

**Links between forests and poverty in Indonesia. What evidence?  
How can targeting of poverty in and near forests be improved?**

**CESS-ODI Briefing Paper II, March 2005**

**Summary**

- Available data of forests and poverty in Indonesia suffers from weak sampling in remote areas, lack of detail on the support that households derive from forests (particularly subsistence), as well as use of culturally inappropriate indicators.
- However, with available data, it is still possible to show that villages and households in and near forests tend to be worse off, in income- and non-income terms. Rural households below the poverty line are more dependent on forest income than those above.
- Poverty reduction programmes in Indonesia do not clearly differentiate approaches to tackling chronic rural poverty. The overall objectives are usually “empowerment of target groups” or “increasing income of target groups”, but these are not quantified, and data collection on target group impact is limited.
- Programmes within the forestry sector, lack meaningful impact because the Ministry has neither the expertise nor the mandate for poverty reduction. Interests in conservation, and production often override the livelihood needs of local people.
- Interventions such as community-based forest management are designed to address all local stakeholders, so specific targeting of poor and vulnerable groups (including differentiated incentives) is often weak. Rehabilitation schemes are often weak in their understanding of how farmers can undertake tree-planting which benefits them as well as the degraded land to be reforested.
- Ways forward include enhancing the representation of remote areas and forest content in national data collection, poverty mapping to assist targeting at kabupaten or watershed levels, as well as greater use of participatory assessment to understand poverty and vulnerability in different contexts, and the role of forests in poor peoples’ livelihood strategies.
- Participatory approaches to identifying the poor will vary from area to area, depending on local culture and livelihoods systems. In some cases formal wealth ranking is appropriate (e.g. where inequality is high). In most areas, poverty and vulnerability need also to be understood in a more embedded way, in terms of secure access and control over land and natural resources.
- Implications for forest policy include reforms to spatial planning, differentiated management criteria and accessible decision-making structures.

**1. Links between forests and poverty**

*a. How much evidence is there already? - the Literature*

Many people observe an apparent link between forest and poverty, but it can be relatively difficult to gather strong data to support this observation. Various studies also mention the high numbers of poor people in forest areas without pointing to empirical evidence. Studies that have tried to show a link between poverty and forest in Indonesia include:

Brown (2004)<sup>1</sup> who analysed numbers of people living in the national forest estate in Indonesia and, of these, numbers who are

poor. The unit of analysis is the province. The analysis shows that there are 48.8 million people living in the national forest estate, of whom 9.5 million are poor. Meanwhile across Indonesia, only 27.1 million people live on land still with tree cover (much forest-estate land is treeless). Of these, 5.5 million are poor.

Sunderlin, et. al. (2000)<sup>2</sup> argue that there are around 20 million people living in and near forests areas in Indonesia, of whom around 6 million depend on forest resources.

*b. Results from analysis by CESS*

The limited availability of data showing the link between poverty and forests constitutes the

main obstacle. This reflects lack of government attention to the poor in forest areas, as is evident from the failure to accommodate poverty in forest areas within the National Strategy for Poverty Reduction (SNPK).

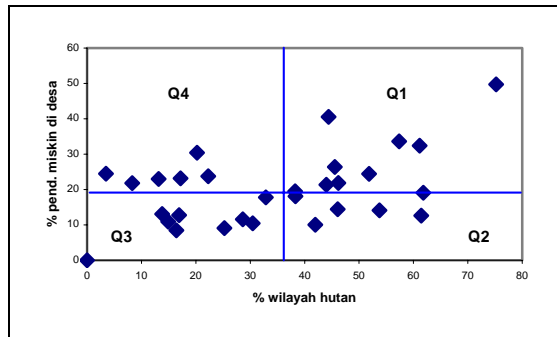
CESS-ODI, using formal national data, have therefore attempted to analyse and understand further the link between forests and poverty in Indonesia (Seldadyo, 2003; Bachtiar et al, 2004)<sup>3</sup>.

### 1) Correlating rural poverty with forest area

Variables used are percentage rural poverty versus percentage forest cover, by province.

Although there is a weak overall correlation between rural poverty and forest cover, the correlation is most strongly seen in provinces with high forest cover and high rural poverty (0.77) [Quadrant 1], and provinces with low forest cover and low rural poverty (0.72) [Quadrant 2].<sup>4</sup> However, other data are needed to clarify the cause-and-effect relationship between poverty and forest.

The correlation between rural poverty and forest cover, by province (2003)



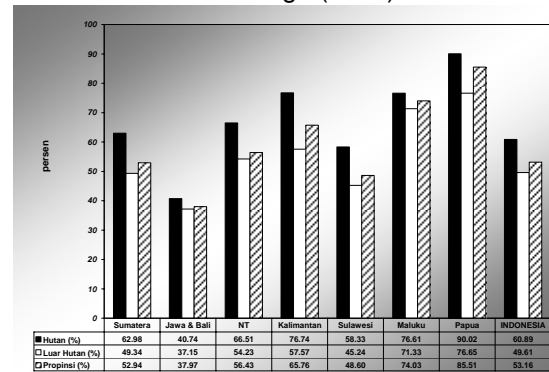
	% Wilayah Hutan	% Pend. Miskin di Desa		% Forest Coverage
MEDIAN	35.56	19.30	% Rural Poverty	0.473 (Pearson Corr)

### 2) Poor villages and forests: infrastructure and services

Here, 2003 Village Potential Data (Podes) from the Central Statistic Agency (BPS), is used. Indicators include availability of: transport, electricity, telephone, education, health, garbage disposal, markets and formal credit institutions. The 2003 Podes data allows these variable to be disaggregated and scored according to whether villages are in/ near forests, or far from forests. The analysis shows

that villages in and near forest areas are worse off in terms of available infrastructure compared to those not close to forests and the provincial average, and therefore poorer. This data covers some 68,816 villages across the country.

Poor villages according to the availability of infrastructure, comparing villages inside and outside forest areas, and the provincial average (2003)



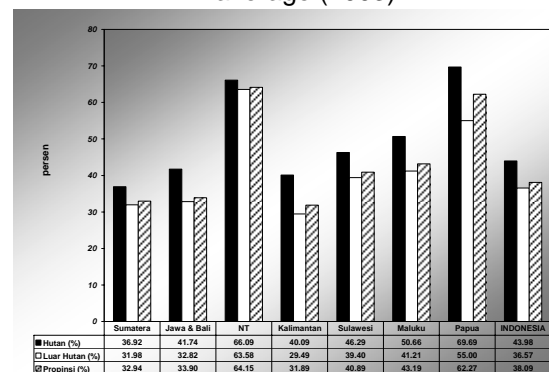
### 3) Poor households and forests: non-income variables

Here, 2003 Podes data from BPS is integrated with , as well as 2003 data from the Family Planning Agency (BKKBN) is used. Podes data is disaggregated according to location (in/near and far from forest areas) and then integrated with BKKBN data on “pre-welfare” and “welfare I” households. This data covers 50,152,320 households across the country.

The results of this analysis are as follows:

- The percentage of poor households in villages in and near forests is greater than that for villages far from forests.
- This pattern is repeated across all areas, including Java.

Percentage of poor households according to BKKBN criteria, comparing villages inside and outside forest areas, and the provincial average (2003)

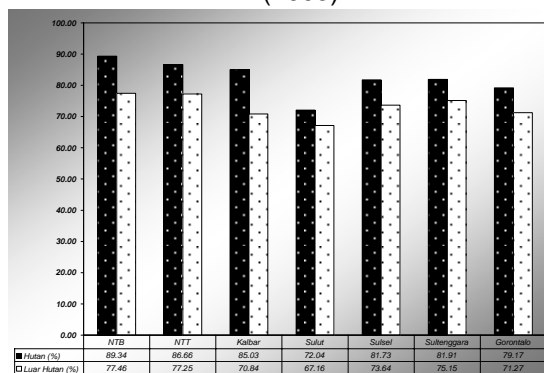


#### 4) Poor households and forests: income variables

Here Podes (2003) and 2002 National Socio-Economic Survey (Susenas) data from BPS is used. Podes data is disaggregated according to location (in/near and far from forest areas) and then integrated with Susenas data (poor households according to the provincial poverty line). Due to a limited research budget, this analysis only covers 43,294 households in seven provinces: West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, North Sulawesi, South Sulawesi, Southeast Sulawesi and Gorontalo.

The results show that, consistent with BKKBN data, the percentage of poor households for village in and near forest areas is higher compared to those far from forest areas in each of the seven provinces examined.

Percentage of poor households according to Susenas data, comparing villages inside and outside forest areas in seven provinces (2003)



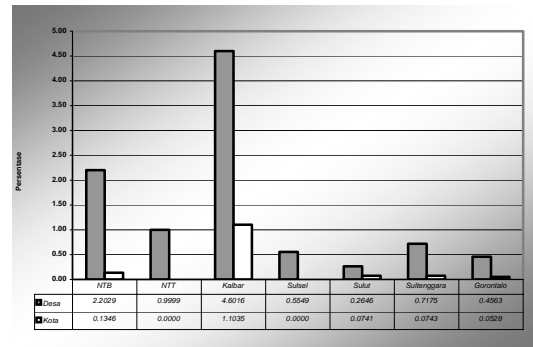
#### 5) The contribution of forests to household income

Here, 2002 National Socio-Economic Survey (Susenas) data from BPS is used, covering households in seven provinces: West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, North Sulawesi, South Sulawesi, Southeast Sulawesi and Gorontalo.

The results of the analysis are as follows:

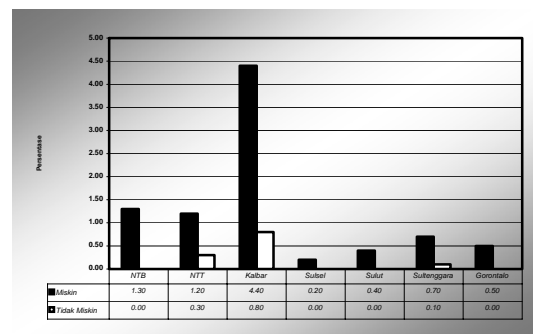
- As expected, rural households gain more income from forests than urban.

Percentage household income from forests: rural vs. urban in seven provinces (2002)



- In rural areas, poor households are more dependent on forest income than richer households;
- However, overall, dependency on forest income is apparently very limited, which is likely to be mainly a result of Susenas sampling criteria (see Section 3).

Percentage household income from forests: poor vs. rich in seven provinces (2002)



Based on the analyses above, it can be concluded that there is indeed a link between poverty and forests in Indonesia. However, tackling poverty in forest areas requires more in-depth analysis, and stronger empirical evidence. This is needed to develop more effective and targeted poverty reduction policies for forest areas.

## 2. Approaches to poverty reduction in Indonesia – how well does the Government target forest-area poverty?

### a. The general pattern of poverty reduction programmes in Indonesia

In 2002 CESS did an overview of existing programmes and actions on poverty reduction in Indonesia. Focusing on the national level, this study covered 37 government, NGO and international agency initiatives tackling in Indonesia (Seldadyo, H. 2002).<sup>5</sup>

In general, these programmes are relatively undifferentiated in their approach to poverty reduction. The study showed no substantive difference in objectives, or in approaches used for policy formulation. Whatever the form of poverty tackled (chronic or transient), and no matter what the agency involved (government, NGO or international), the overall objective is “empowerment of target groups”, or “increasing income of target groups”; but without any detailed measure of what kind empowerment is hoped for, nor what level of increase in income is intended.

In implementing programmes, all agencies claim that they use Participatory Rural Appraisal (PRA) and Focus Group Discussions (FGD). However, these tools in themselves have little value unless they are followed up with monitoring against the baseline established, and with appropriate action. However, available data mostly relate to funding, rather than to the condition of the target groups. This is a logical consequence of unmeasured programme objectives. More critical still, there is no data that enables pre- and post- program comparisons.

Government programmes tend to target poor areas and poor households. Here, poor areas tend to constitute “IDT villages” while poor families are considered to be “pre-welfare” according to BKKBN criteria. However, whether these categories are appropriate can also be questioned (see Section 3 below).

NGOs tend to target according to their specific interests, claiming only to support marginal groups. However, across all organisations studies, gender and age were not strictly accounted for in identifying target groups.

#### *b. Have forests become a target of poverty-reduction programmes?*

Since the 1960s, policies on poverty reduction in Indonesia have mostly focused on villages not in forest areas, especially in Java (Wollenberg et al, 2004)<sup>6</sup>. In addition, Wollenberg et al argue that sectoral support from the Ministry of Forests has not had any meaningful impact because the Ministry has neither the expertise nor the mandate for poverty reduction. Interests in conservation and production often override the livelihood needs of local people. Programme implementation falls to commercial licensees or parastatals to implement, and even the benefits they are supposed to offer to communities may be ignored with impunity.

Poverty reduction programmes in forest areas have included: (i) the Support to Forest Villages Programme (PMDH), implemented by logging concessions (HPH) as a condition of licensing, and (ii) Joint Forest Management with Communities (PHBM) implemented by PT Perhutani in Java. The very limited impact of the first of these, and the highly conflictual nature of the second, are well known.

### **(3) Gaps in understanding on poverty in and near forests**

Weaknesses in targeting of and adequately addressing remote- or forest-area poverty is in part a result of significant gaps in understanding about forest – poverty linkages; including limitations in the data and a lack of analysis.

#### *(1) Susenas – weak remote-area coverage*

Representation of remote areas in Susenas data is relatively weak, and therefore potentially underestimates both rates of poverty in remote areas, and levels of dependency on forests. Susenas 2002 data for 7 provinces<sup>7</sup> shows that, of 42, 718 households samples, only 1,29% are registered as having forest income. Numbers of households with forest income are likely to be greater. It is likely that they were simply under-represented, because too remote to sample. The design of individual Susenas sample areas (wilcah) is one possible cause; these are formulated in such a way that they cover villages near to each other, without the enumerator having to encounter too many difficulties in reaching individual households.

#### *(2) Limited and subjective data on forest income and subsistence*

Susenas data also captures limited data on the contribution of forests to livelihoods; covering only cash income from “forest” and “hunting”. It does not attempt to break these down, nor account for and monetise subsistence use of forests which can be very high in remoter areas. Forest-related income is also likely to be disguised within other sectors covered by Susenas such as manufacturing industry (which includes wood processing).

Similarly, food and non-food commodities bundles identified under the BPS Basic Needs Package Survey (SPKKD) as the basis for calculating rural and urban poverty lines, may neither adequately reflect local consumption patterns in remote forested areas (e.g. by

assuming high rice dependency), nor account for the implicit price of forest goods and services for subsistence. One consequence of this is that the poverty line may be set too high in some remoter areas.

### *(3) Inappropriate indicators*

BKKBN indicators for family well-being are more frequently used in programme design than Podes data, as they cover both location of the poor ("where the poor live") as well as family level information ("who the poor are"). According to BKKBN, those families who do not qualify for at least one of the following five indicators are considered to be "pre-wellbeing": (i) family members able to adhere to their religious principles; (ii) all family members are able to eat at least twice a day; (iii) all family members have different sets of clothing for different occasions; (iv) the largest portion of house floor is not made of dirt; (v) family is able to obtain modern medicines when sick. However, the cultural assumptions behind BKKBN indicators are often inappropriate, especially for *adat* communities – for whom traditional assets (e.g. livestock), as well as secure access to land and forests, may be more important indicators of wellbeing.

### *(4) Lack of forest focus within participatory approaches to poverty and livelihood assessment (PPA, PRA)*

Most government and NGO poverty reduction programmes now make use of focus group discussions, Participatory Rural Appraisal (PRA) as well as Participatory Poverty Assessment (PPA) to target more effectively at the local level. However, methodologies used may under-represent the importance of forests.

First, existing approaches to PRA and PPA are cross-sectoral, and attach limited importance to off-farm resources including forests, compared to service delivery, infrastructure development and agriculture.

Second, CESS-ODI observations of PRA and PPA processes in the field showed that methodologies used for livelihood analysis focussed more on cash income than on subsistence, (although the latter is often more important for the poorest people in the remotest areas).

Methodologies also tend to focus on "main livelihoods", thereby under-playing the high diversity of poor people' livelihoods, and the

role of forests as a complement to on-farm activity. Understanding the complexity and diversity of poor people's livelihood strategies is vital if the value of off-farm and forest resources is to be factored in adequately. Such resources act both as buffers during difficult periods, and as support for livelihood promotion (see **CESS-ODI Briefing Paper No 1**).

PPA also places very little emphasis on spatial analysis, or on access and control over land and natural resources, even though these are closely related to vulnerability.

### **(4) Filling gaps in understanding on poverty in and near forests**

#### **(a) Strengthening national-level data collection**

A priority in strengthening evidence of forest – poverty linkages is to increase Susenas sampling in remoter areas. The forest content of Susenas and Podes variables also need to be enhanced, both to reflect cash and subsistence dependency on forests, as well as the relative role of timber and non-timber forest products. This is important for strengthening the basis for programme design, and to enable broader-scale comparability and targeting by national agencies.

#### **(b) Strengthening targeting of interventions**

##### ***(i) Mapping forests and poverty***

Analysing the spatial distribution of poverty in relation to forest cover and land-use change is a potentially powerful means of raising policy-makers' awareness of poverty levels in and near the National Forest Estate, and in improving targeting of interventions, e.g. at watershed or kabupaten levels.

Spatial correlations between forest and poverty have been tested by CIFOR, based on Human Development Index data and high-resolution forest cover maps for an area of East Kalimantan, showing positive correlations between good forest cover and well-being. Corresponding household-level analysis showed this to reflect dependency on high value commercial timber (Dewi, 2004).<sup>8</sup>

The potential exists to integrate spatial forestry data (e.g. Master Plan for Forest and Land Rehabilitation) into the ongoing BPS - World Bank poverty mapping initiative for 30 provinces. This builds on a previous initiative

in 3 pilot provinces, using Census, SUSENAS and PODES data.

### ***(ii) Identifying the poor/ vulnerable within communities***

National data such as Podes help to target at the community level. But participatory analysis of forest-poverty linkages is vital for identifying poor and vulnerable groups within communities, and in identifying appropriate interventions that reach them.

A particular challenge for interventions such as community-based forest management is that they must necessarily address all stakeholders. The challenge is how, within that, to also deliver at least as much benefit to poorer or more vulnerable groups. They will require different guarantees and incentives for sustainable forest management.

What constitutes poverty, and how it is described, varies from area to area, depending on local livelihood systems. Participatory wealth ranking based on local perceptions of poverty may be an appropriate means to determine this in some areas (e.g. in less remote areas, with high levels of social inequality). For remoter societies, lack of access to and control of resources by specific groups, vulnerability to land-use change or distance from roads and markets, may be more appropriate means to differentiate poverty levels.

Either approach (or a combination of the two) offers the means to develop local poverty indicators for use in monitoring the impacts of forestry interventions and other programmes.

### ***(iii) Differentiating incentives for sustainable forest management in favour of the poor***

Differentiating incentives in favour of poorer and more vulnerable groups needs in-depth understanding of the role of forests in supporting their livelihoods (including the relative importance of timber and non-timber forest products).

This means understanding the role of forest products in meeting the varying subsistence and cash needs of poor/ vulnerable households on a daily or seasonal basis, amongst others to:

- overcome difficult periods;
- meet key expenditure requirements (e.g. health and education costs); or,

- to invest in livelihood promotion (see **CESS-ODI Briefing Paper 1**).

## **(5) Implications for forestry interventions**

Experience in Papua and South Sulawesi of developing and applying a combination of PPA and PRA in forest-dependent communities with local government and civil society partners of the DFID Multistakeholder Forestry Programme highlight a number of policy implications.

They chiefly concern targeting and providing incentives for poorer and more vulnerable groups, and include:

- Understanding welfare in terms of secure essential assets; and in consequence the need to accommodate land and forest uses vital for local livelihoods when spatial planning, and forest estate designation and allocation is undertaken;
- Tailoring management rules to the limited capacities and food insecurity of poor, risk-prone groups and households;
- Making a deliberate effort to ensure that institutional structures are accessible to poor and vulnerable groups and communities.

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<sup>1</sup> Brown, T. 2004. Analysis of population and poverty in Indonesia's forest. Draft. Natural Resources Management Program Report, Jakarta.

<sup>2</sup> Sunderlin, W.D., Resosudarmo, I.A.P., Rianto, E. dan Angelsen, A. 2000. The effect of Indonesia's economic crisis on small farmers and natural forest cover in the outer islands. Occasional Paper 29(E). Bogor, CIFOR.

<sup>3</sup> Seldadyo, H., dan Ediawan, A. 2003. *Bagai Tikus Mati di Lumbung: Kemiskinan dan Kehutanan di Indonesia*, CESS Working Paper 01/03; Bachtiar, P. P. and G. I.; Suryanto (2004). *Is Forest one of the Pockets of Poverty?: An Initial Descriptive Analysis of Indonesian Case*. CESS Working Paper 03/03. Center for Economic and Social Studies. Jakarta.

<sup>4</sup> Provinces in Quadrant 1 include: South, Southeast and Central Sulawesi, Bengkulu, West Nusa Tenggara, Gorontalo, Aceh, Maluku and Papua. Provinces in Quadrant 3 include: Jakarta, Bali, South Kalimantan, Jambi, Bangka-Blitung, North Sulawesi, Banten, West Java, and North Sulawesi.

<sup>5</sup> Seldadyo, H. 2002. *Program Anti Kemiskinan di Indonesia: Pemanfaatan, informasi dan kegiatan*. Center for Economic and Social

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Studies. Jakarta.

<sup>6</sup> Wollenberg, E., Belcher, B., Sheil, D., Dewi, S., Moeliono, M. 2004. Mengapa kawasan hutan penting bagi penanggulangan kemiskinan di Indonesia? CIFOR Governance Brief. No 4, Desember 2004. Bogor.

<sup>7</sup> West and East Nusa Tenggara, West Kalimantan, North, South and Southeast Sulawesi, and Gorontalo.

<sup>8</sup> Dewi Sonya (2004), Poverty and Forest: Does Geography Matter, International Seminar "Mapping Poverty in Southeast Asia" 1 – 2 December 2004, Jakarta.