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How can asset accumulation strategies be meaningful for adivasis *in Southern India?*

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Abstract

This paper is motivated by the observation that type and combination of assets play a significant role in reducing incidences of shocks by asset-poor households. Asset-based strategies treat assets not just as resources, but also as an agency to transform such resources to improve livelihood choices and tackle risks and shocks. Focusing on the case of *adivasi* households in the South Indian state of Kerala, we find that the type, number and combinations of specific assets (primarily social and physical capital) yield varied magnitudes of household resilience to both idiosyncratic and covariate shocks. Thus, social policies for specific social groups need to focus on the nature of asset and their combination, rather than welfare-based considerations.[1]

Keywords: asset accumulation; shocks; poverty; social and physical assets; *adivasi*; Kerala

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1. Introduction

Asset poverty is an indication of systematic discrimination in the development process, which has often led to the 'adverse' incorporation of certain social groups (Aliber, 2001; Du Toit, 2004: Hall and Patrinos, 2005). Influenced by Sen (1999) and Chambers (1992), asset-based approaches treat assets not just as resources, but also as an agency to transform such resources (Bebbington, 1999; Adato *et al.*, 2004; Moser, 2006; Moser and Dani, 2008; Gindling, 2005; Schelzig, 2005) to tackle shocks and help transform livelihoods. However, the asset structure and the ability to exercise their agency are crucial, as inequalities in power relations affect asset building (Narayan *et al.*, 2000; Alsop, 2004; De Haan, 2008). Thus, the capacity to build assets depends on a range of factors and circumstances; for example, social groups such as indigenous communities, specifically *adivasis* in India, face a range of vulnerabilities and structural constraints. This paper is motivated to explain how type, number and combination of assets play a significant role in reducing shocks faced by asset-poor households, particularly *adivasi* livelihoods in Southern India.

Indigenous communities share basic similarities in histories characterised by distinct social and cultural systems, and disproportionately affected by poverty (Mcneish and Eversole, 2006). In India, *adivasis* are a persistently disadvantaged ethnic group, as evidenced by indicators of human capabilities (Arun, 2008; NSSO, 2001; Basu, 1993). In the South Indian state of Kerala, despite the highly acclaimed success factors of the Kerala model,[2] *adivasis* remain adversely incorporated into this model. Thus, beside social and economic deprivation, asset poverty is highly prevalent among *adivasis*. Although land is an important livelihood asset for such communities, ineffective legislation and ambiguous transactions have made such groups effectively landless.[3] Persistent assetlessness, in terms of land and wider deprivation, demonstrates their marginalised position in the society.

There is a significant amount of research on social policies to improve livelihoods focused on asset-based strategies rather than those based on welfare (Moser, 2006; Moser and Dani, 2008). In such a context, this paper shows how the combination of assets and asset-building strategies is significant in overcoming socio-economic constraints and improving livelihoods. We hypothesise that occurrence of household shock is related to the particular type, number and combination of asset ownership. The structure of the paper is as follows: Section 2 provides a brief discussion of some

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[2] Kerala has received attention for its achievements in social development and redistributive policies, despite its low economic development. The new Kerala model explicitly seeks reconciliation of its development objectives at the local level through decentralisation strategies.

[3] Ambiguous land transactions were based on non-payment of price or at nominal prices through sale of commodities such as salt, liquor and tobacco, with or without their conscious concurrence (Banu, 2001; Kalathil, 2004).

emerging issues on asset accumulation. Section 3 explains the data and econometric analysis, while Section 4 is a detailed discussion of the results. Section 5 provides some policy implications and conclusions of the study.

2.   Asset accumulation and livelihoods

Debates on the multi-dimensionality of poverty comprise the livelihoods framework, rights-based approaches and empowerment issues that aim to improve social and economic aspects of livelihoods through capacity building and ensuring social protection (see Moser and Dani, 2008). A range of assets are deployed by households to manage the vulnerability context, normally characterised by seasonality, economic shocks and other trends (see Ellis, 2000; Murray, 2001; Bebbington, 1999; Narayan *et al.*, 2000). Others have included political and psychological assets that lead to empowerment (Alsop and Heinsohn, 2005), and their ability to exercise agency as individuals. Thus, scholars in the field of poverty and development have studied a diverse portfolio of assets or capital – both tangible and intangible (social, financial, physical and human) – that households use as strategies for income generation and coping. In this study, we use the term 'assets' for all forms of capital, networks and assets. As an extension to this, proponents of asset-based social policy argue that asset building is crucial in order to expand opportunities, and to overcome persistent socio-economic constraints. Therefore, policies could not only enable direct access to assets; but also change the nature of returns or transform the value of existing assets (Moser and Dani, 2008). However, structural inequalities, such as social groupings or gender, can perpetuate asset inequalities, which may have an effect on asset building (Narayan *et al,* 2000; Sabates-Wheeler, 2008).

However, averting the occurrence of risk under uncertainty, that is 'shock', from an asset-building perspective has received extensive attention in the poverty and vulnerability literature (Vasta, 2004; World Bank, 2005; Heltberg and Lund, 2008). A discussion of risk and uncertainty is beyond the scope of this paper (for a discussion on risk in the context of rural development, see Kostov and Lingard, 2003). Shock is the outcome variable underpinning uncertainty that characterises both idiosyncratic and covariate dimensions of risk. Compared to other poverty reduction strategies, the asset accumulation approach offers an opportunity to identify those risk factors likely to affect living patterns (Moser, 2006). Heltberg and Lund (2008) assert that asset-based strategies and assistance from public institutions are useful to subvert the impact of risk. Also, an understanding of the impact of assets, such as networks, would facilitate the adaptability of economic agents to complex environments and aid in risk management and rural development (See Kostov and Lingard, 2003). While the proposition of combating shock from an asset perspective has contributed significantly to policy, knowledge gaps on types, numbers and combination of assets remain.

Households' resilience to shock indicates their levels of vulnerability. Broadly, vulnerability refers to lack of assets, therefore exposing individuals and households to a range of risks and shocks. Moser (1998) proposes that the greater the assets, the lower are the risks of impoverishment. Other research on vulnerability has focused on the dimensions of household-level risk events, their respective probability distributions, and vulnerability of households (Gaiha and Imai, 2008; Heltberg and Lund, 2008). The gap in most of these studies is an understanding of the tools and mechanisms through which risky events are absorbed, and even used as an opportunity to manage risk and create opportunities for asset accumulation, as suggested in asset-based approaches. In this context, this study departs from existing studies in two ways. First, concentration on vulnerability-poverty studies engenders neglect of other relevant conceptual and measurement issues, such as vulnerability to shocks (Chaudhuri, 2003). Equally important to the vulnerability-poverty nexus is the identification of different shock (idiosyncratic and covariate) effects and household coping strategies from an asset-building perspective. Secondly, defining vulnerability as poverty plus risk (Pritchett *et al.*, 2000; Chaudhuri *et al.*, 2002) necessitates an investigation into households' susceptibility to future spells of chronic poverty based on their exposure to a wide range of shocks. (For an extensive body of literature on chronic poverty, see Hulme and Shepherd, 2003.) This can range from internal risk factors to multidimensional vulnerability that encompasses environmental and institutional risk factors (Birkmann and Wisner, 2006). In most cases, exclusion from an informal support system and public service provision are the types of risk usually missed (Dercon, 2001). Thus, the importance of networks and agents are crucial in understanding household responses to shocks.

Social capital approaches deploy network and institutionalist perspectives to manage risks and shocks – for example, see Woolcock and Narayan (2000).[4] Social capital refers to the benefits of membership within different kinds of social network. This study defines social assets as membership of one or more social networks; this idea has been explored extensively in the literature on social capital (e.g. Coleman, 1990; Putnam *et al.*, 1993; Cattell, 2001; Woolcock and Narayan, 2000). In contrast to the overriding benefits of social capital, Grootaert and Narayan (2004) evidence that, disaggregating households by poor and non-poor, social capital has a more positive effect on household welfare in the case of the former than the latter. Hyden (2001) makes a case for the organic evolution of social networks that deepen over time, based on trust and sharing. All these studies identify the intrinsic risk of translating different types of household social interrelations into a composite 'productive' resource.

In contrast to an open recommendation suggesting that asset building is essential for coping with poverty and vulnerability, this paper examines household shock through the

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[4] Woolcock (1999) distinguishes two types of ties in social capital: bridging (weaker ties), and bonding (stronger ties).

nature of asset combinations. The specific research questions that this study explores are: (1) do the *type and number of assets* lead to household experience of shock incidence? And, if so, (2) do *particular combinations and interactions of assets* influence the probability of incidence of a shock?

3. Data and analysis

The paper relies on cross-sectional data, using a household survey and semi-structured interviews conducted in the *adivasi* regions in the Indian state of Kerala during June 2005 to January 2007. The study focused on the nature of shocks, asset combinations and coping mechanisms. The two main variables for the study, household shocks (dependent variable) and type and number of assets (main exogenous variable) were justified based on the theoretical and empirical relevance to either vulnerability or poverty, independently or both.

Adivasi groups in India are distinguished by region, ethnicity, historical origins and economic occupation. The areas[5] investigated in the present study consist of selected 'hamlets' from *panchayats* (local administrative units), from the district of Waynad and the Attapady region in Palakkad district. The selected *panchayats* are: Noolpuzha, Bathery, Manathavady, Mepadi, Nenmeni, Pulpally, Thirunelli, Poothadi and Thondakkadav in Wayanad, and Agali and Sholayoor in Attapady. For the purpose of the study, four *adivasi* groups (covering 165 households), with distinctive occupational strategies and asset base, were chosen as follows: *adiyas* (16.4 percent; landless labourers), *kattunaikans* (27.8 percent; forest based), *paniyas* (44.9 per cent; landless labourers), and *irulas* (10.9 percent; agricultural labourers).

This paper estimates a binary probit model of household experience of a shock incidence. While cognizant of the wide-scoping dimensions of shock for the purpose of measurability, we treat the shock variable as a composite index. From an *ex post* perspective, we measure shock based on whether the household lost income due to labour loss, institutional failure or some other external influence.

The measurement of variables for the quantitative analysis of different types of capital is as follows:

   (1) Physical assets (denoted by ownership of material assets, such as dwellings, cycle, goats, sewing machine);
   (2) Financial assets (measured by savings balance on accounts);
   (3) Social assets (membership of one or more networks);

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[5] The spatial concentration of *adivasis* is marked in Kerala, with the district of Waynad accounting for 36 percent of *adivasis*, while Idukki and Palakkad (mostly the region of Attapady) account for 26 percent (Government of Kerala, 2007).

(4) Human assets (level of education);

(5) Natural assets (ownership of land);

(6) Number of members of household employed in paid work;

(7) Gender of person who has control over assets;

(8) Tribe (selected *adivasi* group); and

(9) Locality (defined by *panchayat*).

The choice of an indicator for each of the asset components was informed by its robustness, relevance to the rural community and degree of discrimination among the households.[6] The first model specifies asset type either as an ordinal measure or as cardinal, depending on the nature of the exogenous variable; and the second estimation identifies the significant asset types and calculates the impact of per unit changes in the number of assets on the probability of an adverse shock occurring. Other covariates factored into both estimations include: number of household members currently employed; gender of the main earner or dominant person amongst the parents for asset decision making; and tribe, that invariably accounted for any location effect in the model.

The general probability model is specified in the form:

$$P\left(Shock_i = 1 \mid x_i^{'} \ \beta\right) = F\left(x_i^{'} \ \beta\right)$$ where; $F(.)$ is a standard normal cumulative distributive function   - **1**

The vector of covariates $F(x_i^{'})$ [physical, financial, social, human and natural assets, number of members of household employed, gender of main earner or dominant person of the parents at the point of decision making, and tribe/locality] were captured as discrete variables; hence the marginal effect was estimated as:

$$\frac{\partial P\left(Shock = 1 \mid x\right)}{x_j} = f\left(\sqrt{2\Pi}\right)^{-\frac{1}{2}} \exp\left\{-\frac{1}{2}z^2\right\}$$ -   **2**

For a discrete partial effect of a change, for example in a respondent moving from one social group to two groups (that is C_1 to C_1+1) the marginal effect is expressed as:

$$F\left(\hat{\beta}_0 + \hat{\beta}_1\left(C_1+1\right) + \hat{\beta}_2 \ \bar{x}_2 + \ldots\ldots + \hat{\beta}_K \ \bar{x}_K\right) - F\left(\hat{\beta}_0 + \hat{\beta}_1 \ \hat{C_1} + \hat{\beta}_2 \ \bar{x}_2 + \ldots\ldots + \hat{\beta}_K \ \bar{x}_K\right)$$ - **3**

The first and second equations facilitate the estimation of the probability responses of each of the covariates, while the third equation enhances the calculation of a given significant variable per unit on the probability of an incidence of shock. The third

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[6] For instance, in choosing a variable to capture financial capital, the study had the option of choosing between debt, savings and access to credit. Each of these indicators, from the perspective of the livelihood framework, is permissible in measuring the financial capital. The study settled on savings, as it appeared discriminatory relative to debt and access to credit. Debt to a very large extent presented a coping mechanism for the households; however, the cardinal nature of its measure subjected it to huge data loss once it is 'ordinalised' to enhance an assessment for the combination of assets.

equation enables the detailed assessment of either a higher probability (positive relationship) or less likelihood (negative relationship) effect. Thus, the rate of change of the likelihood effect, since it is non-linear, might vary as the number of a given asset changes.

4. Findings and discussion

The dependent variable, shock incidence, shows that two-thirds of households in our sample encountered either idiosyncratic or covariate risk in the 12 months preceding data collection. This depicts fragility of households among the *adivasi* group. Social networks emerged as the most accessible form of asset, with the least being financial. In over three-quarters of the households females were the main earner. Some of the information related to the descriptive statistics is given in Table 1.

Table 1. Descriptive statistics

Variables	Mean	Std. dev.	Minimum	Maximum
Shock incidence	0.33	0.47	0	1
Social asset – membership of network	0.89	0.31	0	1
Physical asset	0.24	0.43	0	1
Human asset – number of literate members of household	0.68	1.05	0	5
Natural asset – family land size	1.22	1.37	0	5
Financial asset – savings	9.70	17.12	0	50
Number of household members employed	2.07	1.04	0	6
Household per capita expenditure	2.78	1.32	0	6
Tribe/location	4.45	2.82	1	10
Gender of main earner	0.18	0.39	0	1
Number of observations		*165*		

Our multivariate findings on a household's experience of shock incidence are presented in the sequence:

(1) effect of broad types of assets and their interaction;
(2) effect of number of assets; and
(3) particular type/number and their interaction.

Households that had experienced at least one of either idiosyncratic or covariate shock in the 12 months preceding the data collection were assigned the numeric value one; and otherwise, zero (see Table 2).

Table 2. Focus on asset type and their interaction
(*Dependent variable* – likelihood of incidence of shock)

Covariates	$\partial_{shock} / \partial x$	Z-value
Dummy variable for social asset	0.320*	5.81
Dummy variable for physical asset	-0.228*	-3.07
Number of literate members of household (human asset)	0.015	0.34
Family land size (natural asset)	-0.003	-0.09
Savings (financial asset)	- 0.004**	-1.71
Number of household members employed	- 0.075**	-1.82
Household per capita expenditure	0.027	0.88
Tribe/location	- 0.029**	-2.01
Gender of main earner/dominant person in decision making	0.192**	1.79
Social asset x physical asset	- 0.225*	-3.04
Constant	*- 1.08** *	*-1.72*

Number of observations	=	*165*
Number of iterations	=	*4*
Pseudo R2	=	*0.1485*

*** Significant at one percent; ** Significant at five percent; * Significant at ten percent

The reported marginal effect enables a numeric interpretation of the responsiveness of each of the covariates on the peril of a household shock (Equation 2). Denoting the incidence of shock as one, this leads to the following broad directional interpretation: all positive coefficients signify a greater likelihood of a household experiencing an adverse shock, and negative values signify a lesser chance of occurrence (see Table 2). The outstanding observation from the estimation is that social, physical and financial assets and other covariates, such as location/tribe, number of households employed and gender, were either very significant or just significant at five percent in explaining incidence of shock. These covariates evidenced varied directions and degrees of sensitivity on household incidence of shock.

The multivariate probit analysis is preceded by a correlation matrix (Appendix 1) to explore the effect of a potential co-linear relationship between the different assets on the dependent variable. While we argue that nature, combination and sequencing of assets affect the incidence of a shock outcome, the presence of asset co-linearity is capable of biasing our estimates. The observed highest strength of correlation, 0.24, for any pair of the five assets signifies less likely effect of co-linearity. Against this backdrop, we proceed with the probit estimation.

The response to the main hypothesis of the study indicated that social and physical assets are very significant in explaining the incidence of shock. The weakness of financial assets as an explanation implies the need for caution in asserting its overall effect on the incidence of shock. A plausible reason is the liquidity leading to swift transferability and, as such, unreliability in predicting the incidence of shock. Human and natural assets, on the contrary, failed to explain the incidence of a household shock.

This study captures the benefits derived from participation in different types of social networks. Thus, participation in voluntary organisations, different types of vertical and horizontal networks, as well as connectedness to local institutions such as the *panchayat* office, tribal welfare office, *anganwadis* (child welfare agency), *Kudumbashree*[7] (state sponsored self-help groups) and other self-help groups can be identified as contributing to a wide range of social capital responses. We also found that women participate in self-help groups (SHGs) in the region operated by NGOs, such as *Shreyas* (a religious-based institution), and *Gandhi Sevak Samithi* (an NGO founded on the principles of Gandhian philosophy*),* leading to both income generation, and ability to manage assets and improve social networks, thus providing a buffer against household shocks.

In the empirical model, social asset was initially captured as a composite variable. This was measured as a dummy represented by the respondent being a member of at least one social network (membership of a religious organisation, community, political, self-help group or other social-based organisation). In contrast to *a priori* expectation, we observed that marginal significance of social networking increased the probability of shock incidence. This finding, which seems to contradict empirical evidence, however, showed further interesting responses when explored in the context of number and type of social networks.

The estimation of the third equation (Table 3) to investigate the pattern of household adverse shock sensitivity on changes in the number of social networks reveals some insights into the strength of connectedness. For instance, the transition from no network/connectedness to one, and from one to two, shows an increasing probability of shock incidence. In reverse pattern, a sharp decline showing a lower probability of a shock incidence is observed, as network/connectedness increases from three through to five. This finding shows that households are likely to tap gains from multiple social networks, rather than single networks. This leads on to investigating the nature of network, and whether it offers positive or negative outturns to members.

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[7] *Kudumbashree* – 'prosperity of the family' – is a poverty alleviation programme of the state of Kerala's State Poverty Eradication Mission (SPEM) since 1999. This is a women-oriented, participatory and integrated approach to fighting poverty with the support of the central government and National Board for Agricultural and Rural Development (NABARD) (GOK, 2007).

One interesting observation is that incidence of shock is less likely if a household owns a physical asset. It is 23 percent less likely for a household that owns any form of physical asset to experience an adverse shock, than for a non-ownership household. In the study area, we found that, despite state housing programmes, suitability and quality are of concern, due to non-completion, constant leaks, non-functioning solar and electrical systems and lack of proper sanitation. This affects households' ability to use dwellings as an effective physical *asset* to transform their livelihoods. For example, diversification of income would be possible through use of the physical space or ownership of sewing machines for tailoring; many women who have acquired tailoring skills have not been able to pursue this as a source of income generation.

We observe weak evidence for the claim that financial assets reduce the likelihood of household incidence of shock. It reveals a significance level of five percent and marginally reduces the likelihood of a shock occurring (0.4 percent). In our study, the financial asset base primarily consisted of income from waged work (both farm and non-farm) and income from own farming (dependent on seasonality of employment). In many households, borrowing tends to supplement household income, mainly during lean periods, whereby purchase of food (groceries) is debt financed and repaid in the harvesting season. However, most debt accounts are subject to manipulation by local moneylenders and shopkeepers, due to the illiteracy and poor accounting skills of *adivasis*, drawing them into perpetual debt.

Let us further explore the link between type of asset and incidence of shock. Table 3 and Figure 1 examine the effect of changes in the number of assets on the incidence of shock. Although social capital, broadly assessed, increases the probability of household incidence of shock, it emerges from Figure 1 that, in spite of the marginal increase between zero and one, there is a steep fall in the extent of greater likelihood as the number of networks increases, irrespective of the type.

Figure 1. Changes to household asset type and responsiveness to shock
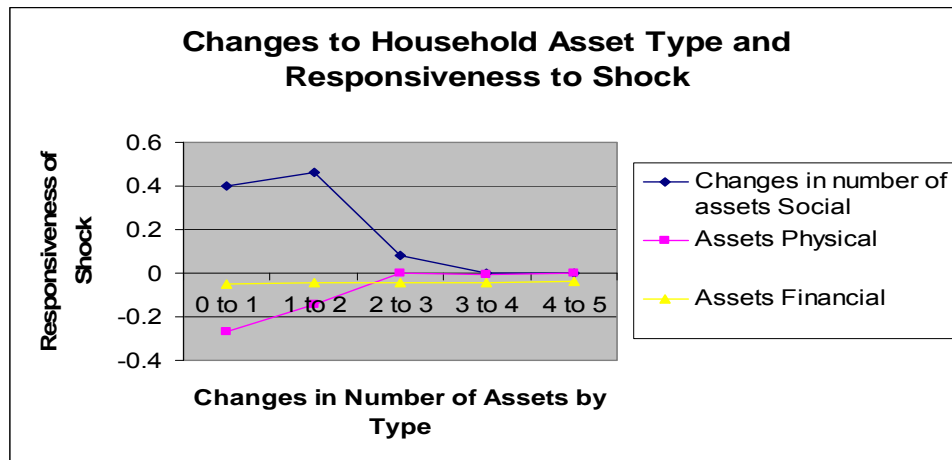
While the trend shows a positive association with incidence of shock, this stabilises after the third ownership of physical assets. This observation requires detailed investigation of the appropriate asset quantity, type and combinations with other assets.

The nature and interaction of social and physical assets on the probability of shock incidence was seen in Table 2. The interaction between these assets reveals a lower incidence of households experiencing shock – i.e. there is a 23 percent likelihood of reducing a household shock. The magnitude of the reduction, and the degree of relevance relative to the outcome of the two independent assets, provide a policy argument for the need to empower households with appropriate assets – in this case, physical and social assets – concurrently.

Table 3. Likelihood impact of a per unit change of significant assets (N = 165)

Changes	Significant assets		
	Social	Physical	Financial
0→1	0.3977480	- 0.2660206	- 0.0485744
1→2	0.4651606	- 0.1413223	- 0.0468273
2→3	0.0828797	0.0000000	- 0.0444428
3→4	0.0023800	- 0.0074700	- 0.0415255
4→5	0.0000062	- 0.0004703	- 0.0381978

We further augment our analysis with the estimation of a binary probit model that brings out the specific dimensions of social networks, and identifies the interaction that is significant in explaining the incidence of shock (see Table 3).

While we find that the specific types of social networks, such as women's networks and NGO membership, proved insignificant for the likelihood of household shock incidence, interestingly households with any kind of political networks seemed to experience some household shock. How do we explain this? In order to do so, the nature of political networks among *adivasis* needs to be made clear. Political networks are denoted by any kind of participation in political activities, either formal or informal. Political participation by *adivasis* in Kerala reflects the case of adverse incorporation in several, connected ways.

Adivasis throughout the country have engaged in continuous struggles for land rights and stable livelihoods, but experience limited and hostile interactions with mainstream society. Moreover, poor organisation of political activities has not only hindered political activism, but activists are treated with suspicion by the state authorities, particularly in the context of the infamous '*Muthanga*'[8] riots of Kerala in 2001, and the recent *Chengara* (*adivasi* land struggle in the central region) protests. Furthermore, traditional community leaders have lost their relevance and power in the *adivasi* community, thus allowing for any kind of recognised political activity. Thus, the problematic nature of political participation by *adivasis* may, to some extent, explain household exposure to shocks. Due to their participation in some form of political activities, household members (mostly male) are usually not able to pursue a sustained household income, often leading to persistent exclusion in social and political circles. Further, interactions with institutions and external (mainstream) communities have culminated in exploitation and discrimination, leading to negative social networks. For example, *adivasi* youth are involved in activities such as illicit liquor brewing and sales, drug cultivation and theft of forest resources. Such incidents perpetuate the general stigma that all *adivasis* are criminals; they are often treated with suspicion and excluded from local (*panchayat*) activities.

In contrast, other forms of social network beyond the identified types evidenced a significant and lesser likelihood of incidence of a household shock.[9] This suggests a need to encourage households to have joint membership in both groups, in order to tap their mutual benefits.

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[8] In September 2001, deaths through starvation in the *adivasi* dominant region of Wayanad led *adivasi* activists to engage in land agitation campaigns in the Muthanga region, ending in a violent struggle with state authorities.
[9] This pre-empts further exploration into the different types of known social networks. Interacting with any of the known social networks seemed insignificant in explaining household experience of shock, with the exception of households that have networks with both an NGO and a women's group.

Table 4. Probit estimation
(Dependent variable **– likelihood of incidence of shock)**

Covariates	$\partial_{shock} / \partial x$	Z-value
Dummy variable for social capital - tribal network[+]	0.119	1.38
Dummy variable for social capital - political network[+]	0.159**	1.98
Dummy variable for social capital - NGO network[+]	0.096	0.82
Dummy variable for social capital – women network[+]	0.161	1.34
Dummy variable for social capital - other network[+]	- 0.056	-0.55
Social capital of NGO x women network[+]	- 0.256*	-2.54
Dummy variable for physical asset	- 0.256*	-3.49
Number of literate members of household (human asset)	0.010	0.24
Family land size (natural asset)	0.001	0.04
Savings (financial asset)	- 0.005**	-1.66
Number of household members employed	- 0.074**	-1.76
Household per capita expenditure	0.028	0.92
Tribe/location	- 0.029**	-2.00
Gender of main earner/dominant person in decision making	0.161	1.42
Constant	*- 1.08****	*-1.72*

Number of observations	=	*165*
Number of Iterations	=	*4*
Pseudo R2	=	*0.1485*

***   Significant at one percent; **   Significant at five percent; * Significant at ten percent

[+] Type and combinations of social capital networks

5. Implications for social policy

The evidence shows that social policies that address shocks and vulnerabilities need to focus on appropriate asset accumulation strategies, rather than on those based merely on welfare. As Moser (2006) suggests, social policies need to distinguish between first-generation and second-generation asset accumulation. The former is based more on welfare-based poverty-reduction policies and aims at the provision of human, physical and financial capital, through educational, housing and employment programmes. Second-generation asset accumulation policy strengthens accumulated assets through citizen rights, security, governance and accountability of institutions (Moser, 2006). In our study, we find that the provision of social and economic infrastructure and services through housing, public distribution system, health and educational institutions are not sufficient to guarantee asset building. Instead, this approach needs to be sensitised to

the needs of *adivasi* groups, for example through policies to strengthen the nature of social networks among *adivasi* groups, which may tackle wider issues of exclusion, e.g. the criminalisation of *adivasi* youth.

The study has shown that not all assets provide a positive outcome in terms of reducing shocks, and the sequencing of assets matters. In particular, the role of specific policies that strengthen the accumulation of social, financial and physical assets is found to be more significant. Our study shows that political networks do not seem to be significant in reducing household shocks. Social network groups therefore need to ensure social and political participation among youth, women and other groups, and ensure accountability and trust, leading to improved citizen rights and social rights.

The findings show that mere accumulation of assets such as housing and human capital is not sufficient to reduce vulnerabilities, unless this translates into meaningful assets and productive outcomes. Participation in multiple networks seems to have a more positive impact on reducing shocks. Households therefore need to tap into multiple sources of networks, rather than just single networks. For example, participation in SHG networks may derive benefits (e.g. physical assets) which can be used to their full potential for financial gain. This indicates that policies should not just end with provision of assets, but should strive to strengthen the use of such assets, through combining with other assets that may reduce shocks.

Tribal welfare intervention policies must take into consideration specific ethnic, social, economic and cultural dimensions of the social groups, avoiding a 'one size fits all' approach. For instance, *adiyas* and *paniyas* require regular and appropriate levels of employment, as this is their main source of financial asset, while *kattunaikers* require support for their livelihoods based on forest produce collection, such as effective marketing. *Irulas* require support with cultivation, which is hampered by attack from wild animals, lack of appropriate subsidies and the timely availability of farming resources.

The findings highlight the role of women in asset-building strategies as shock absorbers and asset builders. For example, women play multi-dimensional roles, such as income earners, contributors to social capital through participation in SHGs, and participants in decision making within the household, which play a crucial role in asset accumulation. Thus, social policies that have been effective elsewhere in the state, such as the *Kudumbashree* programme, could be successful if tailored towards the needs of *adivasi* women. Other policies at the *panchayat* level need to involve more women to strengthen their social and political participation.

The role of institutions – state, private and NGOs – to strengthen social and physical assets, as raised by other studies (Narayan *et al.*, 2000) is reiterated here. Participation in networks and institutions, particularly by women, in NGOs such as *Shreyas* and

Gandhi Smarak Seva is significant, as highlighted earlier. State institutions, such as the tribal office, *Krishi bhavan* (local farm office) and local *panchayat*, are therefore crucial in strengthening asset accumulation through citizenship forums, increased accountability and governance, and focusing on social justice, development and democratic ideals.

6. Conclusions

The current study has assessed the probability of assets precipitating the incidence of shock by estimating two equations, and thirdly calculating the discrete marginal effect of the type of assets that are significant. The groundbreaking path of assessing the effect of increases in the number and combination of different assets on household incidence of shocks offers some interesting outcomes. For instance, observing that minimising the incidence of shock might be independent of the number of particular assets, such as affiliation with several social networks, but, rather, dependent on the mix among different assets, is pivotal for policy and future research.

The study argues for an enabling asset-accumulation environment for *adivasi* livelihoods, which builds *specific* types of asset accumulation, facilitated by appropriate policies, institutions and life-cycle opportunities. Thus, mere provision of assets is not enough; rather, appropriate levels of (in this case, physical and social) assets are required, not only ensuring an asset base, but also leading to the ability to manage an appropriate combination of assets.

Appendix 1 – Correlation matrix

Variables	Shock incidence	Social assets	Physical assets	Human assets	Natural asset	Financial asset	HH members employed	HH exp. per capita	Tribe /location	Gender of main earner
Shock incidence	1									
Social asset	0.20	1								
Physical asset	- 0.21	0.06	1							
Human asset	- 0.06	- 0.03	0.21	1						
Natural asset	- 0.04	0.03	0.09	- 0.10	1					
Financial asset	- 0.05	0.20	0.09	0.24	- 0.09	1				
HH members employed	- 0.17	- 0.11	0.17	0.28	0.08	0.12	1			
HH exp. per capita	0.07	0.04	0.02	- 0.04	0.12	0.12	- 0.02	1		
Tribe/location	- 0.09	0.03	- 0.02	- 0.01	0.09	- 0.29	- 0.03	0.00	1	
Gender of main earner	0.17	0.12	- 0.04	0.20	- 0.09	0.12	0.14	0.13	- 0.06	1

References

Adato M., Carter M., and May J. (2004). 'Sense in sociability? Social exclusion and persistent poverty in South Africa'. Madison, WI: BASIS CRSP.

Aliber, M. (2001). 'Study of the iIncidence and nature of chronic poverty and development policy in South Africa: an overview'. *Chronic Poverty Research Centre (CPRC) Working Paper No 3*. Manchester, UK: The University of Manchester.

Alsop, R. (ed.) (2004). *Power Rights and Poverty: Concepts and Connections*. Washington, DC: World Bank.

Alsop, R. and Heinsohn, N. (2005). 'Measuring empowerment in practice: structuring analysis and framing indicators'. *World Bank Policy Research Working Paper 3510*. Washington, DC: World Bank,

Arun, S. (2008). 'Managing assets and vulnerability contexts: vistas of gendered livelihoods of *adivasi* women in South India'. *Brooks World Poverty Institute (BWPI) Working Paper No. 32*. Manchester, UK: The University of Manchester.

Banu, Z. (2001). *Tribal Women Empowerment and Gender Issues.* New Delhi: Kanishka.

Basu, S.K (1993). *Health Status of Tribal Women in India*. Status paper for the National Workshop on 'Status of Tribal Women in India', 22-23 December. New Delhi: Council for Social Development.

Bebbington, A. (1999). 'Capitals and capabilities: framework for analysing peasant viability, rural livelihoods and poverty'. *World Development* 27(12), 2021-2044.

Birkmann J. and Wisner B. (2006). 'Measuring the un-measurable – the challenge of vulnerability'. *UNU Institute for Environmental and Human Security Publication Series, No. 5*. Bonn, Germany.

Cattell, V. (2001). 'Poor people, poor places, and poor health: the mediating role of social networks and social capital'. *Social Science and Medicine* 52(10), 1501-1516.

Chambers, R. (1992). 'Rural appraisal: rapid, relaxed, and participatory'. *Institute of Development Studies Discussion Paper 311*. Brighton, UK: IDS, University of Sussex.

Chaudhuri, S. (2003). *Assessing Vulnerability to Poverty: Concepts, Empirical Methods and Illustrative Examples*. Mimeo, Columbia University New York.

Chaudhuri, S., Jalan, J. and Suryahadi, A. (2002). 'Assessing household vulnerability to poverty from cross-sectional data: a methodology and estimates from Indonesia'. *Discussion Paper 0102-52*. Columbia University New York.

Coleman, J. S. (1990). *Foundations of Social Theory*. Harvard: Harvard University Press.

De Haan, A. (2008). 'Citizens, identity and public policy: affirmative action in India'. In A. Dani and A. de Haan (eds.), *Inclusive States: Social Policy and Structural Inequalities* (pp.225-248). Washington, DC: World Bank.

Dercon, S. (2001). 'Assessing vulnerability to poverty'. Paper prepared for UK Department for International Development (DFID). Available online at: http://www.economics.ox.ac.uk/members/stefan.dercon (accessed 15 June 2007).

Du Toit, A. (2004). 'Forgotten by the highway. The sociology of chronic poverty in South Africa: challenges for action and research'. *Chronic Poverty Research Centre* (*CPRC) Working Paper No. 56*. Manchester, UK: University of Manchester

Ellis, F. (2000). *Rural Livelihoods and Diversity in Developing Countries*. Oxford, UK: Oxford University Press.

Gaiha, R. and Imai, K. (2008). 'Do institutions matter in poverty reduction? Prospects of achieving the MDG of poverty reduction in Asia'. *Statistical & Applicazioni* IV(2), 129-160, 1824-6672.

Gindling T. H. (2005). 'Poverty in Latin America'. *Latin America Research Review* 40(1). Austin, TX: University of Texas Press.

Government of Kerala (GOK) (2007). *Economic Review*. Thiruvanathapuram: Kerala State Planning Board.

Grootaert, C. and Narayan, D. (2004). 'Local institutions, poverty and household welfare in Bolivia'. *World Development* 32(7), 1179-1198.

Hall, G. and Patrinos, H. A (eds.) (2005). *Indigenous Peoples, Poverty and Human Development in Latin America.* Basingstoke, UK: Palgrave Macmillan.

Heltberg R. and Lund N. (2008). 'Shocks, coping and outcomes for Pakistan's poor: health risks predominate'. Paper presented at the UNU-WIDER Conference, 'Frontiers of poverty analysis', 26-27 September, Helsinki.

Hulme D. and Shepherd, A. (2003). 'Chronic poverty and development policy: an introduction'. *World Development* 31(3), 399-402.

Hyden, G. (2001). 'The social capital crash in the periphery: an analysis of the current predicament in Sub-Saharan Africa'. *Journal of Socio-Economics* 30(2), 161-163.

Kalathil, M. (2004). 'Withering Valli: alienation, degradation and enslavement of tribal women in Attapady'. *Discussion Paper 66.* Kerala Research Programme on Local Level Development. Centre for Development Studies. Kerala, India.

Kostov, P. and Lingard, J. (2003). 'Risk management: a general framework for rural development'. *Journal of Rural Studies* 19, 463-476.

McNeish, J. A., and Eversole, R. (2006). 'Introduction – indigenous people and poverty', in R. Eversole, J. A. McNeish and A. D. Cimadamore (eds.), *Indigenous People and Poverty : An International Perspectiv*e. London and New York: Zed Books.

Moser, C. (1998). 'The asset-vulnerability framework: reassessing urban poverty reduction strategies'. *World Development* 26(1), 1-19.

Moser, C. (2006). Asset-based approaches to poverty reduction in a globalised context'. *Brookings Institution Global Economy and Development Working Paper #01.* Washington, DC: Brookings Institution.

Moser, C. and Dani, A. (2008). *Assets, Livelihoods and Social Policy.* Washington, DC: World Bank.

Murray, C. (2001). 'Livelihoods research: some conceptual and methodological issues'. *Chronic Poverty Research Centre* (*CPRC) Working Paper No 5.* Manchester, UK: The University of Manchester.

Narayan, D., with Patel, R., Schafft, K., Rademacher, A., and Koch-Schulte, S. (2000). *Voices of the Poor. Can Anyone Hear Us*? *Voices from 47 Countries.* Washington, DC: World Bank.

National Sample Survey Organisation (NSSO) (2001). *Employment and Unemployment Situation among Social Groups in India, 1999-2000. 55th Round.* Report No. 469. New Delhi: Ministry of Statistics and Programmes.

Pritchett L., Suryahadi A. and Sumarto S. (2000). 'Quantifying vulnerability to poverty: a proposed measure with application to Indonesia'. *SMERU Working Paper.* Washington DC: The World Bank.

Putnam, R. D., Leonardi, R. and Nanetti, R. Y. (1993). *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton, NJ: Princeton University Press.

Sabates-Wheeler, R. (2008). 'Asset inequality and agricultural growth: how are patterns of asset inequality established and reproduced? In A. Bebbington, A. Dani, A. de Haan and M. Walton (eds.), *Institutional Pathways to Equity: Addressing Inequality Traps* (pp. 45-72). Washington DC: World Bank.

Schelzig K. (2005). *Poverty in the Philippines: Income, Assets and Access*. Manila: Asian Development Bank. ISBN: 971-561-563-5.

Sen, A, (1999). *Development as Freedom*. New York: Anchor Books.

Vasta S. K. (2004). 'Risk, vulnerability, and asset-based approach to disaster risk management'. *International Journal of Sociology and Social Policy* 24(10/11).

Woolcock, M. (1999). 'Learning from failures in microfinance: what unsuccessful cases tell us about how group-based programs work'. *American Journal of Economics and Sociology* 58(1), 17-42.

Woolcock, M. and Narayan, D. (2000). 'Social capital: implications for development theory, research and policy'. *The World Bank Research Observer* 15(2), 225-249.

World Bank (2005). 'Afghanistan: poverty, vulnerability and social protection – an initial assessment'. *Report No. 29694*. Washington, DC: World Bank.

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