

Making the Links Between Natural Resource Policy and Livelihood Dynamics of the Rural Poor

Social Forestry in Java, Indonesia

Patrick John Large
International Development Research Centre

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Working Paper 19

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Abstract

Development research and interventions have increasingly turned to a strategy of generating influence for policy change as a means of fundamentally altering the enabling context within which the goals of poverty reduction and sustainable development can be realized. In this transition it is critical to maintain a connection to local realities so that policy development and implementation at the macro level can be assessed in terms of their impact on the micro level of livelihoods. This paper attempts to make these macro-micro links by examining the entirety of the policy process from initial influences to implementation and ultimately to livelihood outcomes for rural households. The policy of focus is Social Forestry in Java, Indonesia which involves a core mechanism of handing over state-owned forest land to local people under terms of usufruct rights. The research adopted a dual methodology, analyzing the policy process through an extensive literature review and investigating livelihood impacts through fieldwork in the case study community of Saninten by utilizing a combination of quantitative and qualitative data collection techniques. The ‘policy analysis’ reveals the key drivers behind Social Forestry, how these became articulated in policy goals, and how divergent aims and other factors have led to deficiencies in implementation capacity. The ‘livelihood analysis’ empirically demonstrates significant increases of natural capital and incomes for the poor that have directly resulted from Social Forestry. The paper clearly establishes the relationship between policy and livelihoods that has evolved thus far, and discusses how policy reform options in the future could continue to enhance livelihood security for households of forest-based communities.

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Acronyms and Glossary of Indonesian Terms

CBNRM	Community Based Natural Resource Management
CF	Community Forestry
FPHD-S	<i>Forum Pemerhati Hutan Desa Saninten</i> Village Forest Observer Forum of Saninten
KTH	<i>Kelompok Tani Hutan</i> Forest Farmer Group
LADDER	Livelihoods and Diversification Explored by Research
LATIN	<i>Lembaga Alam Tropika Indonesia</i> The Indonesian Tropical Institute
NTFP	Non-Timber Forest Product
PHBM	<i>Pengelolaan Hutan Bersama Masyarakat</i> Community-Based Forest Management
PMDH	<i>Pembangunan Masyarakat Desa Hutan</i> Forest Village Community Development
PRA	Participatory Rural Appraisal
SF	Social Forestry
VOC	Dutch East India Company
<i>Asper</i>	head of 'Forest Sub-District'
<i>Kabupaten</i>	District political administrative unit
<i>Kampung</i>	hamlet or sub-village
<i>Mandor</i>	'Forest Foreman'
<i>Mantri</i>	'Forest Guard'; head of 'Forest Police Resort'
<i>Tumpang Sari</i>	'essential joining together'
<i>Perhutani</i>	state forestry corporation in Java

Introduction

It is widely acknowledged that policy is a central factor shaping the livelihoods of the poor (Pasteur, 2001). Policy and the institutional arrangements through which they function have a clearly pervasive and fundamental influence on the nature of livelihoods, mediating the capacity of households to gain access to assets and activities. Based on such a recognition and set within a donor shift toward 'moving upscale' (Ellis & Bahiigwa, 2001), development interventions increasingly focus upon generating policy influence, promoting policy reform, or creating new policy initiatives as the core means of realizing broader objectives of sustainable development and poverty reduction. Yet with such emphasis being made, it is far too often observed that policies are actually quite limited in terms of improving livelihoods, as they are either poorly directed toward such a goal or because policy intentions fail to translate into real impacts 'on the ground' (Soussan et al, 2003). What is therefore required is a means of enhancing our understanding of the linkages between policy and livelihoods. This paper and the research upon which it is based attempts to provide such a means by testing a methodology that examines the entirety of the policy process from initial influences to implementation and ultimately to livelihood outcomes for target households.¹ The underlying aim of the analysis is to identify options to enhance or reform policies such that they provide greater benefits for the livelihoods of the rural poor.

For two key reasons, this research takes as its focus a particular natural resource management policy. First, while the livelihood conditions of rural communities are increasingly characterized by non-farm and migration activities, natural resources continue to provide the essential basis for achieving livelihood security in a rural context. The rural poor depend heavily on natural resources for their livelihoods, and therefore

¹ The methodology and overall orientation of this research draw heavily upon several projects funded by the Policy Research Programme of the Department for International Development (DFID), UK that sought to generate a greater understanding of how sustainable livelihoods approaches could be used in policy development. In particular, this research uses models of the policy process and of livelihoods, and a format for policy analysis developed by the 'Improving Policy-Livelihood Relationships in South Asia' project (www.geog.leeds.ac.uk/projects/prp). It also adapted a methodology for livelihoods analysis from the 'Livelihoods and Diversification Directions Explored by Research (LADDER)' project (www.odg.uea.ac.uk/ladder).

understanding how policy mediates the success and sustainability of resource use is critical to broader poverty reduction (Rennie & Singh, 1996). The second reason is that the policy arena for natural resources is actively and in some cases fundamentally changing. Fuelled by a combination of widespread decentralization reforms and the efforts of donors and NGOs to promote alternative approaches to environmental governance, policy climates in many nations have increasingly shifted toward models that emphasize a new and critical role for local participation in natural resource management regimes and the joint sharing of responsibilities between multiple stakeholders. Underlying such systems of 'community-based natural resource management' (CBNRM) or 'collaborative management' is a premise that incorporating the various strengths of communities into a dynamic partnership with government and other actors leads to more sustainable management of natural resources, which in turn generates livelihood improvements for local people. While participatory approaches may in fact be the most effective means of achieving positive livelihood change for local communities, a wide gap remains between how such intentions are articulated in the rhetoric of policy and the realities of livelihood outcomes. It is therefore critical to empirically demonstrate the real end-results of the policy process in order to enhance the rigor of developing and promoting natural resource policy oriented toward CBNRM and collaborative management.

Like many south and southeast Asian nations, Indonesia is in the midst of a transition toward the greater decentralization of local government in general, and an incremental expansion of community-based models of natural resource management specifically. This research examines the experiences of Social Forestry and related policy (Joint Forest Management, Community-Based Forest Management) in Java, which represent an initial shift toward a locally based forest management system as an alternative to centralized government control over 'scientific' forest exploitation that has increasingly culminated in widespread degradation. The core implementation mechanism of this policy involves the handing over of state forest land to local people under terms of usufruct rights, and as such it has significant potential for increasing the natural capital of recipient households and improving their overall livelihoods. However, as is common with many policies, the terms of Social Forestry have at times been vague and they carry a

strong macro character that does not easily translate to the micro realities of local livelihoods. It is therefore essential to gain a clear view from the community level as to the real progress and opportunities that Social Forestry provides for achieving viable and secure livelihoods. This research sets out to generate such an understanding by utilizing an approach that systematically analyzes the process of policy development and implementation, and traces its livelihood impacts on the households of a case study community in rural Java.

The paper proceeds by first outlining the models and methodology that lie behind the analysis of the policy process and its impact on livelihood dynamics conducted by this research. Second, the findings of the policy analysis are presented, following a format that traces the evolution of Social Forestry policy from initial influences, through development, and ultimately to implementation. Third, data from the micro-level livelihood analysis is summarized to assess the effects of policy within a case study context. This focuses on the changes to assets resulting from policy implementation, the creation of local institutions, and the expansion of livelihood activities and increases in incomes. Finally, findings in these areas are synthesized to link key aspects of the wider policy process to impacts at the community and household level in order to ultimately improve this relationship for the benefit of the rural poor.

Models and Methodology

In order to understand the relationship between Social Forestry (SF) policy and livelihood impacts for the rural poor the research adopted a 'twin-track' approach (Soussan et al, 2003). The first component centres on a methodology that analyzes the policy process from a macro level, examining the underlying influences behind SF policy, how these shape the articulation of policy goals, and the degree to which these goals emphasize livelihood improvements or poverty reduction. In order to realize the central research goal of understanding the impact of policy on local livelihoods, the methodology used by this research carries forward policy development into an investigation of how relevant actors interpret and subsequently implement the policy at the community level. Finally, a comprehensive understanding of the policy process provides the basis for iterative

reflection where knowledge of local impacts can be traced back to key points in development and implementation phases to subsequently improve the relationship between policy and livelihoods. The second component utilizes a methodology of analyzing livelihoods that examines the impact of policy at the micro level of the community and the household. In particular, it investigates the way in which SF policy and corresponding institutional mechanisms of implementation mediate local access to natural capital and other key livelihood assets, and the resultant effects on the livelihood activities and incomes of households. This latter component is centred on fieldwork research in a case study community in Banten province of Java. The remainder of this section elaborates on these methodologies of 'policy analysis' and 'livelihood analysis' and explains the conceptual frameworks which guide them.

The Policy Process

In order to make the desired linkages between macro and micro, it was absolutely critical for this research to understand policy as a process, incorporating the full spectrum of phases from the various influences that shape initial conception to the framing of policy by relevant actors and finally to the translation of policy and the execution of its mechanisms by responsible institutions and agencies. A very pragmatic approach to analyzing policy was thus followed, stressing the importance of policy implementation and corresponding institutional capacities as much as policy development. The nature of policy as a process and the equal emphasis given to 'development' and 'implementation' is represented in a conceptual model of the policy process developed by Soussan et al, (2003) (Figure 1).

The development of policy emerges from a diversity of influences that act upon key agents of change in the policy making process. New policy can emerge in order to take advantage of opportunities provided by technical innovations or it can be a response to debates and concerns catalyzed by new knowledge such as from seminal studies. The general social, political, and economic context is the broadest influence on policy and often the most profound, as it dictates political priorities, determines the availability of resources, structures participation in policymaking, and defines legitimacy in overall governance (Soussan et al, 2003). Certainly the most dominant trend in the Indonesian

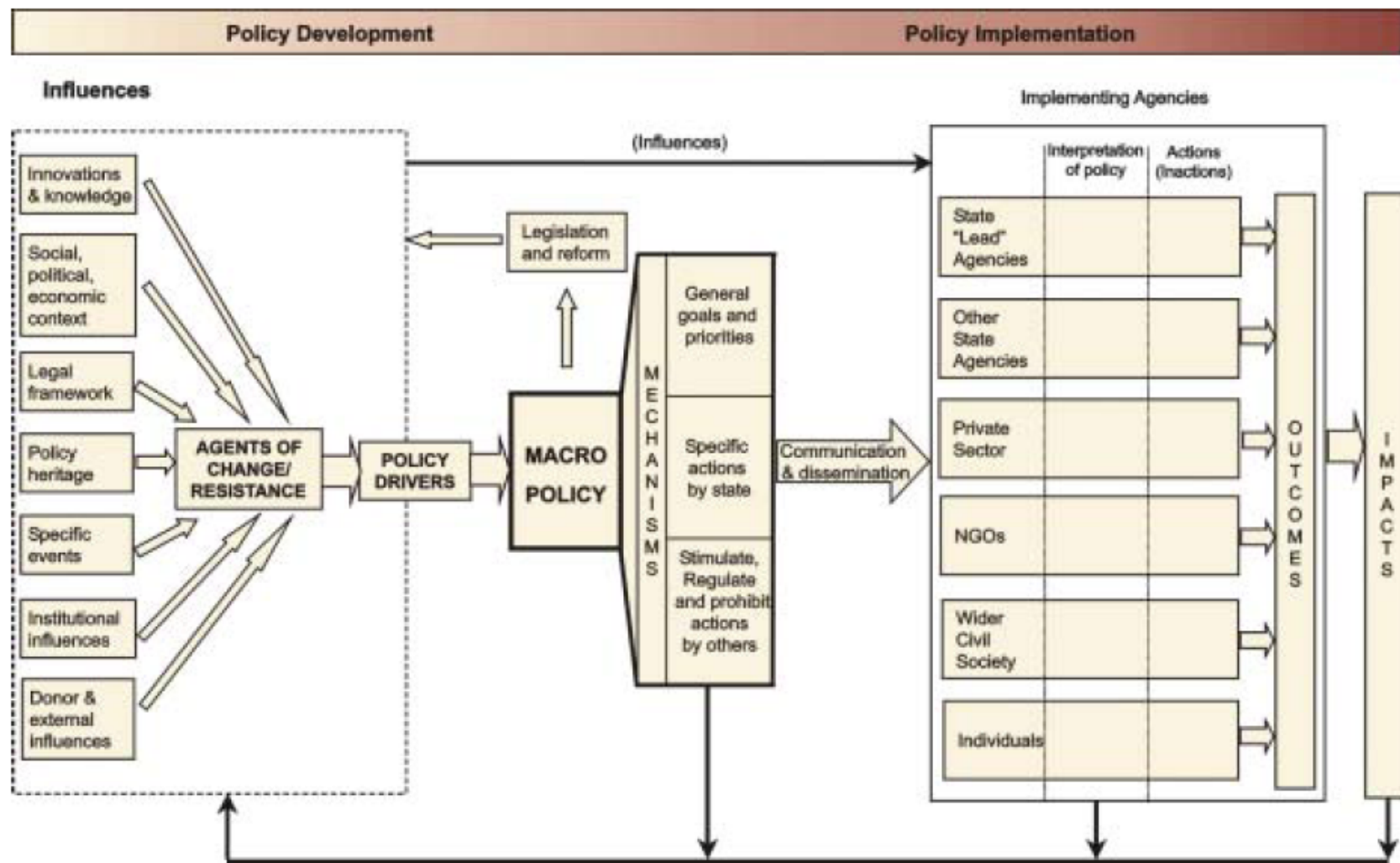


Figure 1. Policy Process Model (Source: Soussan et al, 2003)

and many other contexts is the move to decentralization, which is having acute influences upon policy processes. The wider legal framework significantly defines policy options in terms of institutional processes and intended outcomes. For natural resource management policy in particular, specific laws regulating land and resource tenure, access to common property, environmental protection and so on determine the scope for policy goals and what they can feasibly achieve.

In a highly practical sense ‘policy heritage’ is perhaps the most immediate influence, as current policy often reflects the bureaucratic momentum generated from past policy and legislation. Thus an examination of previous policy is often a clear means of assessing the trend from which current policy extends. In a similar historical sense, prior specific events can greatly influence policy by catalyzing a political response. Events can range from the more mundane of key speeches, conferences, or workshops to the traumatic of natural disasters or fundamental governance changes. Institutions such as central and local government, NGOs, the private sector and so on directly influence policy development through their vested interests and advocacy for certain policy directions, while donors and other external organizations similarly often pressure and shape the nature of policy in developing nations.

The operation of the general myriad of influences that exist at any given point upon ‘agents of change or resistance’, particularly key individuals within the administration or political system, produces specific ‘policy drivers’ that represent “the way in which different influences (and individuals) come together to push policy in certain directions at certain times” (Soussan et al, 2003). Understanding policy drivers is thus essential to understanding the ultimate impacts of policy as they reveal the underlying motivations for pursuing the relevant strategy and thus the level of commitment and intended outcomes that should be expected. The output of the ‘policy development’ phase is the ‘macro policy’ which articulates broad goals and priorities, and establishes mechanisms for implementing the policy either through direct action by state agencies or through the mediation of actions by other institutions.

While understanding the official document or statement embodying the macro policy is critical, tracing the livelihood impacts of policy requires a more systematic consideration of the 'policy implementation' process. The key point is that once policy and implementation strategies are defined, ultimate effectiveness is entirely dependent upon the translation of policy into actions by the agencies responsible for its implementation (Soussan et al, 2003). Understanding this process requires some pragmatic thinking that often escapes conventional policy analyses. First, there must be a key consideration for how the policy is communicated and disseminated, as it is not uncommon to find situations in which relevant institutions have nearly no knowledge of the policy nor their responsibilities. Based on their received knowledge, each implementing agency will interpret the policy according to their internal institutional culture, capabilities, priorities, and resources; in effect creating their own micro-policies (Soussan et al, 2003). The agencies then take concerted and specific actions to implement the policy. The subsequent linkages of these actions to 'outputs', 'outcomes' and 'impacts', as drawn from common evaluation terminology, completes the model of the policy process from the macro level to micro results as realized on the ground.

The model of the 'policy process' structures the methodology of 'policy analysis' used by this research by providing the conceptual basis for examining discrete components in policy development and implementation. The components follow a more or less chronological order of steps from influences through to policy formation and on to the realization of implementation mechanisms, and are utilized as a format in writing up the findings. The first component relates to 'influences' in the model, analyzing key historical milestones through a 'genealogy of policy' to understand the role of past policies and legislation, catalytic events, and pressures exerted by various institutions. The second component considers the further influence of the wider 'political and governance context' on policy development and how it relates to who the 'agents of change' are and how they respond to influences. Analysis of 'key policy issues and their relation to livelihoods' highlights the critical 'policy drivers' in the process and the subsequent response in terms of policy goals and implementation mechanisms as articulated in a 'macro policy'. Finally, a 'political narrative' describes the roles of formal organizational structures, the strategies they adopted in policy implementation, and their overall institutional capacity. This last

component thus also trails into policy outputs in terms of what actually happened from a macro point of view, although a full examination of outputs, outcomes, and impacts as experienced by communities and households is left to a micro-level methodology.

The particular tool used to conduct the policy analysis was an extensive documentary review of available literature including key policy documents and various academic papers. This was supplemented to a certain extent by key interviews with relevant stakeholders. Primarily this involved interviews and interaction with a key NGO active in the development and implementation of Social Forestry policy, *Lembaga Alam Tropika Indonesia* (Indonesian Tropical Institute) and informal discussions with local people, including forestry officials, leaders of 'forest farmer groups', households accessing land through Social Forestry, and other individuals directly involved in the implementation of the policy at the community level.

The Livelihood System

The second element of the twin-track approach is a 'livelihood analysis' that likewise draws upon a conceptual model to formulate a research methodology. Building on an extensive dialogue concerning the notion of livelihoods and previous frameworks presented by various authors (see Carney, 1998; Ellis, 2000), the livelihood model utilized by this research outlines a core sub-model representing the internal dynamics of a household and the complex relationships that exist with external forces (Figure 2). Mediated by the particular terms of their access profile or 'entitlements', households draw down various 'livelihood assets' from the 'local resource base', defined broadly to include all community resources from material and natural to social and human. This interaction of factors subsequently defines the assets available to a given household including natural capital (land, water, common property resources), physical capital (individual tools and accessible infrastructure), human capital (quantity and quality of labour), financial capital (access to credit, savings, etc.) and social capital (systems of trust and reciprocity, networks, and membership in more formalized groups).

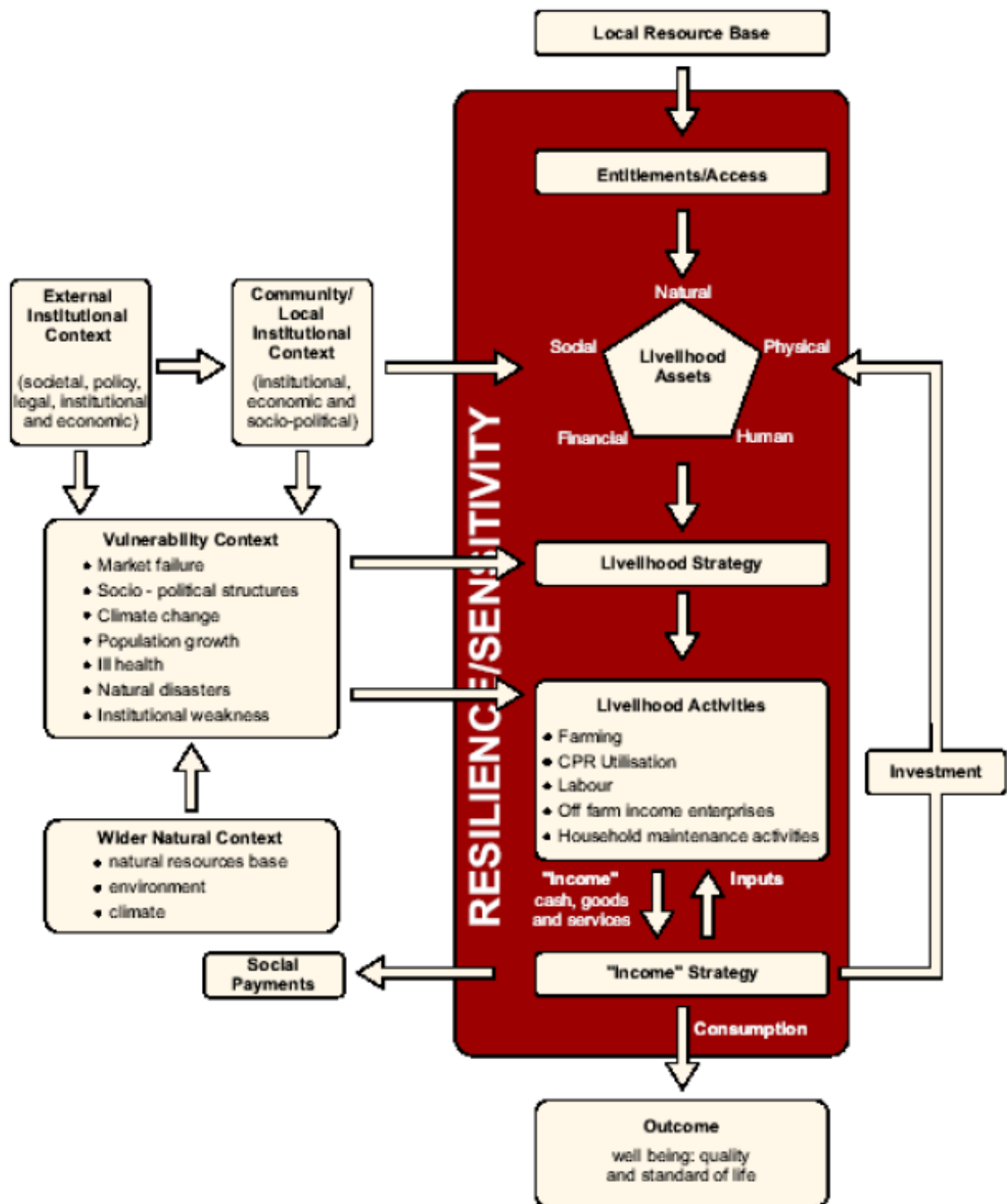


Figure 2. Livelihood Model (Source: Soussan et al, 2003)

As ‘factors of production’, assets signify the options available to a household in their pursuit to engage a livelihood (Soussan et al, 2003). However, the actual deployment of assets depends upon iterative household decision-making, conceptualized as a ‘livelihood strategy’. Based on their choices, a household adopts various ‘livelihood activities’ – the things people do to make a living. Categorization may take on a number of forms depending on the context, but generally it is dichotomized between ‘farm’ or ‘natural resource based’ and ‘non-farm’ activities. These in turn generate an ‘income’ (cash, goods, services) of direct benefit to the household, allowing expenditures on ‘social payments’, ‘consumption’, ‘investment’, and ‘inputs’ for on-going activities.

The processes occurring within the household are of course inextricably linked to external factors that condition their function, and thus incorporating these into the model in an effective way is essential for its overall utility. The ‘wider natural context’ conditions livelihood success by determining production conditions, which is particularly critical for rural people and their predominately natural resource based activities. This includes rainfall levels and other seasonal factors, long-term trends such as ecological deterioration and climate change, and specific shocks such as droughts, floods, or other natural disasters. The second aspect is the ‘external institutional context’, defined broadly as the multitude of “factors that link people and places into regional, national, and global systems” (Soussan et al, 2003). This is an absolutely critical component for the current research as it encompasses the actions of government and other institutions generally, and the articulation of policy specifically. The ‘local institutional context’ represents the functioning of formal and informal community institutions. The dynamic nature of these three external forces is translated by the ‘vulnerability context’, which represents the most immediate influences upon livelihood processes. Finally, the notion of relative vulnerability and the capacity of households to cope with and adapt to the dynamics of change that are beyond their control is conceptualized by a ‘resilience/sensitivity’ filter between internal and external components.

The livelihood model significantly informed the ‘livelihood analysis’ methodology by providing a conceptual basis of indicators to ‘map’ the consequences of change brought about by the development and implementation of Social Forestry policy (Soussan et al,

2003). Thus, taking as a starting point a critical change in the external policy context, the micro research analyzed subsequent effects as framed through the model, including community-level changes to the local social and institutional context and household-level changes to entitlements, natural and social capital, livelihood activities, and income. As an overall guiding framework, the model was therefore very useful for structuring the detailed approach to analyzing livelihoods at the micro level.

The fieldwork conducted for this study adapted a design used by the LADDER research team, which had previously utilized the methodology in examining the institutional barriers to livelihood security confronting rural people in four African nations (LADDER, 2001). The key characteristic of the fieldwork is the integration of both qualitative and quantitative methods – the former relying primarily upon focus group discussions and informal interviews to examine the policy and institutional context at the local level, and the latter based on a household survey collecting data on assets, activities, and incomes.

The livelihood analysis focused upon a single case study community and thus from the outset the research must acknowledge its limited representativeness in terms of capturing the much broader scale of micro impacts resulting from the implementation of Social Forestry and associated policy in Java. Moreover, site selection was restricted to only a handful of villages where the collaborating research partner, LATIN, was carrying out ongoing activities. Nevertheless, it is argued that the sample village represents a typical Javanese forest-based community in terms of rural livelihood patterns and that the implementation of Social Forestry in the site was very similar to other experiences.

The case study community of Saninten is located within the sub-district Kaduhejo, district Pandeglang in the far western Javanese province of Banten (Figure 3). The village is situated upon a mountain slope of *Gunung Karang* and thus its total land area of 872 hectares forms a triangular shape that steadily increases in elevation (Figure 4). The land area from approximately 300 to 700 metres is designated as ‘village land’ held under private ownership and used primarily for agro-forestry production and settlement. The area beyond 700 metres to the mountain peak at 1,772 metres is ‘forest land’ under the official ownership of Perhutani (the state forestry corporation), and contains the land

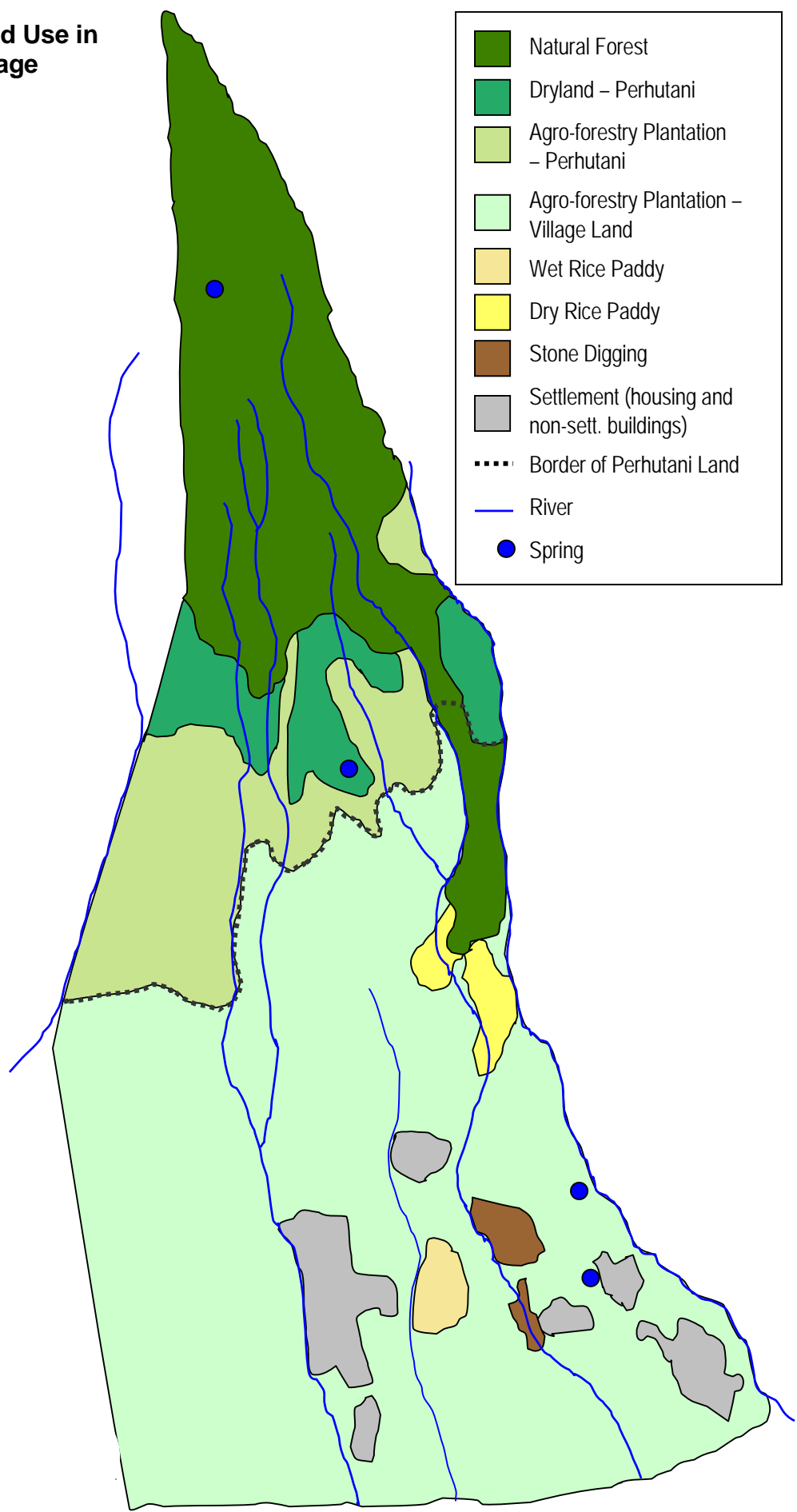
distributed through Social Forestry. Saninten has 813 households with a total population of 4,687 persons spread across thirteen *Kampungs* (smaller hamlets or sub-villages).



Figure 3. Saninten village, Banten province, Java

Although several instances of paddy cultivation exist, agro-forestry is overwhelmingly the most dominant ‘farm’ activity and overall it is a vital livelihood source for local people. This production system is highly complex, incorporating multiple crops on a single plot. Generally the most numerous is banana, followed by several large fruit trees – durian (*Durio Zibethinus*), *petai* (*Parkia Speciosa*), *melinjo* (*Gnetum Gnemon*), cloves, and coconut. Farmers also grow several non-fruiting species for their timber including *albazia*, *somsi*, and mahogany. Finally, due to its shade tolerance, coffee is often grown as a supplemental crop under the canopy of larger trees. Livestock raising is virtually non-existent, particularly since the Asian bird flu epidemic wiped out poultry stocks. Non-farm activities are very diverse, including harvesting and other local wage labouring, cutting/processing timber, trading agricultural products, various services, petty trading (door-to-door sale of vegetables and other goods mainly by women), and shop keeping. With a main road accessible at the mountain base at a distance of two kilometres from the village, a final key activity for the village is migration to the district capital (10 km), provincial capital (35 km), national capital (115 km) or other major urban centres.

Figure 4. Land Use in Saninten Village



Qualitative data collection centred around six substantive topics – a profile of the village including access to services and infrastructure, common property resources, development activities, and land tenure; relative wealth between households; livelihood change over the past decade; agro-forestry activities; non-farm and migration activities; and institutional effects on local livelihoods. For each of these components, a ‘guideline sheet’ was drafted containing a series of questions for the relevant topic. The desired information was subsequently collected through multiple methods in an attempt to triangulate data sources and perspectives. In general, at least one focus group was conducted for each component, while being further supplemented by informal and key informant interviews, secondary data collection, and several PRA (participatory rural appraisal) techniques.

Quantitative data collection was based upon a livelihood survey that took the household as its unit of analysis. The selection of respondents utilized a complete list of households from census data to employ random sampling. Given the feasibility of administering the survey within the limited timeframe of the fieldwork, the research team chose 40 as the desired sample size. A sampling of interval of 20 was then generated by dividing the total household population (813) by the selected sample size. Finally, the team selected every 20th household in the sample frame to produce a list of 40 households that would make up the sample respondents. Given the random nature of sampling, inferences can be drawn about the general village population. In terms of statistical representativeness, the sample size provides the quantitative results with a 95% confidence level and a confidence interval of 15.

The questionnaire itself is divided into several forms, each eliciting different information. The first form centred on basic household data, including household size and the gender, education, and main occupations of its members. Thus, indirectly it collected data on human capital (amount and quality of labour). Asking about the entire family led to discussions about members who were permanently or mostly away from the village, which in turn allowed for the collection of data on remittance incomes. The second form analyzed the natural capital of land and determined the type of ‘ownership’ involved (private, land from Social Forestry, sharecropping). Questions regarding livestock

became irrelevant in the particular context of Saninten. The third form focused on financial capital in terms of accessing credit, but the team decided not to collect specific quantitative details concerning these activities. As well, collecting data on physical capital such as house construction materials and personal tools and implements was deemed to not be essential given the already considerable time required for other key aspects.

The fourth form analyzed 'farm' or agro-forestry incomes by listing all of the commodities grown on the different land types used by the household, determining the total amount of each crop produced in one year, and calculating total incomes. The fifth form continued with income data by examining non-farm activities. This process required using flexible and innovative questioning and detailed verification techniques, as determining total annual incomes for each activity conducted by individual family members was much more difficult than farm incomes. By summarizing the livelihood activities and corresponding incomes of the respective household, the sixth form confirmed the accuracy of the collected data. Finally, a series of open-ended questions were included at the end of the questionnaire concerning livelihood change, Social Forestry, and other pertinent topics, and these were pursued with the respondent as time permitted.

Policy Analysis

Based on the methodology and format for a policy analysis described above, the following section provides a thorough analysis of Social Forestry and related policy in Java, Indonesia. This begins with by discussing the basic relationship between forests and livelihoods before going on to trace the historical progression of forest management policies. The analysis then briefly outlines the shifting political and governance context in Indonesia, which looms large in terms of policymaking. A discussion of key policy issues and their relation to livelihoods clarifies policy drivers, how these became articulated in official macro policy, and the implementation mechanisms that were initially defined. Finally, a political narrative of the policy process examines the formal roles of institutions, the strategies of implementation they employed, and their overall functional capacity.

Forests and Livelihoods in Java

The island of Java supports more than 121 million people (60% of the national population) on a land base of only 128 thousand square kilometres, of which nearly one quarter (3 million hectares) is classified as 'forest land'. Given such conditions, Java's forest resources have enormous potential to act as a vital asset for the livelihoods of a significant percentage of Indonesians. Unfortunately, the reality is that this relationship between such a key natural resource and local livelihoods has been characterized by a sentiment of 'rich forests, poor people' (Peluso, 1992).

Beginning with Dutch colonialism and extending beyond the foundation of the Indonesian Republic, forestlands have been controlled and managed by the central government at the expense of local access and benefits. Since 1963, complete authority over all forest land in Java has been in the hands of the state forestry corporation, *Perum Perhutani*. For the majority of its existence, this agency has been driven by an overarching mandate of feeding the economic growth of an industrializing nation – in the process creating and implementing models of forest management involving top-down planning, principles of 'scientific' production, and the exclusion of local people from utilizing forest resources and participating in decision-making. Thus, for nearly two centuries local people have lacked any rights of access or tenure to the forest resources located within the boundaries of their villages, and all forest-based activities – from those with more limited and controlled impacts such as gathering fuelwood, fodder, and non-timber forest products (NTFPs) to the extremes of full-scale ('illegal') timber extraction and forest clearing for agriculture – have been restricted under a shroud of punitive threats and real punishments.

Yet by the late 1980s the ultimate ecological and economic failure of their 'command and control' system forced Perhutani to begin identifying alternative options for forest management. Witnessing widespread forest degradation and being subject to increasing pressure and attendant conflict from local people demanding the reinstatement of customary land access, Perhutani finally issued a policy response in the form of Social Forestry (SF). Jointly implemented between Perhutani and the Ford Foundation, the initial SF program rapidly expanded from 13 pilot projects in 1986 to 120 projects

covering 3,040 hectares of forest land in 1988. The crux of SF is the handover of degraded state forest land to households of forest-based communities. While the participants are required to form a Forest Farmers Group (KTH – *Kelompok Tani Hutan*) of approximately 20 households prior to receiving communal usufruct rights to an area of forest, the implementation of SF tends to have an individualistic orientation. Each household gains access to a defined plot of approximately 0.25 hectares, which they are obligated to re-plant with main timber species seedlings provided by Perhutani. Farmers are then expected to maintain these primary stands for the economic benefit of Perhutani, while concurrently making private land management decisions regarding the inter-cropping of additional commodities for their own income. Although Perhutani retains strict ownership rights over the land itself, SF nevertheless led to significant livelihood benefits in terms of increased natural capital and incomes for its beneficiaries.

Representing an advance on early SF policy, a broad program known as Forest Village Community Development (PMDH – *Pembangunan Masyarakat Desa Hutan*) emerged in 1992 to articulate an even more direct commitment to income generation and poverty reduction. However, the successful implementation of these policies, which became merged together, in terms of creating sustainable, secure and equitable livelihood impacts has been significantly challenged by the complexity of motivations on the part of Perhutani. The state corporation has not easily abandoned its greater policy objectives of utilizing forest resources for national economic development and promoting environmental conservation, and such objectives are not always readily reconciled with a livelihoods approach. The fact that many within the Perhutani mainstream resisted the more progressive aspects of SF and PMDH has been reflected in a limited level of commitment to participatory processes, developing local institutional capacities, and enabling many of the other key factors required to generate long-term livelihood impacts. Thus, there was considerable uncertainty concerning the effectiveness of SF and PMDH policy in improving the livelihoods of local people, particularly those of the rural poor.

In the midst of the political and social instability that erupted in Indonesia following the onset of the Asian economic crisis in 1997, forest encroachment and degradation intensified to new scales, further demanding a critical and timely policy response. The

answer that came was framed within the fundamental political and governance changes sweeping through the nation that broadened the scope for local involvement through an emphasis on the processes of decentralization and democratization. Issued by the Board of Directors of Perhutani in 1999, Community-Based Forest Management (PHBM – *Pengelolaan Hutan Bersama Masyarakat*) has offered new scope for multi-stakeholder processes, taken a more determined focus on enhancing local decision-making, and has opened the opportunity for greater local income benefits from sharing timber revenues, with the most successful cases leading to formal contracts between local KTH organizations and Perhutani.

In recent years the concept of Social Forestry has made a resurgence, with the Ministry of Forestry declaring SF as their national forestry program in July 2002. Backed both by the president at the time, Megawati Soekarnoputri, and the Minister of Forestry, Dr. Muhammad Prakosa, the policy carries significant political weight and its emphasis on decentralized forest management and empowering local communities could have substantial impacts. However, as with its policy antecedents, closing the gap between rhetoric and reality remains a challenging and often incomplete endeavour that must be validated by the micro-level realities of the livelihoods of forest-based people.

Genealogy of Policy

A Brief History of Forest Management and the Emergence of Existing Policy

Javanese communities once held traditional customary rights that allowed local people to freely access forest resources in support of their livelihoods. Whilst forest land and forest-based people fell under the domain of regional sultanates and principalities, the intervention of their rulers was focused primarily upon benefiting from the selective extraction of forest products. As such, the land itself was held by communal ownership as a common property resource, being maintained by local institutional arrangements that could function independent of excessive external control. Regardless, forest land and resources were highly abundant, which minimized competition and conflict.

The influence that the Dutch East India Company (VOC) exacted over Indonesia during the 17th and 18th centuries extended to forests through a monopoly over Java's teak

production. However, driven by maximizing profit much more than gaining political power the VOC, like their Javanese predecessors, caused only limited transformation of indigenous tenure systems and did not significantly restrict local access and use of forest resources for subsistence needs. Yet such relative autonomy of local people in their forest practices would end forever with the revoking of the VOC charter by the Dutch government in 1798 and the subsequent ushering in of the colonial state. As with all aspects of colonial power, absolute state control was imposed on forests by claiming exclusive rights to land and trees, appropriating the rights of local people and restricting their access in the process (Lindayati, 2000).

The formal entrenchment of the colonial forest management system came with the 1865 Basic Forestry Law and the 1870 Basic Agrarian Law with its *domeinverklaring* principle that together declared all unclaimed land, including forests, as the domain of the state. Thus an exclusionary management model emerged imposing a heavy centralized hand over forest use and resource extraction, while concomitantly enforcing sharp restrictions on local access backed by threats of punishment. The exception to the rule of exclusion was the *tumpang sari* system instituted during the Dutch colonial era wherein forest villagers worked for plantations and in return were granted temporary land access for dry land farming activities in between main timber species (Rosyadi & Nuryartono, 2002). The historical remnants of this system would become highly influential in later forest management.

Accompanying the socio-political instability that erupted with the Japanese invasion of Indonesia in 1942 and the subsequent declaration of the Republic of Indonesia in 1945, poor villagers increasingly encroached upon forest areas to clear land for farming or to extract timber (Peluso, 1992). By 1949, at least 400,000 hectares (14%) of Java's state forests were occupied by peasants or deforested from 'illegal' logging (Departemen Kehutanan, 1986). Supported in part by the rise of communist factions within Indonesia, such land occupation and demands for land reform spread during the 1950s and early 1960s. However, the failed coup of 1965 and the subsequent ascension of the 'New Order' government would again reinstate strict central control over forest lands.

Mirroring in name and intent the colonial legislation enacted almost exactly one century prior, the 1967 Basic Forestry Law again claimed all forest lands for the state. At the base of this legislation laid a policy ideology on the part of the Soeharto government that completely rejected local forest access, regarding the practices of peasants as economically unproductive and ecologically destructive (Lindayati, 2002). The total dominance of growth-oriented modernization planning as applied to the forestry sector translated into firm beliefs that state-controlled forestry could serve the greatest good of the greatest number of people, that scientific production was the most efficient and rational form of resource use, and that promoting economic growth for the state through forest production was the central role of the forester (Peluso, 1992). While this stance systematically denied the rights of local people, their demands for greater forest access that had always existed did not subside, and in fact were intensifying with growing populations and the diminishing viability of alternative rural livelihoods.

Given the threat to environmental stability and economic profits posed by forest encroachment, the social conflicts that emerged between local demands and Perhutani authority, and the challenges of maintaining the enforcement capacity required of an exclusionary forest management system, Perhutani was finally driven to seek new policies. The response began in the 1970s with the implementation of the Prosperity Approach and *Ma-Lu* programs, which represented the first articulation of a poverty-environment ethos. This position, which continues to resonate in policy discussions, argues that the poor adopt forest degrading activities, such as shifting cultivation, gathering fodder and fuelwood at unsustainable rates, burning forest to create grazing land, and illegally cutting timber for market sale, in order to survive (Sunderlin et al, 1990). Thus, the goal of these programs was to increase incomes from activities outside of the forest areas through extension methods and promoting alternative income generation so that local people would not resort to destructive forms of forest use. However, the programs failed to reduce forest encroachment and in so doing perhaps began to teach the lesson that poverty reduction, improved livelihoods, and greater environmental sustainability cannot be achieved by maintaining restrictions on local forest use and diverting attention to other income sources, but rather require an inclusive model integrating local people into natural resource management systems.

By the mid-1980s several influences began to coalesce to spur the development of a policy that would take such a focus on local participation and fulfilling the basic needs of forest-based people. Foremost were the continued deforestation and increasing and widespread social conflict, which earlier attempts had been unable to resolve. Coinciding with these negative trends was a shift in the development orientation of international donors, which made available a flood of aid in support of policy strategies that were seen to emphasize local people's forest access and tenure rights (Lindayati, 2002). The Ford Foundation played this major role in Indonesia, significantly influencing the adoption of Social Forestry (SF) in 1986. The fundamental concept underlying SF is that forest resource users will have the appropriate incentives to protect and manage the forest sustainably if they are given limited rights to forest resources. However, this stance was not vehemently embodied in policy implementation, as the administration essentially maintained their core belief in the superiority of state control and stewardship of forest resources over the viability and effectiveness of local-based systems.

The fact that SF was implemented only on highly degraded state forest land is critical in terms of understanding the overall orientation of the policy. Where land had become practically barren, Perhutani held very strong incentives for reforestation and eventual economic benefits from timber revenues – both of which are among the key stated goals of SF. Utilizing local labour to re-plant and subsequently maintain timber species through SF implementation thus had significant benefits for Perhutani, while at the same time allowing them to alleviate conflicts between themselves and local people. On the other hand, gaining new access to ¼-hectare of land on which they were allowed to inter-crop various annual and perennial species had definite economic benefits for village participants. Although SF therefore seemed to offer the opportunity for a win-win situation for the state and local people, the motivations of Perhutani, as the institution firmly in control of policy, did not easily translate into an approach committed to creating sustainable livelihood impacts. This has led many to criticize the early phase of SF as involving simple 'land-for-labour' deals (Mayers & Vermeulen, 2002), as not significantly benefiting the poor (Sunderlin et al, 1990), and as being highly limited in terms of facilitating genuine community participation and promoting systems of local forest management. In fact, it can be argued that early SF was in many ways no more than a

resurrection of the tumpang sari system of the colonial era – an inexpensive means of reforesting degraded land while providing short-term benefits to forest people.

While the expansion of SF to the broader ‘Forest Village Community Development’ program (PMDH) in 1992 promoted treating village communities as partners in forest development with the aim of achieving mutual benefits and took a greater poverty reduction focus by emphasizing the need to increase local incomes, little change was felt on the ground (Mayers & Vermeulen, 2002). Such failure of implementation included a lack of transparency and equity in the process of gaining access to land, limited interaction between Perhutani and Forest Farmer Groups (KTH), and Perhutani’s narrow emphasis on enforcing technical details over and above supporting local management. Underlying these limitations was a root problem of centralized decision-making within Perhutani, reflected in the fact that PMDH had been designed in its entirety from Jakarta, which combined with poor district and sub-district capacity within Perhutani personnel to actually implement the key components of a participatory forest management system.

The Asian economic crisis that began in 1997 was another key turning point for forest policy as the resultant social instability sparked another period of rampant forest destruction that in turn demanded a policy response. The end of the ‘New Order’ regime and the subsequent turn to decentralization strategies by the ‘*Reformasi*’ government meant that this policy would be framed within a broader context supporting greater local engagement. The highly vague nature of the initial issuing of Community-Based Forest Management (PHBM) in 1999 provided significant flexibility in implementation, which was taken advantage of by key NGOs in collaboration with local government who began developing models involving much greater local participation in all aspects of forest management, including a more equitable sharing of forest resources. The most successful application of PHBM has occurred in the Kuningan district where formal contracts on revenue sharing have been signed between local communities and Perhutani, and legitimate systems of collaborative management have been developing. However, the policy flexibility that allows such successes is also a source of concern since a heavy dependence on NGOs and the self-initiative of local government reflects a

lack of institutionalized commitment to PHBM on the part of Perhutani which would provide for a broader regional scope for implementation and greater effectiveness.

In 2002, the president, Megawati Soekarnoputri, publicly commented that the forests of Indonesia needed a 'breathing space' of 10 to 20 years and that a time for rehabilitation and conservation had come. A year later her official re-launching of SF as an overarching policy for Indonesian forestry, combined with the increasing emphasis on SF by the Minister of Forestry, solidified its role in forest management. The 2004 regulation for 'Empowering Local Communities through Social Forestry' provides the legal framework for pursuing this strategy and articulates a political commitment to 'creating a sustainable forest resource and increasing local people's prosperity' (Prakosa, 2004).

Catalytic Events and Key Pieces of Legislation

The landscape of post-independence natural resource management begins with the very establishment of the 'New Republic' led by Soekarno in 1945 and the corresponding constitution which provided the state with absolute rights to control all of Indonesia's natural resources (Lindayati, 2002). The extension of this dogma to forest management occurred after the rise of Soeharto's 'New Order' government with the Basic Forestry Law of 1967. This was an absolutely critical piece of legislation as it set off a highly centralized, profit-maximization, exclusionary model that dominated for three decades. The law attributes complete jurisdiction over forest lands to the state, including the authority to delineate forest domains with legal mechanisms to seize 'unowned' land, to define forest functions and modes of utilization, and to allocate or deny rights of use, which involved the total appropriation of local customary rights through the provision of exploitation rights to Perhutani (LATIN, 2001). Ironically, given the relatively recent independent state status, this law was therefore very similar to its colonial predecessor.

This first sign of a change from this mould came from the Jakarta World Forestry Congress of 1978 which introduced the Ministry of Forestry and Perhutani to the concept of Social Forestry and the emerging 'forests for people' rhetoric (Lindayati, 2002). The state however felt as though the central tenets of this approach – ensuring equity, fulfilling basic needs, and enhancing local participation – were already being addressed

by their Prosperity and other programs and thus little real SF development occurred until the mid-1980s. The process began in 1984 with a national seminar on SF, which in 1985 was followed by the establishment of Policy Review and Technical steering committees (Machfud, 1990). A landmark change in terms of the implementation of SF came in 1986 with the beginning of 13 pilot projects across the three states of Java, and the issuing of a 'Letter of Instruction' from central Perhutani management to Forest District Offices urging that the poor and landless be given priority access to SF sites (Sunderlin et al, 1990). Following the widespread expansion of these pilot projects, Perhutani established a 'Guide to the Implementation of Social Forestry' in 1988. Key to note is the fact that SF during this period was never enacted in formal legislation, but rather existed as a protocol or set of programs collaboratively managed by Perhutani and external parties, including the Ford Foundation, Bina Swadaya (a local NGO), and the Bogor Institute of Agriculture. Nevertheless, the field experiences did represent 'policy experiments' that proceeded to influence the formulation of nationwide SF policy (Lindayati, 2002).

The 1991 Forest Village Community Development decree ushered in the program of the same name (PMDH), which attempted to build on the implementation experiences of SF. To achieve the decree's broad goal of improving the socio-economic conditions of forest villages, PMDH relied primarily upon the central SF mechanism of providing local people with limited user rights over degraded state forest land. For its stated intentions of treating forest communities as partners in forest development, the program failed in its potential to develop models of forest co-management (Mayers & Vermeulen, 2002). As with SF, PMDH maintained the exclusive forest management and proprietary rights of Perhutani, extending to local people only limited rights to acquire a piece of land and a portion of the yield from inter-cropped commodities, to organize in a Forest Farmers Group, and to receive technical assistance.

The resignation of President Soeharto on May 21, 1998 and subsequent political reforms are another landmark that shifted policy orientation and continue to dominate the broad context within which forestry policy currently exists. For Java specifically, the key legislation that embodies this change toward decentralization and a more determined emphasis on local participation is the 1999 SK issued by the Perhutani Board of

Directors establishing a policy on Community-Based Forest Management (PHBM). An emphasis on engaging local actors in negotiation processes with Perhutani over issues of greater decision-making and acquiring greater revenue shares, including from sale of main timber species, is seen to be incrementally leading to a new balance of power among forest stakeholders (Mayers & Vermeulen, 2002). Yet this is highly contingent upon developing the capacity of local groups (KTHs specifically), as Perhutani remains reluctant to fully engage in partnerships due to their high administrative costs. Significant lessons have been learned from experiences in the Kuningan district regarding the implementation of PHBM, and key precedents have been set by the signing of formal agreements between local organizations and Perhutani after 2001.

While PHBM has continued to be central to forestry policy in Java, the broader concept of Social Forestry has been re-invigorated for Indonesia as a whole. This began in July 2002 at the National Forestry Meeting where the Minister of Forestry announced that “to improve the well-being of forest dependent people, a program called ‘social forestry’ will be launched as a national program” (CIFOR, 2002). A national workshop on SF was held the following September, and a working group on SF was established in November. In July of 2003, the president at the time, Soekarnoputri, officially launched SF as an umbrella for the five new priorities of forest policy – ending forest fires, preventing illegal logging, restructuring the forest industry, rehabilitating forests, and the decentralization of forest management (Rusli, 2003). The SF agenda has subsequently been set into legislation by the Ministry of Forestry’s regulation P01Menhut-II/2004 entitled ‘The Empowerment of People Living In and Around Forests through Social Forestry’. This document defines ‘empowering’ as “increasing people’s capacity and self-sufficiency” and SF as a “system of management of forest resources within state forest land which provides opportunities for local people, as the main actors or partners, to become more prosperous and bring about forest protection” (Prakosa, 2004). One of the key clauses states that “no ownership rights will be granted over state forest except the right to utilize forest resources”, which maintains the state’s strict stance on tenure issues and leads one to question the extent to which this policy will depart from earlier forms. Moreover, that clause twelve leaves the articulation of guidelines for the implementation of SF and for granting forest use rights within SF to a separate ministerial regulation leaves a huge

gap of uncertainty regarding whether or not the policy will produce real livelihood impacts for local people.

The Changing Political and Governance Context

The overarching political and governance context fundamentally shapes the nature of policy development and the substance of policy itself. As highlighted above, broader processes of social and political change have dictated priorities for development and determined forms of legitimacy. In terms of understanding the scope of current forest policy and its potential for generating livelihood impacts it is necessary to examine two key factors – the entrenched remnants of ‘New Order’ policy ideology and the post-Soeharto move to reformation.

From 1967 to 1997, the state machinery was defined by highly centralized decision-making and a complete concentration of power driven by the ultimate mandate of achieving economic growth. As agents of the state, forestry bureaucrats were implanted with this creed of central authority to such a degree that any form of non-state forest management involving devolved power was inconceivable (Lindayati, 2002). Foresters not only maintained a staunch belief in the supremacy of top-down forest management and the principles of scientific management, but showed formal contempt for the lifestyles and resource management practices of local people. Given this ingrained ideology, policy and its mechanisms have continually been based upon the premise of excluding local people from forest areas.

The relatively recent shift to reform the foundational structures of a state administration that existed for three decades, and which were based on governance patterns with even deeper historical roots, cannot be expected to easily ‘turn the supertanker’ of fundamental policy orientation and bureaucratic style. At the same time, the transition in national development perspectives towards goals of poverty alleviation and greater local participation, that began even before Soeharto’s departure from government, is absolutely critical in terms of providing an enabling climate for the pursuit of Social Forestry. The key point is to understand that the ingrained characteristics of the Indonesian bureaucracy will not simply be wiped away.

The emphasis that has been placed on decentralization in the reformation political and governance context is a major issue for the current application and future development of SF and PHBM policy. Policy implementation and resultant impacts on local livelihoods depend highly upon the effectiveness of decentralization. This presents a very serious obstacle for SF policy, since the capacity of local government to take on the authority and responsibility required of decentralization is weak due to an historical bureaucratic style that has controlled decision-making at the central level and has limited lower levels to more administrative functions. With the flexible nature of PHBM in particular, so much depends upon the capacity of the district level, as evident (albeit in a very positive way) from the experiences in Kuningan. Thus, the institutional capabilities of district, sub-district, and village government are vital to SF policy.

Key Policy Issues and their Relation to Livelihoods

Objectives and Concepts of Policy

Four main objectives dominate the bulk of policy discourse on forest management around the world and Social Forestry in Java is no exception. The first is a commercial development or economic growth objective, where the production of timber and non-timber biomass is seen as vital to broader national economic development. The second is an ecological and resource conservation objective, encompassing concerns for the maintenance of soil and water regimes and protecting biodiversity. The third objective is the reduction of social tension and conflict between local people and forestry officials, which has been the ongoing outcome of conditions where communities continually attempt to reinstate their customary access rights against the appropriation of these rights by the state (Lindayati, 2002). The final aim is to meet the subsistence and livelihood needs of local people by increasing the share of forest resources allocated to them and the length of their entitlements to those resources (Sunderlin et al, 1990).

The first objective was by far the most dominant goal of Indonesian forest management under the 'New Order' government. In many ways it also dominated initial Social Forestry which, as a response to widespread forest degradation resulting both from the state's extensive 'scientific production' techniques and from the encroachment of local people, represented an inexpensive technical means of reforestation for future timber revenue

gains. Official aims are most often articulated in terms of supporting forest rehabilitation and as such they incorporate strong ecological considerations as well. At the same time, finding a means to appease local people and reduce conflicts where the limited law enforcement capacity of Perhutani has been unable to do so has been another key goal of SF policy. Finally, while the rhetoric of improving local livelihoods has been on the SF agenda from its initial beginning, in practice it has been largely sidelined by the other objectives which took priority for Perhutani. Thus, even though the most recent policy stance promotes the notion that SF provides a “real opportunity to help forest-dependent people improve their lives”, there remains considerable cause for concern as to whether implementation will reflect such intentions (Rusli, 2003).

The incremental transition in objectives toward a greater focus on local participation is mirrored in the underlying concepts that have driven SF policy. In the earliest years, SF was mainly influenced by a ‘poverty reduction-environmental protection’ ethos which argued that to the extent alternative income sources can be found and living standards raised, a reliance on destructive forest use by the rural poor can be minimized (Sunderlin et al, 1990). This largely maintained an exclusionary model of forest management, seeing the diversion of local people to other productive activities as the means of putting an end to what was inevitably their negative and degrading use of forest resources.

Yet increasingly SF policy in Indonesia has adopted the fundamental concept underlying most community-based natural resource management theory – that providing greater rights to natural resources and increasing the participation of resource users in decision-making creates the incentives required for sustainable management and protection of the resource at the local level. Thus, where SF provides households with new tenure rights to manage the forests (but not to own the land), the ability to manage forest activities (albeit on an individual basis and limited to the selection of species to inter-crop with main timber trees), and more secure benefits from resulting resource flows (e.g. commodity outputs from land that has been portioned out to each household), an assumption follows that forests will be managed more sustainably and be much more supportive of local livelihoods. Whether this proves true is very much dependent upon

the precise terms of implementation, specifically whether local people are actually extended secure user rights and afforded a genuine role in decision-making.

One step beyond this emphasis on improving local rights to resource use is the concept of collaborative management which has rapidly grown in policy discourse. As perhaps a more pragmatic model, co-management incorporates an understanding of the divergent interests and claims on any particular resource by multiple stakeholders. Differing demands on resource use must be negotiated by the various actors and institutional arrangements that allow for effective cooperation must be developed. This has become a critical model as it provides a means to reconcile the objectives for forest management discussed above against each other – providing space for articulating the livelihood needs of local people while at the same time considering the objectives of Perhutani.

The primary mechanism for achieving all of the objectives of SF has been the handover of degraded state forest land to individual households via Forest Farmer Groups (KTH). As such, there is a significant potential for inequity in the distribution of plots to particular households in a village, and in practice this often lead to the exclusion of the poor regardless of official guidelines to prioritize their involvement in SF (Sunderlin et al, 1990). Because accessing and managing the state land provided to local people is largely a private affair (each household gains user rights to a specific plot), developing a collective capacity within the newly formed KTHs for broader decision-making and greater local participation has remained minimal. In addition, the institutional capacity of the KTHs is limited by their somewhat artificial nature, having been externally imposed and defined in relation to the resource and not to existing social relations or community structures (Springate-Baginski et al, 2001).

Given that the primary policy driver in the early phase of SF was environmental degradation and that Perhutani staff have always been schooled mainly in a paradigm of productive forestry, the initial approach to SF was highly technical with forestry personnel providing detailed instructions on land preparation (weeding, basic terracing, spacing in re-planting) (Mayers & Vermeulen, 2002). While local people were integrated into forest management activities on state land, in many ways they were simply tools of a planning

and management approach that remained highly centralized. In fact, many continue to argue that the basic model has not changed and that very little sharing of broad decision-making about overall land use or systems of forest governance have evolved (Mayers & Vermeulen, 2002).

However, the emphasis on a more ‘people-centred approach’ by foreign donors, national NGOs, and others has begun to have an impact on state opinions and directions. Under PHBM local people have successfully gained legal entitlements to timber revenues, thus ensuring for themselves more secure livelihood benefits. For their part, the government has made a stronger commitment to empowering local communities through SF and to creating the multi-level integration between national, provincial, district, and local government institutions required for this to be successful (Rusli, 2003).

Livelihood Patterns and their Relationship to Forest Resources

While SF policy increasingly takes on goals of poverty reduction, increasing village incomes, and enhancing the role of local people in all aspects of forest management, the fact that it emerged out of the policy drivers of environmental degradation and social instability means that its overall orientation has very little to do with livelihoods. Nevertheless, its implementation mechanisms have an innate potential to generate significant livelihood impacts, although this is entirely structured by the process of initial land distribution. In other words, how, by whom, and for what underlying reasons land is portioned out determines the resulting livelihood impacts on the local community, as represented by increased natural capital for SF participant households.

Given that access to state forest land has been highly restricted for more than a century, forest-based livelihood patterns in the absence of SF programs actually have very little dependence on forests. This is in fact at the heart of the brutal irony that while highly valuable forest resources have existed within the boundaries of rural communities, they have been of minimal benefit to the livelihoods of local people. Thus, unlike broader ‘Community Forestry’ programs where existing forest uses by various groups become enhanced by greater tenure security, SF in Java can more accurately be considered as a

wholesale injection of a new livelihood activity for those receiving land – the ability to cultivate a newly acquired plot and to generate an income from related production.

While agro-forestry and agriculture on privately owned land continue to be dominant income sources in the livelihoods of the majority of forest-based households in Java, non-agricultural income, particularly from migration and remittances, is increasingly important. Moreover, livelihood diversity has become a fundamental characteristic of rural livelihoods, as individual households have been shown to adopt multiple activities to form their overall livelihood portfolios. In terms of a general picture however, wealthy households commonly have relatively substantial private landholdings, while also engaged in a lucrative non-farm activity such as trading. Medium-class households also generally engage in a mix of activities, but tend to have more limited land sizes and less remunerative non-farm income sources. The poorest households commonly have little or no land and thus depend on insecure and marginally paid activities such as agricultural harvesting, unskilled non-farm labouring, small-scale services, or migration. The poor therefore also have the most to gain from the opportunity to access land through SF.

The Policy Process: A Political Narrative

Formal Roles and Responsibilities of Main Institutions

The basic institutional structure of Perhutani, within which policy development and implementation evolve, remains highly centralized with power and authority concentrated in Jakarta with the Board of Directors, President, and Division Heads. While lower tiers of administration mirror those of the broader political framework in terms of basic levels, they are based on forest areas and are therefore geographically distinct from such units. The provincial level is separated into three Units – East Java, Central Java, and West Java (including the new province of Banten). Each Unit consists of between 20 and 25 ‘Forest Districts’ led by a ‘District Administrator’. Each ‘Forest District’ is divided into 5 to 6 ‘Forest Sub-Districts’ led by an *Asper*, which are further divided into several ‘Police Resorts’ (a collection of 2 to 3 villages) led by a *Mantri* (Forest Guards).

The structure and planning of SF in Java is situated within this institutional framework. At the central level, three external organizations worked directly with Perhutani’s Board of

Directors – the Ford Foundation provided funding and advice; Bina Swadaya, a local NGO, conducted training in community participation techniques; and the Bogor Institute of Agriculture provided expertise in socioeconomic and agro-forestry research. Also at the central level, an SF Working Group was established to set overall policy guidelines and to monitor the progress of the program. At the provincial level, a ‘planning team’ was formed under the Unit Head of the Planning Bureau to identify ‘Forest Districts’ to be included in SF, to assess and rank these according to need and suitability, and to ultimately oversee implementation at the province level through an ‘SF Coordinator’. The criteria used for selecting ‘Forest Districts’ included the amount of degraded forest land, an estimate on how much of this degradation was a result of socio-economic pressure, the willingness of district personnel to participate, and the history of reforestation programs in the area. The final output was an outline of the districts and number of hectares to be scheduled for inclusion in SF in the next 5-year plan.

At the ‘Forest District’ level, a planning committee under the direction of an ‘SF Field Supervisor’ was responsible for implementing the goals set in the 5-year plan. This included making a final decision on which villages would be included in SF, visiting local government personnel at the district level (*Kabupaten*) to seek agreement on the selected villages, and training the relevant Mantri as community organizers. Once Forest Farmer Groups (KTH) were formed, the SF Field Supervisor was responsible for monitoring their success.

The SF program largely bypassed the sub-district level, preferring the management structure to be directly between district personnel and those at the level of ‘Police Resort’ and village. Here a great deal of responsibility fell to the Mantri, who was expected to organize the distribution of land and to subsequently work with local farmers to design and implement land management plans. The essential role provided to these personnel when weighed against their capacity and position has become a key source of criticism in the failure of SF implementation (Fox et al, 1990). First, one must understand that the role of the Mantri has traditionally been one of policing, and they therefore had absolutely no prior experience as social facilitators. Thus regardless of the fact that they received

training on community organization techniques, they simply lacked the capacity to take on their expected role.

The second key weakness is that most Mantri (and the *Mandor* or 'Foremen' below them) are members of the selected communities and thus have specific social ties that influence implementation patterns. Given that all potential livelihood impacts depend solely on how participants are selected to receive land through SF, the fact that a local person with natural bias largely controls distribution can seriously distort the overall intention of the policy. This has been observed where clear implementation guidelines on the prioritization of the poor and landless in SF have failed to take effect where the Mantri has favoured particular individuals or groups (Sunderlin et al, 1990). As members of the community, Mantri also tend to overlook transgressions in order to avoid conflict with their neighbours and maintain a working relationship, which does not always benefit the overall implementation of the policy. Yet Perhutani has widely rejected the notion of non-Perhutani personnel acting as community organizers for fear of allowing an alternative centre of authority, thus limiting the involvement of NGOs that might be much more able to fulfill the role of facilitating and supporting Forest Farmer Groups.

This basic structure of the Social Forestry program as established in the early 1990s has not changed significantly. Weak institutional capacities to implement the full spectrum of policy objectives have only become increasingly worse, as the availability of support staff and training for key personnel has in no way been able to keep pace with the rapid expansion of sites. Overall, SF has been marred by a poor understanding of its purpose and misperceptions regarding implementation procedures on the part of the very personnel who are so key to its ultimate success – district and local Perhutani staff.

Strategies of Implementation

Based on the process of provincial-level selection of 'Forest Districts' and district-level selection of villages, Social Forestry was implemented throughout Java in the late 1980s and into the 1990s through the handover of degraded state forest land to local participant households. Yet since this process involves the transferring of only limited forest 'blocks' ranging from 18 to 35 hectares to a village that may contain up to ten times that amount

of 'production forest', the overall scale of SF in terms of area and households is actually quite low. For example, Mayers and Vermeulen (2002) suggest that in the Kuningan district only 1,000 of a total 39,000 hectares of 'production forest' (2.5%) has been given over to SF. In terms of households, only 5% of the district's total population access state land, although this figure is much higher when narrowing to rural, forest-adjacent villages where a total of 10,000 households from 100 of the 143 forest-dependent communities have become involved in SF and PHBM (LATIN, 2004). However, implementation across districts has been widely uneven and such figures from Kuningan represent some of the best conditions in Java given the external support that has existed there from well-established NGOs like *Lembaga Alam Tropika Indonesia* (LATIN).

On the ground, the implementation procedures of SF begin with the formation of Forest Farmer Groups (KTH) by the Mantri, who received prior training in the techniques of community participation. Each KTH consists of 20 households with one individual delegated as 'team leader'. This group of farmers are given usufruct rights over a defined plot of 5 hectares (0.25 hectares per person). The length of time of such entitlement is often unspecified or at the very least based on oral and informal agreements. Moreover, the relationship between KTHs and Perhutani is rarely formalized by a contract, but rather it is expected to conform to a general set of rights and responsibilities. Perhutani retains the right to determine the overall administration of forest utilization, to organize SF activities together with the KTHs in joint agreement, to terminate assistance to KTHs if they conduct activities contrary to basic rules, and to collect revenues from main timber species, while their responsibilities include facilitating local participation in forest utilization, conducting training, and providing technical assistance. KTHs have the right to acquire a portion of land, to participate in various forest utilization activities, and to receive a portion of the yields from inter-cropped commodities, and the responsibility to manage and coordinate village groups to preserve the forest, to assist forest development and conservation, and to maintain and protect main timber trees for the benefit of Perhutani (Mayers & Vermeulen, 2002). The exception to the rule of informal arrangements is where formal agreements are being drawn up under PHBM.

Following the initial establishment of KTHs, farmers are guided to re-plant their assigned plots with a primary timber species (often teak or mahogany). Perhutani provides these seedlings and gives the farmers very specific instructions regarding spacing requirements. Often the KTH is also paid a minimal lump sum for this work of replanting and Perhutani may supply seedlings of additional leguminous species. KTH members thereafter select and inter-crop other species on their own accord and budget. Most commonly these include annual crops (particularly banana) and large perennial trees. It is expected that when the canopy closes, forest farmers will either derive an income from shade-tolerant crops such as coffee or from the larger species that become part of the canopy itself (Sunderlin et al, 1990).

While fairly rigorous on paper and in overall design, in practice the implementation of SF has involved several key weaknesses. As a program intended to reduce poverty, SF is supposed to follow official 'Guidelines' in prioritizing the involvement of the landless and land-poor. However, the process of becoming a KTH member and thus gaining access to land is fraught with a lack of transparency and equity. With the Mantri and Mandor responsible for participant selection, those with social connections to these individuals are the most likely to be chosen.

Once formed the KTHs were supposed to facilitate extension by providing Perhutani a collective arrangement for providing training and support. Yet Perhutani's commitment to developing the capacity of the KTHs was limited to providing technical instructions and in many cases interaction between the two parties occurred only at the initial allocation of land. Thus, overall the expected potential of KTHs to form an institutional basis for 'bottom-up' planning, to become a forum for problem-solving, and to even take on wider functions such as acting as a savings and loan, never materialized. This is also partly due to the nature of land use under SF, which following the initial allocation of land operates very much according to private arrangements with each household accessing and using a defined plot. Therefore, unlike 'Community Forestry' where a portion of common property is handed over to a group of people for genuine collective management, SF and PHBM function on de facto private entitlements which limit incentives for communal interaction and joint decision-making among KTH members.

Institutional Capacity to Implement Policies

Despite the recent policy shift toward decentralization, both in the wider political environment and within the forestry sector in particular, there remains considerable doubt as to whether or not Perhutani can generate the institutional capacity to successfully implement the strategies of SF. With a 'command and control' system so entrenched in the administrative structure and mindsets of personnel, making the fundamental transition from a policing function to one of facilitation and support has been a slow process. In many ways, poor policy implementation continues to reflect a lack of true commitment by policymakers and Perhutani staff to a process that now seeks to promote local control when only very recently power and authority were so heavily concentrated at the centre.

Under current conditions, institutional capacity is simply insufficient for carrying out the full spectrum of goals that can be expected of SF policy. This particularly worsened as the key support personnel within the province and district could not accommodate the growing number of SF sites under their jurisdiction. The result was that whatever capacity they held themselves was not transferred to the field staff, who are the lead personnel in practical implementation. Thus the capacity of Mantri and Mandor officials to achieve all that is required of them in SF, including forming KTH groups, raising the awareness of participants regarding their rights and responsibilities in the program, and supporting their ongoing development, is inadequate.

In addition to their limited capacity, the front-line workers lack incentives for improving the quality of their interaction with and support for local people, as established by upper levels of government. Perhutani field staff have been successful in meeting targets to survey and distribute certain amounts of land according to the basic guidelines of group formation and so on, but beyond this there are few motivations or directives that would make them accountable for ensuring the quality of subsequent support, leading in many cases to a total absence of post-allocation interaction with KTHs. As a product of this poor communication, local people suffer from ignorance about the nature of SF partnerships and the opportunities it might offer.

In an ideal sense, a recommendation may follow that a concerted effort needs to be put forward to raising the awareness of local people regarding the potential benefits they may gain in SF and PHBM (including the development of formal agreements and receiving revenue shares from timber), which could then lead to a situation where Perhutani support is delivered on the basis of local need and demand. However, the probability of this strategy is challenged by Perhutani's continued reluctance to in practice start down the path of handing over their authority to the local level. Broad policy stances certainly are becoming more supportive of 'empowerment' and they are setting terms by which local people can officially gain greater economic benefits from forest land and make decisions over its management, but on the ground Perhutani staff are not necessarily motivated to take independent initiative to devolve their control.

Livelihood Analysis

True to the essential aim of the current research, the paper now turns to making linkages between wider policy processes and the micro realities of local livelihoods within a case study community. Thus the following section reports on the qualitative and quantitative findings that emerged from the fieldwork methodology implemented in Saninten village. The livelihoods model provides the conceptual foundation for several indicators of policy impact measured by the research. As a critical change within the 'external institutional context', the starting point for intervention in the model is taken to be Social Forestry and related policy which defined new mandates and mechanisms for the state forestry corporation and altered arrangements regarding local access to state-owned forest land. While such a change has not gone so far as to define a new legal context in terms of the creation of new laws of tenure or access rights, the policy and its implementation, discussed extensively above, have certainly generated multiple ripple effects on the livelihoods of many rural Indonesians. The analysis considers such effects through the indicator categories of access and entitlements to natural capital, local institutions and social capital, the local resource base, and livelihood activities and incomes.

Increasing Access and Entitlements to Natural Capital

The most immediate impact of Social Forestry (SF) policy and its implementation mechanism of sanctioning local use of state-owned land is a direct increase in the access of individual households to the natural capital of forest land. Such a rise in what is an essential building block for the livelihoods of rural people has significant implications for potential activities and incomes, as will be discussed below, and the overall ability of households to construct routes out of poverty and to reduce their vulnerability (Moser, 1998; Ellis & Bahiigwa, 2001). Furthermore, as representative of the core poverty reduction objective of Social Forestry, the aim of opening new access to forest land must be empirically tested to measure the real achievements of the policy.

While the transferring of usership rights over ¼-hectare plots of land to local households is easily conceptualized as a direct increase in natural capital and answers the basic ‘what’ of the implementation process, the critical questions are how this actually unfolded in terms of who gained access and the scale of the impact. In Saninten, SF was not implemented until 1997, when Perhutani, through its local Mandor, communicated to certain individuals that a limited amount of forest land would be made available for local use. This news was then selectively spread through the village and an informal registration was taken orally by a village representative. Perhutani subsequently announced that they would hold a distribution day when 14 hectares of forest land would be allocated to interested individuals. On the day, many people came to measure and mark the land along with Perhutani, but only 56 persons ultimately received access to land (on a first-come first-served basis), with four persons each managing one hectare. As required, the recipients were formed into three Forest Farmer Groups (KTH – *Kelompok Tani Hutan*) and each appointed a leader to represent the group in their contact with Perhutani. Farmers were later supplied mahogany seedlings and informed of spacing requirements for re-planting, and were told that they were then free to cultivate crops in between these main species. The same basic process of land distribution repeated itself in 1998 with an additional 6 hectares, creating a fourth KTH and bringing the total number of households with access to ‘Perhutani land’ to 80.

While the granting of land access thus appears to have been relatively open and equitable, there are several key factors that intervened on this process. First is the importance of social relationships, as the research revealed that the crucial stage of informing village members about the program was done between family – from the Mandor, Perhutani's local representative, to his brother, a respected figure among farmers who resides in Kampung Salam. The farmers' representative subsequently communicated the message orally, primarily to friends, family, and fellow Kampung members. Second is the location of the household, as those furthest from the opened forest land were unlikely to be interested in the new access due to the distance they would have to travel to maintain the land. Together these two factors account for the initial distribution of the first 80 households, estimated as follows: 60% from Salam, 20% from Malang and Malangsari, 18% from Sukamanah, and 2% from Campaka. The majority to have thus gained access came from Kampung Salam, being socially closest to the farmers' representative and physically closest to the actual forest land. Similar and more extreme concerns for the social equity of participant selection in Social Forestry have been investigated in other cases where it was found that the mandate to prioritize involvement of landless and poor households failed to be implemented, due to a lack of incentives and regulations for field personnel to follow the mandate, their inadequate knowledge of the aim, or simply their disregard for its purpose (Sunderlin et al, 1990).

As understood from qualitative data collected at the micro level, the implementation of the central Social Forestry mechanism of distributing forest land therefore lacked a measure of institutional capacity in terms of ensuring a genuinely equitable and poverty-focused process, which in turn can be reflected to the macro issues of policy implementation and the development that preceded it. Specifically, a heavy reliance on the capacity of local Mandors to implement such a critical activity as initial land distribution, when they had not received adequate training and had previously been accustomed only to policing duties, significantly altered the nature of policy impact. Nevertheless, despite the fact that this implementation phase appeared to function under largely informal terms, findings suggest that within the Saninten context it generated profound achievements in targeting the poor and landless. Among the random sample of households accessing land through SF, 71% would have been considered 'poor' at the

time of their initial receipt of land, while 64% were previously completely landless and a further 14% had only minimal private land (0.15 hectares). With limited to no land, these households were entirely dependent on local labouring or migration activities. Thus, the increase in natural capital resulting from SF has created a fundamental change in their ability to pursue agro-forestry activities and to enhance their livelihoods.

While SF implementation in Saninten was therefore clearly effective in focusing upon poor and landless households, it is useful to consider the overall impact of increased land access at the community level, particularly relative to private land ownership. For the sample as a whole, 22.5% of households are landless and 50% access less than 0.25 hectares (Table 1). While constrained access is similar for all land use systems, private land ownership generally involves larger plot sizes (average of 0.685 hectares per household) while SF cultivation is centred on a mode of 0.25 hectares, as initially distributed, with only three households having expanded their original SF land size by taking over adjacent plots. Since households often combine multiple land use systems, it is useful to consider a broad picture of land access profiles, which reveals that 40% of households have some degree of access to private land, 35% access SF land, and 25% engage in sharecropping (Figure 5). Thus, it is clear that SF implementation has had a definite and significant impact on the amount of natural capital available to local households. In fact, based on the random sample a full quarter of all land area currently accessed in Saninten is Social Forestry land and the 'poor', as defined by a categorization of total annual incomes, access the greatest percentage of this land (Table 2). At the same time, the fact that after having accessed SF land since 1997 these households remain 'poor' suggests something about the land's ability to actually generate an income, which is examined below.

While access has clearly expanded, gaining entitlements to forest land in terms of greater security of user and tenure rights has been far more elusive. While other forest-based communities in Java have been successful at signing formal agreements with Perhutani to regulate the conditions whereby joint management will proceed, this is not the case in Saninten. Terms of use remain highly informal, including the length of time households will be able to access SF land and the rules governing the sharing of outputs

Table 1. Household Distribution by Land Accessed

Area Accessed	private land (%)	SF land (%)	sharecropping (%)	Total Land (%)
None	60	65	75	22.5
0.25 ha or less	10	27.5	10	27.5
0.26 – 0.50 ha	10	2.5	10	15
0.51 – 1 ha	12.5	5	2.5	25
more than 1 ha	7.5	0	2.5	10
TOTAL	100	100	100	100

Figure 5. Household Distribution by Land Use Systems

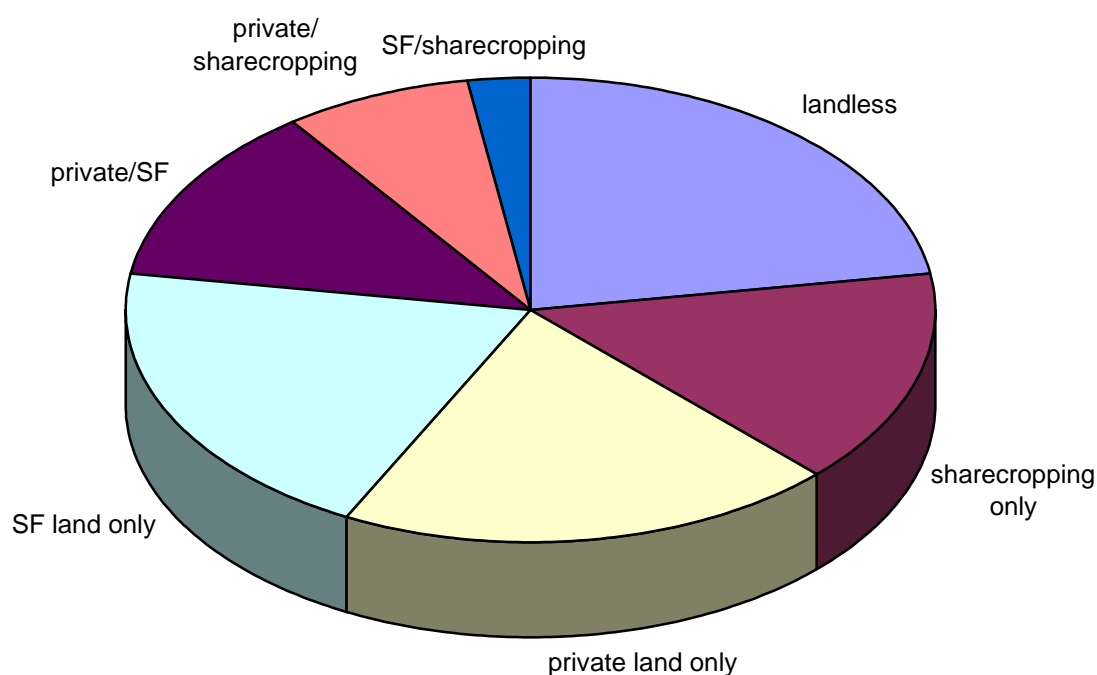


Table 2. Mean Land Accessed (ha) by Income Category

Land Use System		'poor' (n = 21)	'middle' (n = 14)	'wealthy' (n = 4)	Total
private land	mean	0.068	0.350	0.986	0.264
	<i>total ha</i>	<i>1.43</i>	<i>4.90</i>	<i>3.95</i>	<i>10.28</i>
SF land	mean	0.167	0.071	0.188	0.135
	<i>total ha</i>	<i>3.50</i>	<i>1.00</i>	<i>0.75</i>	<i>5.25</i>
sharecropping	mean	0.065	0.286	0.000	0.137
	<i>total ha</i>	<i>1.36</i>	<i>4.00</i>	<i>0.00</i>	<i>5.36</i>
all land types	mean	0.300	0.707	1.174	0.536
	<i>total ha</i>	<i>6.29</i>	<i>9.90</i>	<i>4.70</i>	<i>20.89</i>

between Perhutani and farmers. Opinions regarding tenure security over SF land reveal an interesting dichotomy in the perspective of forest-farmers. On the one hand, the majority confidently expressed that they expect to access and utilize the land for the rest of their lifetime. At the same time, these households showed varying levels of concern that perhaps the terms of use might become overly constrained or that Perhutani might someday force them off the land. Building genuine tenure security into SF policy is therefore essential. However, as evident from the policy analysis, Perhutani continues to resist this step as overly radical. Certainly Perhutani has articulated a stance on improving livelihoods, but actually forfeiting ownership rights is beyond what they consider necessary to achieve this goal and is still far too extreme for a management approach that continues to be highly influenced by strategies of central control.

Creating Local Institutions and Enhancing Social Capital

Tracing the changes brought about by SF policy through the livelihoods model, an immediate effect was generated for the 'local social and institutional context' with the creation of Forest Farmer Groups (KTHs) and the subsequent influence this had upon the availability of social capital for local households. As another specific objective of SF implementation, the formation and functioning of these groups should be assessed for their quantity and quality. In particular, it was critical to understand from a local level the effect of these new institutions on livelihoods, participation and representation in the groups, and their overall capacity.

The four KTHs in Saninten were originally formed in 1997 and 1998 as per the requirements of land distribution under SF. The purpose of the groups was to collectively manage the portion of SF land allotted to them with each group consisting of 20 members utilizing five hectares ($\frac{1}{4}$ hectare per farmer) and headed by an elected leader. The groups subsequently became the primary institutional means for farmers to support themselves in their livelihood activity of cultivating SF land. In terms of this aim, forest-farmers consider their relevant KTH very important as a means of collective action in their advocacy and relationships with Perhutani. In particular, they rely on and often defer to the group and its leadership for its critical organizational capital in negotiating agreements with Perhutani.

Yet the KTHs face several fundamental weaknesses that obstruct the development of their full potential as a source of social capital. The initial development of SF policy was largely influenced by donor pressure from the Ford Foundation, who at the time were also involved in similar programs in India, Philippines, Thailand, Bangladesh and China (Ford Foundation, 1998). The key difference between such 'Community Forestry' (CF) initiatives and the Social Forestry program in Java was that the former dealt primarily with forests that were to be opened as a genuinely common property resource, whereas the latter distributed plots of land under de facto private terms. The forest users groups created under CF were therefore intended to be highly inclusive of all households utilizing the common property, and as such would demand collectivity and participation in management systems. The superimposing of a user group requirement on SF simply did not generate the same incentives for mutual collaboration in new local institutions as households essentially managed their own defined plot of land independently. This was clearly reflected in fieldwork findings where the interaction between KTH members and the overall level of activities of the groups were largely minimal.

In addition to a lack of incentives, the KTHs face significant challenges achieving what might be expected of them. Ideally, the groups would become an organizational focal point for the empowerment of local people in forest management and could strongly represent the interests of farmers in their joint interactions with government agencies. As such, the creation of these local institutions could translate into real social capital gains in terms of directly protecting and enhancing the activity of agro-forestry on SF land. However, while members articulate their reliance on the KTHs for this purpose, the groups simply lack the capacity to engage in negotiations and collaborative management structures on an equal footing with Perhutani in order to realize the ultimate livelihood benefits of greater tenure security and profit-sharing. Thus, the continued support of external organizations, such as NGOs like LATIN, is essential to building institutional capacity at the local level for these long-term objectives.

Improving the Local Resource Base

Fundamentally driven by a crisis of forest degradation, SF policy has always had a primary objective of regenerating the quality of the forest resource base. In Saninten, as

across Java, major sections of state-owned forest land had become largely barren due to the widespread extraction of the main tree species of mahogany. Local perspectives suggest that such ecological damage also had ripple effects upon water supply and soil erosion. Thus, the concerted re-planting of tree seedlings under SF was intended to improve forest conditions. While a detailed technical assessment of the success of this process is beyond the scope of this research, local accounts and direct observation confirm that this aim certainly has been achieved to a substantial degree. The blocks of SF land have been completely re-planted with mahogany and a wide variety of other commodities by the forest-farmers. Only time will tell how the sustainability of natural resource use will be maintained under the institutional arrangements of Social Forestry.

As described above, the local resource base as represented in the livelihoods model incorporates not only natural components but social and human factors as well. In developing local institutions, SF does have the potential to expand the social resource base of the community as a whole if and when the KTH groups can carry their activities further than forest management to include organizational support for other initiatives. In Saninten, social and organizational resources are in fact expanding, but only as a loose and indirect implication of SF. The process is occurring where a key NGO, LATIN, whose primary focus is facilitating joint forest governance, is also engaged in broader community-based planning and is helping to build other institutions such as the *Forum Pemerhati Hutan Desa Saninten* (Village Forest Observer Forum), which is working to support small-scale producer groups, to revitalize a local co-operative, to coordinate water source rehabilitation, and to mediate disputes over water use with neighbouring villages. Perhaps a key lesson is that positive involvement of external agencies sparked by concerns for SF can create synergies that spread to the village as a whole.

Expanding Livelihood Activity Opportunities and Raising Incomes

The significant increases in natural capital availability resulting from the implementation of Social Forestry had a very clear and direct impact on the activities of participant households by providing them the option to engage in own-account agro-forestry production, many for the first time. Cultivating commodities on SF land subsequently generated household incomes from either the cash sale of crop outputs or their

subsistence consumption. Empirical analysis of the scale and nature of these results is therefore essential to providing a real understanding of the very practical aspects of poverty reduction and the base impacts of Social Forestry policy.

Whereas SF land currently accounts for one quarter of all natural capital accessed by Saninten households through three land use systems, it generates only 12% of total village agro-forestry incomes (Figure 6). This difference symbolizes the constrained productivity of SF land relative to private land, which is fairly easy to explain given the stages of agro-forestry development and corresponding crop combinations. Social Forestry land, which was barren only 7 to 8 years ago, is at a very early stage earning income from only four commodities that mature to productive ability in relatively short time periods, while various other species remain as seedlings. On the other hand, private land cultivation tends to involve an advanced stage of agro-forestry with many mature trees and diversified commodities. Thus, on a per hectare basis, the cultivation of large trees that produce abundant outputs of high market value (particularly durian, *petai*, and cloves) on private land is highly profitable, while production on SF land remains largely confined to bananas which on their own do not produce overall substantial incomes (Table 3). SF land is further constrained by the presence of numerous mahogany trees, which greatly restrict the available space for cropping.

As briefly described above, data on annual incomes collected in the household survey allowed the research to determine several income categories as a means of comparing activity combinations across relative wealth. The 'poor' dominate the distribution of households with 54%, followed by 'middle' at 36%, and a small number of 'wealthy' (Figure 7). Among such categories, the 'poor' earn the greatest percentage of their total annual incomes from SF land. However, the overall percent figure is quite low at 11%, compared to a heavy dependence on marginal local non-farm activities (harvesting, tree cutting, services, and door-to-door petty trading) and migration (Table 4). 'Middle' households earn only 5% of their income from SF land, instead utilizing their greater private land ownership to earn 30% of their income, while also engaging in similarly diverse non-farm options. The cultivation of SF land contributes only 2% to the incomes of 'wealthy' households, as they earn significant amounts from trading and local industry.

Figure 6. Total Village Agro-forestry Income by Land Use System

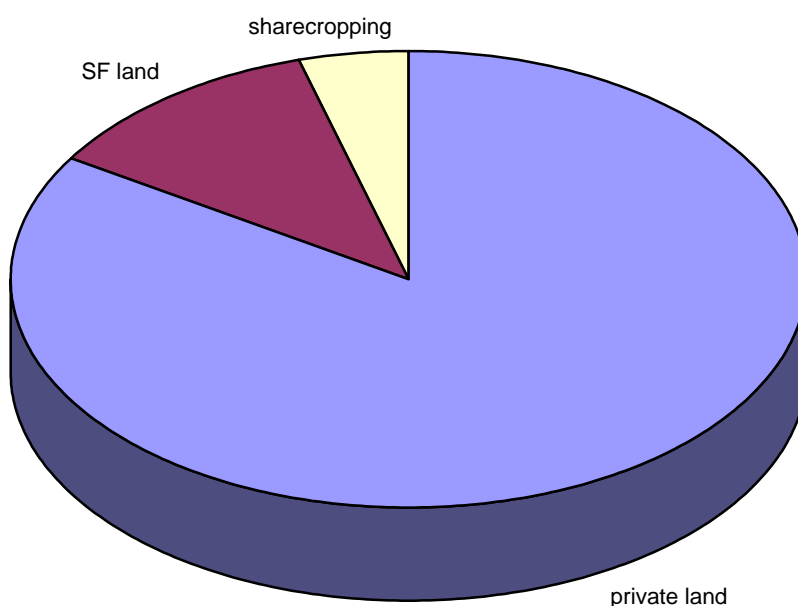


Table 3. Agro-forestry Income per Hectare by Commodity and Land Use System

Commodity		private land	SF land
banana	mean income/ha	1,607,007	2,212,571
	<i>total ha</i>	10.275	5.25
coconut	mean income/ha	913,199	-
	<i>total ha</i>	8.41	-
coffee	mean income/ha	232,528	352,000
	<i>total ha</i>	7.66	3.50
durian	mean income/ha	1,963,945	-
	<i>total ha</i>	9.43	-
melinjo	mean income/ha	793,354	160,000
	<i>total ha</i>	9.63	1.00
petai	mean income/ha	2,272,727	-
	<i>total ha</i>	9.13	-
cloves	mean income/ha	1,823,592	-
	<i>total ha</i>	9.41	-
cassava	mean income/ha	271,739	-
	<i>total ha</i>	4.60	-
timber	mean income/ha	1,066,901	-
	<i>total ha</i>	5.68	-
avocado	mean income/ha	-	200,000
	<i>total ha</i>	-	3.00
TOTAL	mean income/ha	9,486,089	2,592,000
	<i>total ha</i>	10.28	5.25

Figure 7. Household Distribution by Income Category

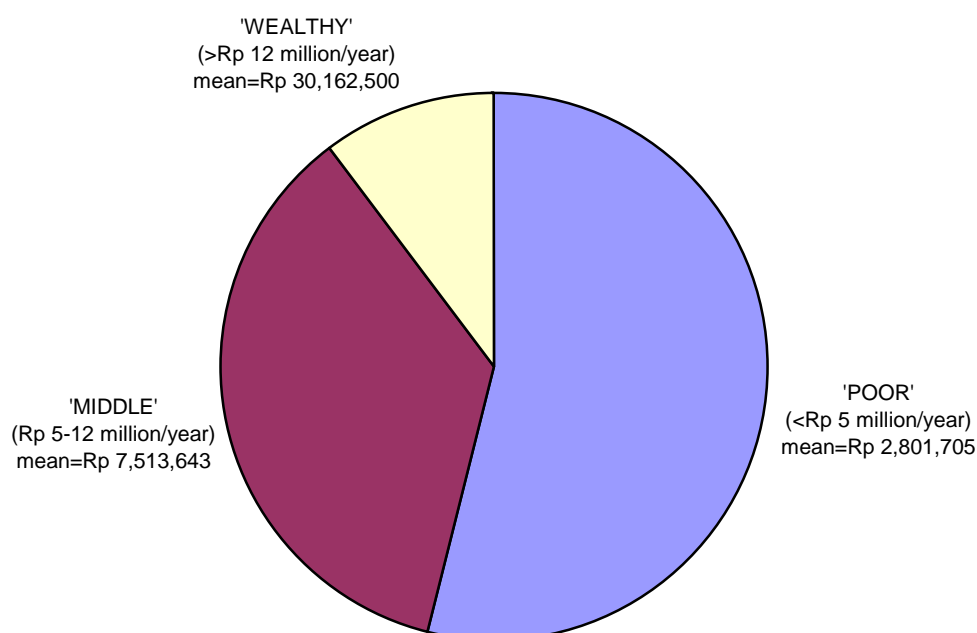


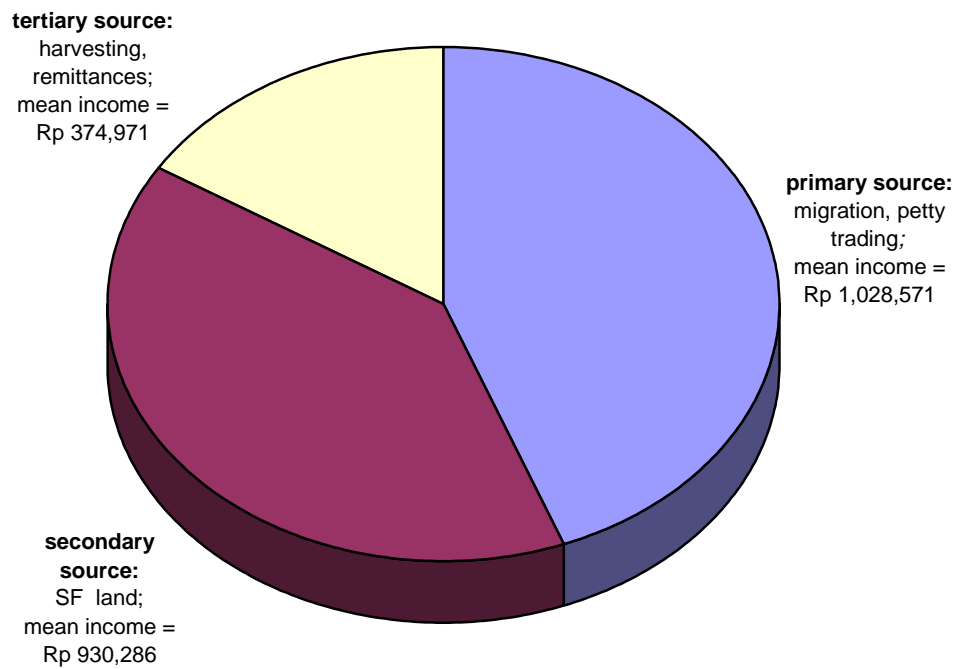
Table 4. Percent of Total Income by Livelihood Activity and Income Category

Livelihood Activity	'poor' (54% of pop.)	'middle' (36% of pop.)	'wealthy' (10% of pop.)
SF land	11%	5%	2%
private land	13%	30%	48%
sharecropping	5%	2%	-
other NR-based	-	4%	-
harvesting	6%	-	-
tree cutting	8%	5%	-
ag'l trading (minor)	4%	-	-
ag'l trading (major)	-	-	29%
construction	9%	12%	-
service	11%	4%	-
door-to-door trading	11%	4%	-
shop-keeping	-	8%	2%
army pension	-	5%	-
local industry	-	-	17%
migration	19%	20%	-
remittances	3%	1%	2%

While the contribution of income derived from Social Forestry land thus appears to be relatively minimal, it is critical to think of the conditions that otherwise existed prior to the implementation of the policy. In this sense, the quantitative findings can be interpreted to

conclude that Social Forestry has actually led to an injection of 51,840,000 rupiah per year for the village as a whole, the majority of which accrues to poor households. In more defined terms, the income benefits from SF land can be narrowed down to a particular segment of the community. To represent similar combinations of three to four activities conducted by an individual household, the research generated a series of livelihood portfolio typologies. Among the six typologies established, a key category of ‘poor SF land and non-farm’ households emerged to encompass nearly one fifth of the population (18%). Prior to SF, all of these households were completely landless, relying instead upon local non-farm and migration activities. Access to natural capital through SF has allowed them to reduce such activities to a degree, although they still rely on them for 44% of their yearly income, while concurrently allowing the incorporation of new agro-forestry incomes to make up another 40% (Figure 8). Thus for this key target group, the activity of cultivating SF land has become absolutely critical for their total incomes. Given that this group is also the poorest in the village, earning only 2,333,829 rupiah annually per household, the future success and security of land tenureship and income generation from SF land is therefore fundamental to wider poverty reduction.

Figure 8. Livelihood Activity Portfolio of “Poor SF Land + Non-farm” Households



Several key factors will mediate the future profitability potential of SF land cultivation and its attendant ability to provide the means for poor households to construct pathways out of poverty. First and foremost is the development of the agro-forestry system beyond its current early stage. Given the significant number of pre-productive seedlings planted by forest-farmers, average incomes from SF land are sure to increase as the trees mature. Indeed, it is the expectation of all forest-farmers that their agro-forestry incomes from SF land will continue to expand based on their labour and financial investments, and simply with time. Comparing the mean income per hectare of private and SF land clearly reveals that the latter has vast growth potential. At the same time, it is important to remember that the SF land system will never fully equate with private production as it will always be limited by the high density of mahogany trees. Moreover, as these and other large trees grow, the shade conditions caused by canopy closure will greatly restrict banana cultivation, thus shifting the entire farming system. Sophisticated modelling of such transitions and their effect on agro-forestry incomes is beyond the scope of this research. Nevertheless, based on local accounts of farming strategies, it is fair to say that the goal is to mirror the more profitable system that prevails on private land.

The other key factor that will affect total incomes earned from SF land is the terms of profit-sharing with Perhutani, which currently function under highly flexible conditions. Approximately one third of the forest-farmer households reported having made a minimal contribution of crop outputs to Perhutani through informal transactions, while the other households understand this as a potential and are willing to share a percentage of their yields if asked, but they have not yet done so. The majority of SF land users expect more formal terms of profit-sharing to eventually be determined and enforced, and within that process they of course wish to see the greatest proportion of income flow to themselves. However, this remains uncertain and thus significantly contributes to the overall vulnerability of poor households, particularly those who have come to depend highly upon SF land for their total income. Ensuring the income security of these households by achieving fair and equitable terms of profit-sharing is therefore essential. This in turn requires considerable capacity on the part of local people to engage in negotiations with Perhutani and to ultimately work jointly with them to build the institutional basis for genuine collaborative management.

Synthesis and Policy Inferences

The key aim of this paper is to make the links between a macro level natural resource policy concerning forest management in Java, Indonesia and micro level impacts on the livelihoods of the rural poor. The central question that must be answered is thus whether or not the development and implementation of Social Forestry policy has provided the means for poor households to enhance their resilience and livelihood security, and to what extent these changes have occurred. The following section synthesizes the findings of this research related to its attempt to respond to this question and makes inferences regarding potential policy reform options for further bolstering local access to livelihood assets and reducing vulnerability.

Social Forestry's fundamental implementation mechanism of handing over state-owned forest land to local people under terms of usufruct rights clearly generated critical impacts on access to natural capital for selected participants. Moreover, within the community of Saninten, this process was highly successful in providing land access to those who previously had been completely landless and consequently also poor. Given the clear relationship between land access and wealth (see Table 2 above), these achievements are therefore essential to broader poverty reduction. That is not to diminish another key finding of the research that non-farm income sources are highly important, contributing 58% of total village income generation and making up more than half the annual incomes of all wealth categories. Nevertheless, land access continues to be a core building block for the livelihoods of forest-based people.

Opening land access through Social Forestry subsequently expanded the livelihood activity opportunities of participant households. For many, the incorporation of a newfound agro-forestry activity concurrently facilitated the reduction of marginal non-farm activities such as harvesting and migration. While at present the income productivity of SF land continues to be restrained by its early stage of agro-forestry development, its future growth potential is significant. Again, this is particularly important in terms of reducing rural poverty as it is the 'poor' in general (54% of the population), and a

particular sub-set of those households, that have the highest dependence on SF land and thus have the most to gain.

Yet above these significant benefits that Social Forestry has been able to achieve looms an uncertainty that serves to maintain a measure of vulnerability for participant households. Drawing upon concepts within the Livelihood Model, SF in Java has fundamentally altered the external policy context, but has not done the same for the legal context. As such, access to land functions without adequate tenure security and uncertain terms of profit-sharing pose a risk to income security. Against these threats is a strong desire on the part of local people for more formal agreements with Perhutani. In the context of PHBM, a precedent has been set in the Kuningan district where the process of acquiring such contracts has occurred, although it continues to be limited to a relatively small scale. The key for local livelihoods is to limit the vulnerability associated with cultivating SF land. First, this means extending greater tenure in terms of either permanent user rights or assurances of long-term access, which is particularly critical to an agro-forestry system that demands extensive time horizons for investments in seedlings and land maintenance to come to fruition. Second, fair and equitable terms of profit-sharing must be established to reduce any vulnerability to the potential siphoning off of crop yields by informal systems of Perhutani's local agencies. A critical aspect of this issue will be whether or not local people can negotiate a share of timber revenues from the main species that are currently considered the property of Perhutani, as with their maturity these will become a tremendous source of income.

This goal of changing the macro legal context of Social Forestry in order to reduce the micro vulnerability of local livelihoods is an immense challenge. Understanding its feasibility requires reflection on the development of SF policy. As discussed above, the primary driver of SF policy involved a crisis of concerns for environmental degradation. The implementation of Social Forestry thus provided a tool for reforestation, which has been largely successful. That such a need therefore no longer exists means that the state necessarily lacks the incentives to maintain local access for this particular policy objective. This is further set against a recent shift to even greater environmental protectionism, where continued local access could likely be perceived as contradictory to

a central call for greater ‘breathing space’ for forests. Advocating for the sustainability of natural resource use when under local control will therefore be essential.

Another major obstacle to shifting macro perspectives for the ultimate benefit of micro realities involves the policy objective of utilizing forest resources for national economic development and the bureaucratic structure that continues to lie behind that aim. Forests are regarded as a vital source of revenue for the state, and even more so as their potential grows with regeneration. Moreover, the bureaucratic momentum that has only recently begun to retract from a staunch centralized approach strongly resists the transferring of management authority to local people. This is clearly evident from the most recent policy document on empowering people through Social Forestry, which states under clause eight that “no ownership rights are to be granted over state forest land; except the right to utilize forest resources” (Prakosa, 2004). Thus, while local participation in forest management develops and evolves, the key issue of tenure security continues to be opposed.

In a context where policy influences, drivers, and objectives are highly diverse, the commitment to implement Social Forestry in a way that prioritizes local livelihood impacts is necessarily divergent. In many ways this is reflected in the institutional capacity associated with the implementation process, where tremendous responsibility has been placed upon local Perhutani personnel to create and support forest-farmer groups (KTHs) without adequate training. Accustomed to administrative or policing roles, these local agents are simply unable to provide the necessary support to KTHs. In fact, an odd irony emerges in the relationship between local Perhutani staff and KTH groups, wherein the latter require assistance to build the organizational and negotiation capacities to engage with the former, but Perhutani lacks the incentives to undertake such capacity building as it could mean a loss of their own authority. Thus, forest-farmer groups have largely remained institutionally weak, and unable to engage in a process whereby they might attain greater security through formal agreements. Compounding this problem is the lack of incentives for collective action on the part of forest-farmers themselves, as the cultivation of Social Forestry land functions under de facto private access. The role of external NGOs in this context becomes essential, as a third party with the ability to

facilitate the development of local institutions so that they can play a major role in advocating for their rights and objectives and to concurrently enhance the social capital of relevant households.

Above all, the linking of broad policy to the livelihoods of the rural poor signals a need for a long-term commitment to developing the institutional basis of genuine collaborative management of forest resources between Perhutani and local people. In a very real way, this paper has established how the macro level of Social Forestry policy impacted the micro realities of local livelihoods. Reforming macro policy toward a more livelihoods-centred approach, based on learning from the ground as attempted in this research, can clearly enhance and improve the enabling environment for rural poverty reduction. Continued evolution of SF policy toward greater sharing of management responsibilities with local stakeholders holds great potential for reducing the vulnerability of the rural poor through ensuring their access to natural capital and enhancing their income security.

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