

Relationship between Transition of Income Poverty and Assets Base of a Household: A Case Study of the Ratnapura District, Sri Lanka

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Introduction

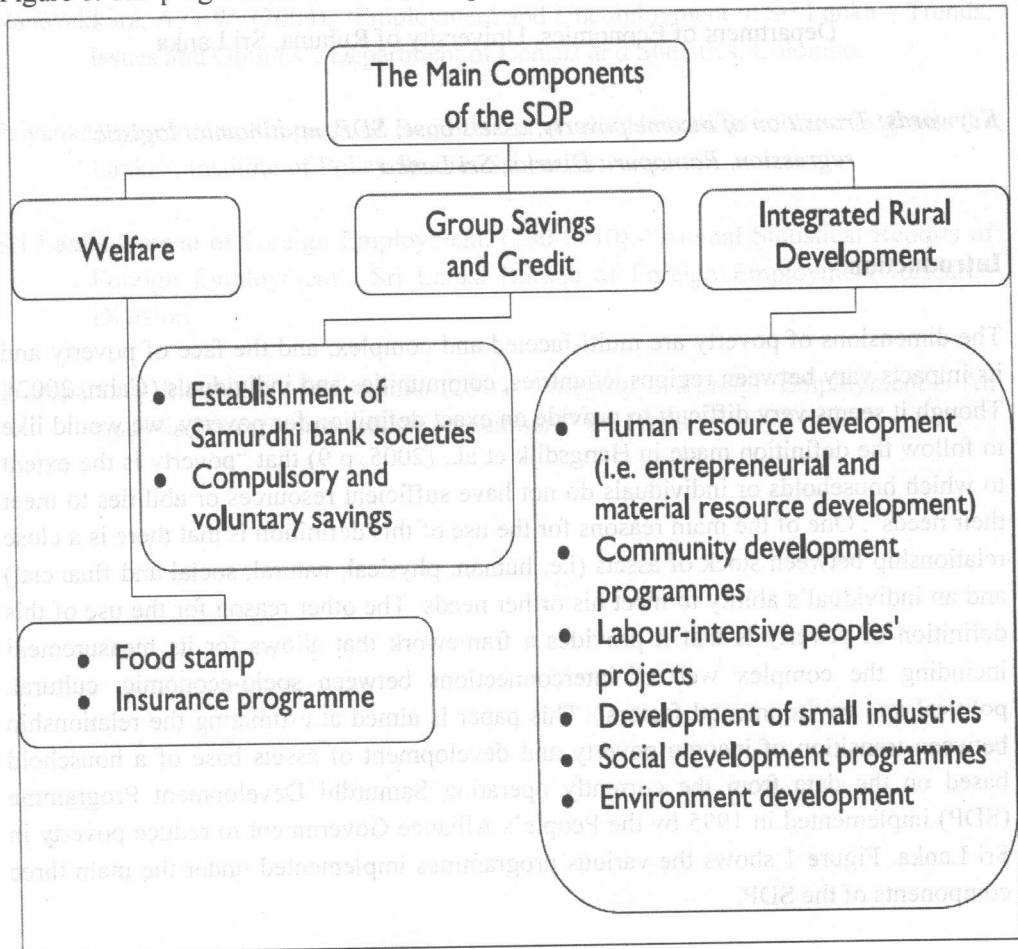
The dimensions of poverty are multi-faceted and complex, and the face of poverty and its impacts vary between regions, countries, communities and individuals (Cahn, 2002). Though it seems very difficult to provide an exact definition for poverty, we would like to follow the definition made in Hengsdijk et al., (2005, p 9) that “poverty is the extent to which households or individuals do not have sufficient resources or abilities to meet their needs”. One of the main reasons for the use of this definition is that there is a close relationship between stock of assets (i.e. human, physical, natural, social and financial) and an individual’s ability to meet his or her needs. The other reason for the use of this definition of poverty is that it provides a framework that allows for its measurement including the complex web of interconnections between socio-economic, cultural, political and environmental factors. This paper is aimed at estimating the relationship between transition of income poverty and development of assets base of a household based on the data from the currently operating Samurdhi Development Programme (SDP) implemented in 1995 by the People’s Alliance Government to reduce poverty in Sri Lanka. Figure 1 shows the various programmes implemented under the main three components of the SDP.

The SDP has both ‘protectional’ and ‘promotional’ objectives. The programmes implemented with protectional objectives are mainly focused on assisting the poor in the face of adverse shocks. The other programmes such as **group-savings, the credit component and human resource development** have focused on long-term poverty reduction goals through empowering and enhancing the assets base of the poor to achieve promotional objectives (Salih 2000). Through these key objectives, it is expected to eradicate poverty through ensuring the participation of the beneficiaries of the SDP in the rural farm and non-farm production process. As a national programme

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covering about 1.2 million poor families, the government of Sri Lanka is providing the required funds and implementing its strategies and activities to reach its key objectives.

Figure 1: The programmes and main components of the SDP



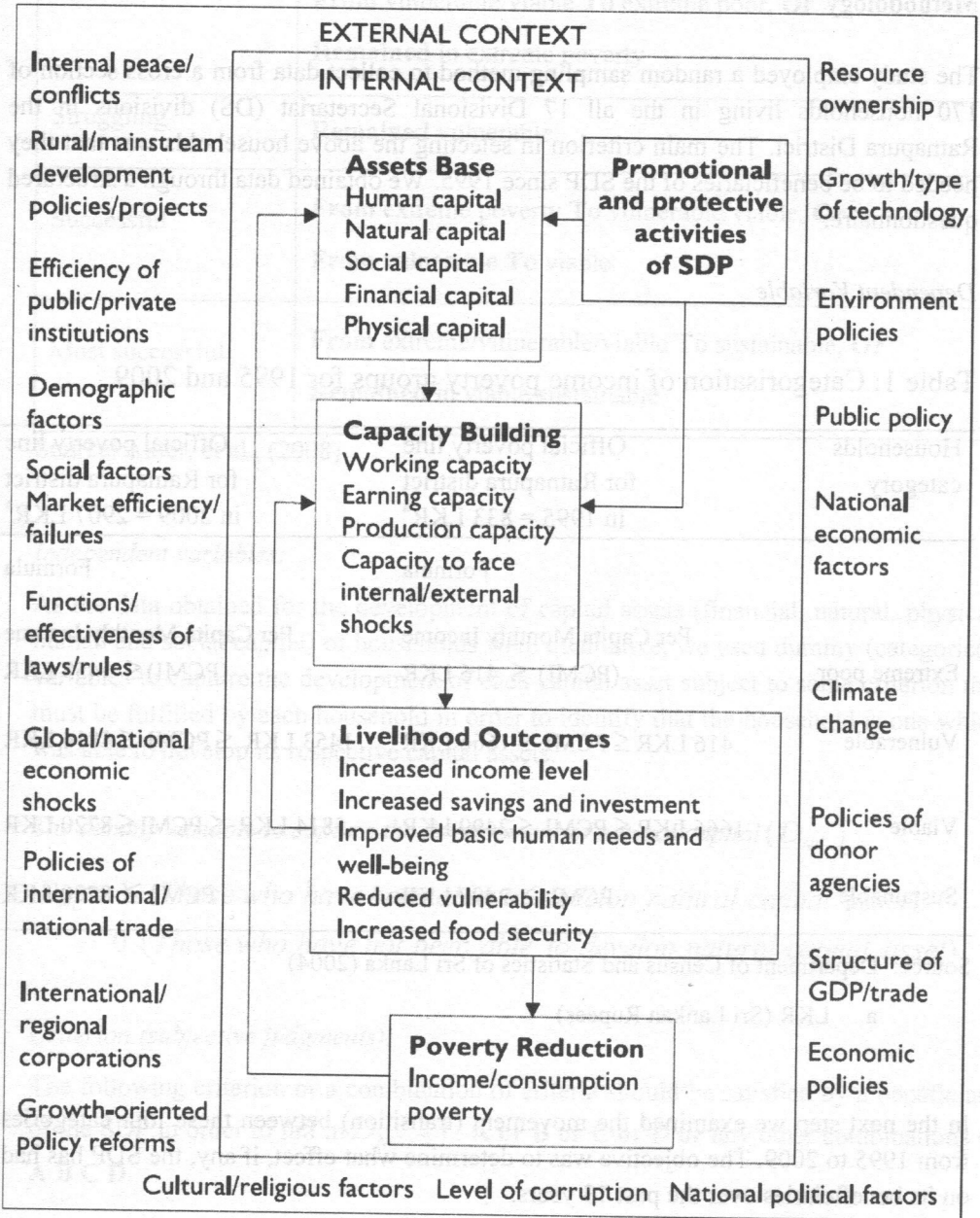
Source: Salih (2000).

Figure 2 outlines the theoretical framework that is to be used in this study. The framework assumes that livelihoods of the beneficiaries of the SDP are mainly affected by the ongoing activities of the project within the internal context. This implies that although there are various kinds of factors in the external environment, which can directly or indirectly affect the livelihoods of people, it is assumed that the development of livelihoods of the beneficiaries of the SDP are mainly affected by activities of the SDP. We hypothesize that promotional and protective activities of the SDP can directly and indirectly affect the livelihoods of its beneficiaries through two channels. The first channel is the assets base, where there are five assets that can directly be affected

through the activities of the project. Those assets are human, natural, social, financial and physical capital. The second channel has direct influence through protective activities of the SDP on the capacity building, and then on the level of poverty.

Figure 2: *Theoretical basis of the study*

Links between the external environment, assets base, activities of the SDP and Poverty



Source: Developed by the author

Objectives

The main objective of this paper is to study to what extent the SDP has helped its beneficiaries to develop an assets base to get out of poverty in the Ratnapura district of Sri Lanka.

Methodology

The study employed a random sampling method to collect data from a cross section of 170 households living in the all 17 Divisional Secretariat (DS) divisions in the Ratnapura District. The main criterion in selecting the above households was that they needed to be beneficiaries of the SDP since 1995. We obtained data through a structured questionnaire.

Dependent Variable

Table 1: Categorisation of income poverty groups for 1995 and 2009

Households category	Official poverty line for Ratnapura district in 1995 = 833 LKR ^a	Official poverty line for Ratnapura district in 2009 = 2907 LKR ^a
	Formula	Formula
Extreme poor	Per Capita Monthly Income (PCMI) \leq 416 LKR	Per Capita Monthly Income (PCMI) \leq 1453 LKR
Vulnerable	416 LKR \leq PCMI \leq 1666 LKR	1453 LKR \leq PCMI \leq 5814 LKR
Viable	1666 LKR \leq PCMI \leq 2499 LKR	5814 LKR \leq PCMI \leq 8720 LKR
Sustainable	PCMI \geq 2499 LKR	PCMI \geq 8720 LKR

Source: Department of Census and Statistics of Sri Lanka (2004)

a. LKR (Sri Lankan Rupees)

In the next step we examined the movement (transition) between these four categories from 1995 to 2009. The objective was to determine what effect, if any, the SDP has had on its beneficiaries over the past 13 years.

Table 2: Categorisation of households groups based on the direction of the transition between income poverty categories, 1995-2009, Ratnapura district, Sri Lanka

Households Group	Direction of the transition
Unsuccessful	From viable/sustainable To Vulnerable, From vulnerable/viable To extreme poor, Or Remained in extreme poverty
Struggling	Remained vulnerable
Successful	From extreme poverty To vulnerable/viable, Or From vulnerable To viable
Most successful	From extreme/vulnerable/viable To sustainable, Or Remained in viable/sustainable

Source: Akter, et al., (2008)

Independent variables:

As the data obtained for the development of capital assets (financial, natural, physical, human and social capital) of households were qualitative, we used dummy (categorical) variables to capture the development of each capital asset subject to some criterion that must be fulfilled by each household in order to identify that the household is one which was able to develop its respective capital assets.

The dummy variable to capture the development of natural capital (D_{NC}):

$D_{NC} = 1$ (Those who have been able to develop natural capital asset)

0 (Those who have not been able to develop natural capital asset)

Criterion (subjective judgments):

The following criterion or a combination of criteria should be satisfied by a beneficiary of the SDP in order to fall in $D_{NC} = 1$: **A or B or C or D or any other combinations of A B C D.**

- A:** The SDP helped me to purchase a land for farming activities (i.e. tea cultivation)/ business activates (i.e. opening a retail shop)
- B:** The SDP helped me to build up new livestock (i.e. poultry farming, purchasing a cow for drinking milk/selling milk/making dairy products etc) or to expand the existing livestock in numbers and/or in quality
- C:** The SDP helped me to continue/expand the activities of the existing land (i.e. tea cultivation, vegetable and fruits cultivation etc)
- D:** The SDP assured me the security and the sustainable use of water sources for both survival and livelihood needs

Accordingly, the same method with appropriate criteria was applied to develop four dummy variables for physical, human, financial and social capital assets (Gunasinghe 2010, pp 262-265). The dummy variable for the development of financial capital was excluded from the model due to the high correlation that existed between this variable and the dummy variable used to capture the development of physical capital.

Multinomial Logistic Regression (MNL):

$$\text{Log} \left(\frac{P(Y_i = m)}{P(Y_i = 4)} \right) = f(D_{NC_i}, D_{PC_i}, D_{HC_i}, D_{SC_i}, Edu_i, Age_i, Ndepend_i, D_{Gender_i}, \varepsilon_i) \dots 1$$

The second equation is run only for the significant variables identified in the first equation.

$$\text{Log} \left(\frac{P(Y_i = m)}{P(Y_i = 4)} \right) = f(D_{NC_i}, D_{PC_i}, D_{HC_i}, Edu_i, \varepsilon_i) \dots 2$$

Where, $D_i = 1$ (Those who have been able to develop respective capital asset)

0 (Those who have not been able to develop respective capital asset)

$j = \text{NC}$ (natural capital), PC (physical capital), HC (human capital), and SC (Social capital)

$\text{Edu} = \text{Years of schooling}$,

$\text{Age} = \text{Age level}$

$N_{\text{depend}} = \text{Number of dependents in the family}$

$D_{\text{gender}} = 0 : \text{Female household head}$

1 : Male household head

$\varepsilon_i = \text{Error term}$

The dependent variable (Y) of equation 1 and 2 has four categories:

M=1 is “unsuccessful households”; M=2 is “struggling households”;

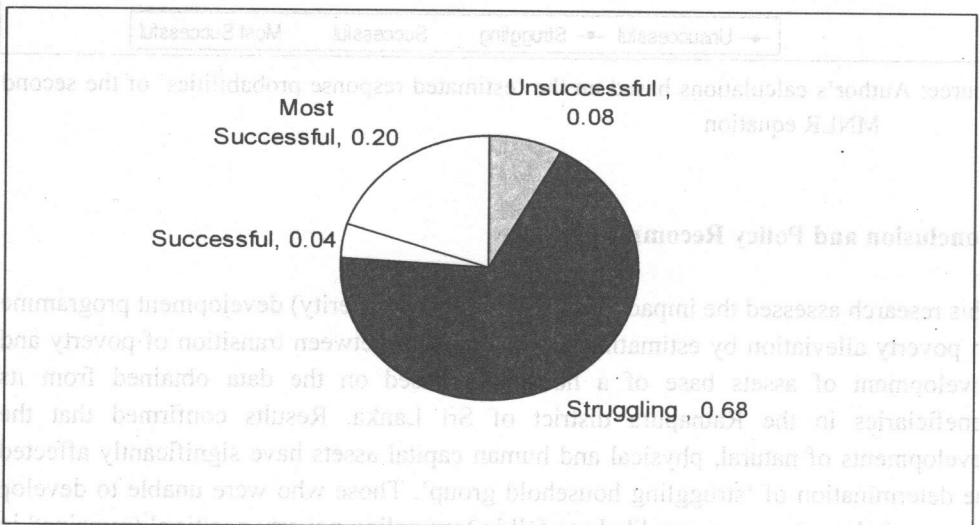
M=3 is “successful households”; and M=4 is “most successful households”.

Reference category is “most successful households”(M=4).

Results

Figure 3 clearly shows that the probability of a household falling into the ‘struggling’ poverty position is very high (0.68). Furthermore, the mean probability of a household falling into the successful or most successful poverty positions is 0.04 and 0.20 respectively. This means that there is a chance for every 68 households out of each 100 households to fall into a struggling position.

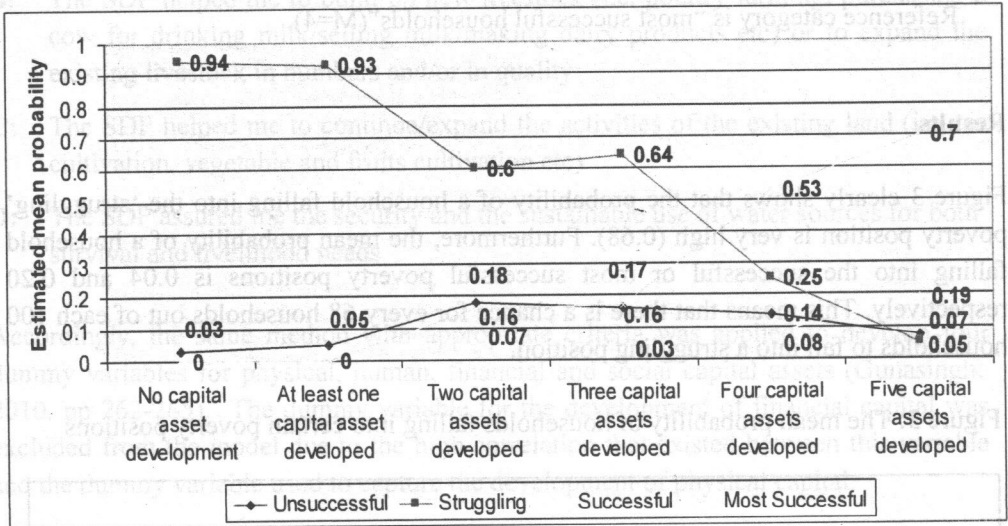
Figure 3: The mean probability of households falling into certain poverty positions



Source: Author’s calculations based on the ‘estimated response probabilities’ of the second MNL equation

Figure 4 shows the relationship between the developments of a household’s capital assets and the mean probability to fall into the poverty household group. Figure 4 clearly shows that with the increase of households’ ability to develop more capital assets, there is less probability for those households to have regressed in terms of achieving higher living conditions. Likewise, households who had developed more than three capital assets have reported a speedy positive progress to become classifiable as ‘most successful’.

Figure 4: The relationship between the development of capital assets and the mean probability of a household to fall in a poverty household group



Source: Author’s calculations based on the ‘estimated response probabilities’ of the second MNL equation

Conclusion and Policy Recommendations

This research assessed the impact of the Samurdhi (prosperity) development programme on poverty alleviation by estimating the relationship between transition of poverty and development of assets base of a household based on the data obtained from its beneficiaries in the Ratnapura district of Sri Lanka. Results confirmed that the developments of natural, physical and human capital assets have significantly affected the determination of ‘struggling household group’. Those who were unable to develop these capital assets were more likely to fall in ‘struggling poverty position’ (remained in vulnerable poverty for a long period). A main policy message is that it is pivotal for the SDP to reassess and reformulate its policy strategies to strengthen assets base of its beneficiaries in order to alleviate their poverty level.

References

Akter S, Farrington J, Deshingkar P and Freeman A (2008): ‘Livestock, vulnerability, and poverty dynamics in India’, Findings from the ODI Livelihood Options Project Panel Survey. Discussion Paper No. 10. Targeting and Innovation. ILRI (International Livestock Research Institute), Nairobi, Kenya.

- Cahn, M (2002): 'Sustainable Livelihoods Approach: Concept and Practice', 3rd Biennial Conference of the International Development Studies Network of Aotearoa, New Zealand. Massey University, 5– 7December 2002.
- Gunasinghe, C (2010): 'The significance of capital assets in moving out of poverty: A case study of Sri Lanka', *South Asia Economic Journal*, Vol11 (2), pp. 245 – 285. Available at <http://sae.sagepub.com/content/11/2/245>
- Hengsdijk H., Meijerink G.W., Tonnejck F and Bindraban P.S. (2005): 'An analytical framework for linking biodiversity to poverty', Report 106, Plant Research International B.V., Wageningen, Netherlands.
- Salih R (2000): 'The Samurdhi Poverty Alleviation Scheme', (a draft paper prepared for the Social Security Division of the ILO), Geneva. Available at: http://www.devnet.org.nz/conf2002/papers/Cahn_Miranda.pdf (Accessed 02 April 2008)