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THE SUSTAINABLE LIVELIHOODS INDEX: A TOOL TO ASSESS THE ABILITY AND PREPAREDNESS OF THE RURAL POOR IN RECEIVING ENTREPRENEURIAL PROJECT

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ABSTRACT

This paper describes the Sustainable Livelihoods Index (SLI) as a useful tool in assessing the livelihood elements of the rural poor households. Income data alone may not fully reflect the suitability of the hardcore poor in receiving government assistance in the form of entrepreneurial projects. In this case rendered projects do not take into account the ability and preparedness of the poor in receiving the projects. The main objective of this study is to measure comprehensively all the livelihood elements of the rural poor households through developing a Sustainable Livelihood Index (SLI). This index was based on Sustainable Livelihood Approach (SLA) framework. A total of 22 livelihood assets and outcomes indicators were identified from the data set and broadly grouped into five groups of assets namely human, physical, natural, social, financial assets and 2 groups of livelihoods outcomes which are food security and health status. Then, an aggregate SLI for each household was constructed by averaging all the seven groups of livelihood assets and outcomes indices with an equal weight. Overall, about 73% of considered households were attained an SLI below than 0.5, with a mean of 0.47. With regard to household income that has been used as a poverty measurement, the study found that the Sustainable Livelihood Index (SLI) was moved in tandem with the total of household income. There are 90.91% of the households in hardcore poor group were obtained SLI below 0.5 indicating that households with a low income will also have a low SLI. Although income and SLI were moved in the same direction, this paper suggests the use of SLI as a more analytically rigorous tool to assess the ability and preparedness of the rural poor than the regular use of household income level alone. Besides it may help the local authorities to broaden their scope in a manageable way as to ensure the sustainability of a given project.

Keywords: Sustainable livelihood index, Rural poor, Ability, Preparedness, Entrepreneurial projects.

Contribution/ Originality

This study attempts to develop an index that could capture comprehensively all livelihoods' element of the rural poor, namely Sustainable Living Index (SLI) to assess the ability and preparedness of the rural poor in receiving entrepreneurial project channeled by government.

Normally, assistances channeled to the poor would be based on income data. However income data alone cannot fully reflect the ability and preparedness of the poor in receiving the development projects. Thus, the developed SLI might be treated as additional information in assisting the local authority in selecting an appropriate rural poor to receive government assistance project, adjacent to the regular use of household income level. Moreover, this SLI is slightly different with indices developed by previous authors that mostly based on macro level data to evaluate the well-being of the poor and developmental process of the country by regions. This index concentrates on formation of micro-index that base on the livelihood assets possession of every household. Hence, this study will contribute to the variation of knowledge particularly in developing of indices that based on Sustainable Livelihood Framework.

1. INTRODUCTION

Malaysia tremendously succeeded in combat against poverty. For more than 50 years, the Malaysia government has implemented various development programs in alleviating poverty by providing financial and technical help. Its poverty rate has fallen significantly since independence due to various strategies and poverty eradication programs undertaken since the implementation of the New Economic Policy (1971-1990), National Development Policy (1991-2000) and the current National Vision policy (2001-2010). The poverty rate has fallen from 52.4 percent in 1970 to 6.1 percent in 1997. It rose slightly to 7.5 percent in 1999 due to the Asian Financial Crisis but declined to 3.8% in 2010 with a rate of 1.7% of urban poverty and 8.5% of rural poverty (EPU, 2006; 2010; Chamhuri, 2009).

Despite the successes in reducing poverty, there are vulnerable sections of the population remain unchanged due to several disadvantaged circumstances. In the effort to develop a more inclusive approach, the economic development model is being pursued. Capacity building in Malaysia in the context of alleviation of socio-economic inequalities is being implemented by expanding the economy, and at the same time giving subsidies to the needy (Zulkarnain and Isahaque, 2013). However, by giving subsidies for a long term tend to create dependency on government subsidies syndrome among the poor. English proverb said that "give a man a fish and you feed him for a day; teach a man to fish and you feed him for a lifetime'. Comprehending that, the government has changed the approach of poverty reduction by introducing development projects for the poor in order to improve their standard of living.

Normally, assistances channelled to the poor would be based on income data. This is because universally, the definition of poverty is normally referred to failed income “dollar-a-day” by World Bank. However, for country specific purposes it is standard recommended practice to use national poverty lines which is referring to minimum consumption requirements of an average sized household for food, shelter, clothing and other non-food needs (Zulkarnain and Isahaque, 2013). However income data cannot fully reflect the ability of the poor in receiving government assistance in the form of particular development projects such as entrepreneurial activities or agricultural projects. The fact that rendered projects does not take into account the ability and preparedness of the poor in receiving the projects. Consequently, a given project does not

sustain. Thus, alternative framework or method needed in order to assess the capability of the poor through understanding their livelihoods before giving project to them.

The sustainable livelihoods approach (SLA) is one of the methods to enhance understanding of the livelihoods of poor households. Unlike other methods, the SLA is a multidimensional, integrated and rational approach to poverty eradication. This concept was first introduced by Brundtland Commission on Environment and Development in 1987 and later expanded at United Nations Conference on Environment and Development in 1992 (IISD, 2013). As a concept, sustainable livelihoods approach is held to provide a more rounded picture of the complexities of living and surviving in poor communities than understandings based on measures of income, consumption and employment (Brocklesby and Fisher, 2003). A livelihood comprises the capabilities, assets and activities required for a means of living and it is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base (Chambers and Conway, 1992; Scoones, 1998). The fundamental feature of the sustainable framework is an analysis of five different types of assets own by individuals to build their livelihoods which consists of natural, social, human, physical and financial capital (Carney, 1998; Ashley and Carney, 1999; Bebbington, 1999).

In fact, there are many authors has develop various indices in assessing the livelihood of the poor. The best known composite index of social and economic wellbeing with respect to Sustainable Livelihood Approach is the Livelihood Security Index (LCI) developed by Lindenberg (2002) and Sanzidur and Shaheen (2010). LCI is one of the most important social indicators for assessing the quality of life, coupled with meeting the basic needs of human beings. The basic aim of this index was use in measuring progress at the family and community level through identifying the constraints to peoples' well-being as well as their assets and opportunities. Rai *et al.* (2008) also developed an index with respect to sustainable livelihood concept, namely Livelihood Index. A composite integrated livelihood index was developed based on macro level data to evaluate the developmental process of the country by regions. On other dimension, (Hahn *et al.*, 2009) includes vulnerability indicators in developing livelihood index namely Livelihood Vulnerability Index (LVI). LVI used to estimate climate change vulnerability based on eight domains namely socio-demographics, livelihoods, social networks, health, food and water security, natural disasters and climate variability. Data were aggregated using a composite index and differential vulnerabilities were compared between districts in Mozambique.

Thus, this study attempts to develop an index that could capture comprehensively all livelihoods' element of the rural poor, namely Sustainable Living Index (SLI) to assess the ability and preparedness of the rural poor in receiving entrepreneurial project channeled by government. Slightly different with indices discussed above, this index concentrates on formation of micro-index that base on the livelihood assets possession of every household. The developed SLI might be treated as additional information in assisting the local authority in selecting an appropriate rural poor to receive government assistance project, adjacent to the regular use of household income level.

2. METHODOLOGY

This study was conducted in the district of Baling in the state of Kedah, Malaysia. There are seven counties in Baling, namely Siong, Baling/Bongor, Pulai, Kupang, Tawar, Teloi Kanan and Bakai. There are about 200 villages in this district. Based on '*e-sinar*' database, *Kupang* County that comprising of 41 villages has the highest number of hard-core poor incidences. In determining the sampling frame for this study, the latest list of hard-core poor households in *Kupang* was obtained from the District Office of Baling in October 2012. According to the list provided, there were only 190 households in this group. Based on the income information in the list, households that do not meet the criteria of hard-core poor which have an income below than RM380 have been further excluded. After the exclusion, there were 150 households left to be surveyed.

Data was collected using a structured questionnaire. A questionnaire design was based on the Sustainable Livelihood Analysis (SLA) framework as suggested by the (Department for International Development (DFID), 1999). This approach was used to identify asset ownership, strategy implemented and outcome achieved, institution influenced and vulnerability context faced by hard-core poor households in sustaining their livelihoods. The questionnaire was divided into eight parts, namely socio-demography information, human asset, physical asset, financial asset, social asset, natural asset, food security and health status. The questionnaire and interview were administered using *Bahasa Melayu*. All variables included were in the form of nominal, ordinal or interval data. The detail of the variables for each section was presented in the Table 1.

A specific Sustainable Livelihood Index (SLI) of rural poor household was developed to identify potential households that are able to participate in poverty eradication programs or projects. The Sustainable Livelihood concept has multidimensional aspects. It includes livelihood asset, livelihood strategy, livelihood outcome, institutional involvement, and vulnerability context. Therefore, it is important to select parameters, which are representative indicators of all these sectors of human-life. With respect to assessing the ability and preparedness of the poor in receiving the development project, this study had identified 22 livelihood assets and outcomes indicators from the data set and were broadly grouped them under five groups of assets namely human, physical, natural, social, financial assets and two groups of livelihoods outcomes namely food security and health status (Table 1).

Index was then constructed following Hahn *et al.* (2009). Indicators were identified and it is assumed that each indictor had equal weight to the individual groups of livelihood assets and outcomes. The indicators was then standardized following the procedure adopted in measuring Life Expectancy in Human Development Reports (Hahn *et al.*, 2009). For example, a standardized indicator j of a household was given by:

$$Index_{sd} = \frac{S_d - S_{min}}{S_{max} - S_{min}}$$

Where, S_d was the original sub-component for community d, and S_{min} and S_{max} were the minimum and maximum values, respectively, for each sub-component determined using data from the same community surveyed.

An aggregated SLI for each household, were then constructed by averaging of all the seven groups of livelihood assets and outcomes indices with an equal weight of each. Each of the group's indices can be shown separately and an aggregated measure of Sustainable Livelihood Index can be displayed.

3. RESULTS AND DISCUSSION

In Malaysia, the poor was identified based on the comparisons of total household income with the Poverty Line Income (PLI). In 2012, for Peninsular Malaysia, the poor are divided into two groups, namely the poor and the hard-core poor with a PLI of RM760 and RM380. Based on the survey, this study was divided households into four categories, namely hard-core poor with an income of less than RM380, poor with an income of RM381-RM760, low-income group (RM761-RM1200) and the middle income group with a total household income of more than RM1200 per month. This study used equivalised income as a measure of household income, which takes into account of the differences in a household's size and composition.

Table 2 shows the pattern of average total household income (THI) and average Equavalised Total Household Income (ETHI) without income transfer; and average SLI by group of household. The study found that SLI move in tandem with ETHI and THI used as a poverty measurement. On average the hard-core poor and the poor had a lower SLI of 0.35 and 0.46 respectively. This result means the estimation of poverty through total household income already reflects the livelihood assets ownership as a whole. In this case, household income very probably plays a significant role in the increased of assets of the hard core poor.

On the other hand, the percentage of 90.91% of the household in hard-core poor group having SLI below 0.5, indicates that households with a low income will have a low SLI (Table 3). But, interestingly this result also revealed that not all high income's household having high SLI, which is most of them having SLI less than 0.5. There is no much variation in SLI were achieved by household group, which was overall finding showed that about 73% of the respondents having low SLI with an index less than or equal to 0.5.

Thus, it is important to have an index by individual group of asset. This information is useful to help government and policy makers in channelling all required assistances to the right target groups, based on their ability and preparedness. In fact, once they are ready to accept the development project given, the possibility of them to run the project continuously probably high. In long term, it will lead to the sustainable livelihood of the hard-core poor. Table 4 shows the descriptive analysis of the individual asset group's indices by their income group. The livelihood outcome components such as food security and health status were also included in the calculation of SLI.

On average, the hard-core poor group obtained relatively low index at less than 0.5 for all the asset groups except for physical asset. Most of respondents from all income groups were obtained

high index for physical asset ranged between 0.66 and 0.79. This result indicated that although respondents were among those with low incomes and even having an income below the poverty line, but their basic needs such as home condition, household furniture, vehicle possession, an access to water resources and electricity were adequate. As for human asset, among indicators to represent human asset in this study is the highest education level attain by household members including head of household (HH). Education level of HH reflects the level of awareness of the importance of higher education of children, access to information and capability to improve family economic status. From the analysis, it shows that almost half (49%) of the HH has no qualification, while the highest level attained was only at Malaysian Certificate of Education (MCE) or *Sijil Pelajaran Malaysia* (SPM) level (8.7%).

The assistances particularly in terms of financial support given by the government at the present time might be appropriate for the hard-core group that having low SLI in most of the livelihoods asset. However this kind of assistance does not guarantee the sustainability of the poor's livelihood, otherwise it will promote their reliance on government assistance. Assistance in term of entrepreneurial project is the better safeguard to the sustainability of the poor's livelihood. However result showed that most of the hard-core poor in *Kupang* were faced with the concern of low human capital especially in the level of education. This result indicates that the assistance in term of entrepreneurial project which requires knowledge of high technology is not appropriate for this group. Low levels of education will result in slow technology transfer and further lead to inefficiencies in the implementation of entrepreneurial project. However, to seizure this concern, the entrepreneurship projects that will be given to households must be diverse in terms of technical knowledge requirements, financial capital required and the level of risk that may be encountered. Training and intensive coaching are necessary to increase their technical knowledge and skill to ensure the sustainability of the project and thus the sustainability of their livelihood. Moreover, to address this problem in the long term, it is necessary to raise awareness of education among the poor's children.

On the other hand, the study found that on average the natural asset for all groups of household was the lowest, ranging from 0.07 to 0.1 as compared to other livelihood assets. Thus, the entrepreneurial activities introduced must not be based on land use. The home based entrepreneurial activities such as food processing, telecommunication, retailing, sewing and crafts may be more appropriate. However, the agro-entrepreneurial activities might be possible with the opening of agricultural land in rural areas, especially in the areas that inhabited by the poor. Even they also can involve in the activity within the value chain of agricultural activities such as marketing and retailing job. Attention should also be given towards an increasing their financial asset. Result showed that all respondents were obtained low SLI for the financial asset ranged between 0.3 and 0.48. Thus, approaches toward enhancing their financial status such as encouraging them to involve in microcredit system and cooperative might be alleviating the poor out of poverty trap.

4. CONCLUSION

The objective of this paper is to assess the ability and preparedness of the rural poor in receiving entrepreneurial project channeled by government through developing an index called 'Sustainable Livelihood Index'. The index was developed based on the Sustainable Livelihood Analysis (SLA) framework that concentrate on five group of livelihood assets namely human, physical, social, natural and financial assets. Understanding the current situation of livelihood assets owned by the poor is very crucial for local authorities or related agencies for appropriate assistance.

From the analysis it shows that the higher the income, the higher the SLI will be. It can be concluded that household income plays a significant role in the increasing the livelihood assets. Most of respondents from all group of income attained an SLI between 0.26 and 0.5. The results also showed the hard-core poor group were obtained relatively low index at less than 0.5 for all asset groups except for physical asset. Natural, human, financial and social asset were appeared to be the least asset possessed by the poor. Thus, the entrepreneurial projects the will be introduced to the poor must be diverse in terms of technical knowledge and capital requirements and the level of risk that may be encountered. The home based entrepreneurial activities such as telecommunication, food processing, retailing, sewing and craft might be more appropriate. However financial support from government and other related agencies by encouraging them to involve in microcredit and cooperative systems could enhance their financial status to ensure smooth implementation of the entrepreneurial project.

The fact that entrepreneurship stands as a vehicle to improve the quality of life for individuals, families and communities and to sustain a healthy economy and environment. However, the acceptance of entrepreneurship as a central development force by itself will not lead to rural development and the advancement of rural enterprises. What is needed in addition is an environment enabling entrepreneurship in rural areas. The existence of such an environment largely depends on the preparedness of the community and policies promoting rural entrepreneurship.

The preparedness of the community can be assessed by studying at their livelihood assets possession and their willingness to accept the project proposed. This study suggests the use of SLI as a more analytically rigorous tool to assess the ability and preparedness of the rural poor than the regular use of household income level alone. Besides it may help the local authorities to broaden their scope in a manageable way as to ensure the sustainability of a given project.

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Table-1. List of indicators for livelihoods assets and livelihood outcomes

Human Asset	Physical Asset	Social Asset	Financial Asset	Natural Asset	Livelihood Outcomes
Highest level of education possessed by each member of the household	The main water source for drinking	Holding positions in society	Total of income from main occupation	Ownership of land can be used for agriculture	Food Security
Working experience for the current job	The main water source used by the family for other purposes such as cooking and washing	Involvement in agriculture association	Income source from other economics activities/ part time job	Natural resources assistance from relevant agencies (Eg:soil, seeds, fertilizers, pesticides, etc.)	Health status
Knowledge level of the current job	Type of toilet	Relationships with officials from relevant agencies which is responsible providing assistance *(Examples: Welfare Department,Zakat,Department of agriculture, KEDA, Department of fisheries, PPK and others*	Other sources of income(from non-economic activities) such as from children's, pension, zakat, scholarship, etc.	Levels of natural resource use given	
Knowledge concerning how to obtain information about the aids from the government or any other agencies	Housing characteristics	The level of involvement in politics party		Ownership oflivestock	
	The main fuel type usually used by household for cooking				
	Amenities access to information				
	Vehicle ownership				
	Home ownership				

Table-2. The pattern of THI, ETHI and SLI by group of household in Kupang County, October 2012

Group of household	THI	ETHI	SLI
Hard-core poor	50.00	31.25	0.38
Poor	575.00	272.27	0.46
Low income group	1020.03	407.80	0.46
Medium income group	1688.33	763.54	0.50

Table-3. The distribution of household group by level of SLI

SLI range	0 - 0.25		0.26 - 0.5		0.51- 0.75		0.76 - 1		Total	
Group of household	No.	%	No.	%	No.	%	No.	%	No.	%
Hardcore poor	0	0	10	90.91	1	0.09	0	0	11	100
Poor	0	0	37	77.08	11	22.92	0	0	48	100
Low income	0	0	24	80.00	6	20.00	0	0	30	100
Medium income	0	0	38	63.33	22	36.67	0	0	60	100

Table-4. Descriptive analysis of individual livelihood asset by group of household.

Aset Group	Hardcore poor	Poor	Low income	Medium income
Physical	0.79	0.71	0.68	0.66
Financial	0.30	0.35	0.34	0.48
Social	0.12	0.10	0.11	0.15
Human	0.25	0.57	0.62	0.56
Natural	0.07	0.08	0.08	0.10
Food Security	0.60	0.55	0.55	0.59
Health	0.66	0.91	0.84	0.90
SLI	0.35	0.42	0.44	0.48