.24 (1.5 rai)	1,875	(4, 1)	6	<i>Local employment, sawing wood. It is difficult to find work.</i>
34	Own swidden	875	1.00 (6.25)	875	(5, 2)	5	<i>Local employment. Often saws wood.</i>
35	Tractor-cleared	250	1.00 (6.25)	250	(5, 3)	4	<i>Local employment, sawing wood. Cutting grass in Oji plantations</i>
	Own swidden	500	1.00 (6.25)	500			
36	Own swidden	500	1.04 (6.25)	500	(3, 3)	3	<i>Local employment, sawing wood.</i>
37	Own swidden	425	1.04 (6.25)	425	(3, 4)	3	<i>Local employment, sawing wood. Doesn't borrow rice from other neighbours as few villagers have enough to lend rice.</i>
38	Tractor-cleared	200	0.32 (2 rai)	625	(5, 1)	3	<i>Collects things from the forest and exchanges for rice. Sawing wood and making knives.</i>
	Own swidden	150	0.4 (2.5 rai)	375			
39	Swidden failed, poor burn				(2, 3)	0	<i>Local employment, sawing wood. This is not enough so he</i>

	poor burn						<i>must borrow from neighbours.</i>
40	Own swidden	125	0.32 (2 rai)	390.5	(2, 0)	2	<i>Borrows rice from relatives.</i>
41	Own swidden	375	1.00 (6.25 rai)	375	(4, 0)	2	<i>Employment with Oji, cutting weeds and planting trees</i>
42	Tractor-cleared	300	1.00 (6.25 rai)	300	(6, 2)	4	<i>1 daughter is working in Thailand, and another in Vientiane. They can occasionally send 3-4,000 baht through the broker in Ban Songhong</i>
	Own swidden	700	1.00 (6.25rai)	700			
43	Own swidden	700	0.48 (3 rai)	1,458	(5, 4)	4	<i>Local employment, sawing wood, working for Oji.</i>
44	Own swidden	750	1.00 (6.25 rai)	750	(3, 0)	4	<i>Local employment, working for Oji. Selling fish to traders can provide 2-3,000 baht per month.</i>
45	Tractor-cleared	1,800	1.56 (9.75)	1,154	(3, 3)	12	<i>One daughter works in Vientiane</i>
46	Own swidden	400	1.00 (6.25 rai)	400	(6, 5)	1	<i>His son in law works for Oji</i>
47	Tractor-cleared	200	1.00 (6.25 rai)	200	(3, 5)	4	<i>Local employment, sawing wood, working for Oji</i>
48	Own swidden	990	0.64 (4 rai)	1,547	(2, 2)	6	<i>Local employment, sometimes on rubber plantations at the Mekong. Fishing can provide 100,000 kip per month</i>
<p>Average Household Rice Supply: 4 months Average Household Rice Supply (own swidden): 3.1 months Average Household Rice Supply (tractor-cleared): 4.7 months</p>							

Annex 12: Plantation Labour, 2006-07. Ban Pak Veng

House No.	Wealth Ranking (in Association with Village Headman)	Oji Wages (kip). Daily wage rate = 20,000 kip \$1USD: 10,000 kip					Total (USD)
		Cutting Forest for Oji @ 800,000 kip per ha.	Marking and Digging Holes @ 600,000 kip per ha.	Weeding Labour by Date, 2006			
				9-8- 2006	11-08- 2006	12-8- 2006	
1.	Medium					1	2.00
2.	Poor	883,000	662,000	2	2	3	168.50
3.	Very Poor						0
4.	Poor	1,000, 800	720,000				172.08
5.	Medium	920,800	660,000	1	1		162.08
6.	Poor	1,788, 800	1,320, 000	2	2		318.88
7.	Very Poor (female headed household)			1	1		4.00
8.	Poor	1,123, 200	840,000	2	2	1	206.32
9.	Poor	921,600	660,000	1	1		162.16
10.	Poor			3	3	2	16.00
11.	Poor						0
12.	Medium (current nai ban)			2	2	2	12.00
13.	Poor						0
14.	Poor				1		2.00
15.	Medium			2	3	2	14.00
16.	Poor			2	2	1	10.00
17.	Medium					1	2.00
18.	Poor			2	2		8.00
19.	Poor (male household head ill for 2 years)				1	1	4.00
20.	Poor						0
21.	Medium (former nai ban)	1,059, 200	780,000	2	2	1	193.92
22.	Medium					1	2.00
23.	Poor				1	1	4.00
24.	Poor						0
25.	Medium	1,667, 200	1,200, 000	2	1		292.72

26.	Poor	958,400	719,000	2	1		173.74
27.	Medium						0
28.	Medium			3	3	1	14.00
29.	Poor	775,200	540,000			2	135.52
30.	Poor			1	1		4.00
31.	Poor						0
32.	Poor	809,600	600,000				140.96
33.	Medium	1,024,000	720,000	3	2		184.40
34.	Medium			2	2		8.00
35.	Medium			1			2.00
36.	Poor			2	3	1	12.00
37.	Poor			2		2	8.00
38.	Medium			2	3	3	16.00
39.	Very Poor			2	1	2	10.00
40.	Medium						0
41.	Medium			2	2	1	10.00
42.	Poor				1		2.00
43.	Poor			1			2.00
44.	Medium						0
45.	Medium (former nai ban)						0
46.	Medium			1		1	4.00
47.	Poor	1,146,400	840,000	1			200.14
48.	Poor						0
3 very poor families;		13 workers	13 workers	49 workers	52 workers	33 workers	Total wages paid: \$US
27 poor families;		3,496,400 kip	10,261,000 kip	(Total = 980,000 kip	(3 names unidentifiable) = 1,040,000 kip	(5 unidentifiable) = 660,000 kip	2,683.42
18 medium families							

Annex 13: Other weeding labour availability, 2007. At the time of recording, the weeding in 80 hectares (2005) was completed, but had not yet taken place in the areas planted in 2006. The Pak Veng headman suggested there would be an additional 5 days of weeding left for this works in the village after this date.

Date	Number of Workers from Pak Veng
Planting Labour: 26/07/2006	60
Planting Labour: 27/7/2006	47
27/1/2007 (in Ban Thasomhong)	17
28/1/2007 (in Ban Thasomhong)	15
29/1/2007	37
30/1/2007	28

31/1/2007	28
1/02/2007	24
3/02/2007	23
4/02/2007	32
5/02/2007	25
6/02/2007	34
7/02/2007	34
8/02/2007	25
Days of Weeding Labour Available: 12	Total person-days @ Ban Pak Veng: 322 Total Payments @ 20,000 kip per day = 6,440,000 kip (US\$644.00); or US\$13 per household.





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