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Greening Economics and Sustainable Livelihood and Socio-economic Well-being of the Low income Households in Malaysia

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ABSTRACT

Green economy is the emerging concept in the way of sustainable livelihood and poverty alleviation through reducing of environmental risks and ecological scarcities, carbon emissions and pollution as well as enhance energy and resource efficiency and prevent the loss of biodiversity, ecosystem services in Malaysia. The improvement of low standard income households in a certain and remarkable stages through restructuring of society for ensure sustainable livelihood and socio-economic well-being are very important issues in Malaysia to become a developed country by 2020. This study aims to investigate impact of greening initiatives on socio-economic well-being and sustainable livelihood of the low income households in Malaysia from the existing review of studies. In general, this assessment review study has revealed that the green economy has a significant role on the national economy towards promoting green technology in economic and social developments through non-renewable fuels, safeguards and minimises the environmental degradation due to carbon emissions, as well as green products for Income Generating Activities (IGAs) of the low level income group in Malaysia. Finally this study provided necessary policy recommendations based on survey output for policy implications where it can help for development of effective strategies of green corporations for poverty alleviation, socio-economic well-being and sustainable livelihood through Income Generating Activities (IGAs) of lower income group in Malaysia.

Key words: Green economy, sustainable development, poverty alleviation, socio-economic well-being, Malaysia

INTRODUCTION

Now a days Green economy has considered one of important way of sustainable development through improvement of human well-being and social equity through reducing environmental risks and ecological scarcities as well as reduces carbon emissions and pollution, enhance energy and resource efficiency and prevent the loss of biodiversity, ecosystem services as well as reduces of

poverty (Kronbak and Vestergaard, 2011; Hezria and Ghazalib, 2011; DiGregorio *et al.*, 2003). On the other hand, Greening agriculture, natural assets, clean water and sanitation Renewable energy and Eco-tourism are enhancing food security, Reducing deforestation and increasing reforestation, support agriculture, rural livelihoods, ensure provision of clean water and sanitation services and cost-effective energy which are integrate reducing poverty (Kronbak and Vestergaard, 2011; Hezria and Ghazalib, 2011; Nair, 2010; Courtenay, 1987; Das, 2002; Chua and Oh, 2011; DiGregorio *et al.*, 2003).

Low income persistent of social inequity, deprive of access to education, healthcare, credit availability, income opportunity and secure property rights (Kronbak and Vestergaard, 2011; Courtenay, 1988; Nor, 1991; Nair, 2001). A key feature of a green economy is that it seeks to provide diverse opportunities for economic development and poverty alleviation without liquidating or eroding a country's natural assets in Malaysia (Kronbak and Vestergaard, 2011; Nair, 2010; Chua and Oh, 2011). Especially ecosystem goods and services are a large component of the livelihoods of poor rural communities and ecosystems and their services provide a safety net against natural disasters and economic shocks as well (Kronbak and Vestergaard, 2011; Nair, 2010; Chua and Oh, 2011).

Though Malaysia has been successfully declined the rate of overall poverty to a negligible percentage but they are still facing big challenges to provide enough opportunities for Income Generating Activities (IGAs) to low income group to come up certain standards in certain areas and states as usual. Where about 40% of Malaysian households remain in the low income category, earning less than RM 1,500 a month, of which 77.2% are bumiputera and many are located in Sabah and Sarawak. This group requires specific policy interventions especially on capability development in order to achieve upward mobility, income disparities between ethnic groups and regions must still be actively addressed. While economic growth will never on economic density and agglomeration, inclusiveness requires development be equally spread out and opportunities be equitably accessible (National Economic Advisory Council, 2010). The improvement of low standard income households in a certain and remarkable stages through restructuring of society for ensure sustainable livelihood and socio-economic well-being are very important issues in Malaysia to become a developed country by 2020. It has threatened to declare themselves as a completely developed country by 2020 (Menon, 2009; Nor, 1991; Singh, 2001; Siwar and Talib, 2001). There are numerous initiatives being undertaken by the Government mainly in the form of direct financial assistance, physical and socioeconomic development programmes and skills training and upgrading (Government of Malaysia, 2001, 2006, 2010).

In such issues very few empirical studies have done to analysis of real impact of greening initiatives on socio-economic well-being and sustainable livelihood of the low income households in Malaysia .Thus, present study has taken timely initiative to conduct a rigorous study to have a look of impact of greening initiatives on socio-economic well-being and sustainable livelihood of the low income households in Malaysia. This research output will be able to draw out a future direction for effective strategies of green corporations for income generating activities and ensure development of low income group in Malaysia.

BACKGROUND OF THE STUDY

CONCEPTS OF GREEN ECONOMY

Green economy: The origin of green economy as one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. In its

simplest expression, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive (Kronbak and Vestergaard, 2011). In a green economy, growth in income and employment should be driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency and prevent the loss of biodiversity and ecosystem services (Chua and Oh, 2011; Kronbak and Vestergaard, 2011; Pearce *et al.*, 1989). These investments need to be catalysed and supported by targeted public expenditure, policy reforms and regulation changes. The development path should maintain, enhance and, where necessary, rebuild natural capital as a critical economic asset and as a source of public benefits, especially for poor people whose livelihoods and security depend on nature (Chua and Oh, 2011; Kronbak and Vestergaard, 2011; Pearce *et al.*, 1989).

Green policies in Malaysia: There are several policies have been formed in Malaysia to emphasis on sustainable environmental. It has been started since the Third Malaysia Plan to provide keen importance of environmental protection in the economic development has become an important agenda in Malaysia's five-year development plans (Government of Malaysia, 1976). Furthermore, National Energy Policy in 1979 (NEP79), was formulated with three objectives: (i) supply: to ensure the provision of adequate, secure and cost effective energy supplies through developing indigenous energy resources, both non-renewable and RE resources using the least cost options and diversification of supply sources both from within and outside the country, (ii) utilization: to promote EE and discourage wasteful and non-productive patterns of energy consumption and (iii) environment: to minimize the negative impacts of energy production, transportation, conversion, utilization and consumption on the environment. During the Sixth Malaysia Plan, the efficient management of environment has been given attention to curb with the environmental degradation and to ensure a more balanced development (Government of Malaysia, 1976). Moreover, under the Seventh Malaysia Plan, the Malaysian Government has shown its commitment in integrating economic, social and environmental aspects in the country's development process to meet the objectives of economic growth and environmental conservation (Government of Malaysia, 1976).

Eighth Malaysia Plan (Government of Malaysia, 2001) is focused on achieving sustainable growth by promoting the use of cleaner technologies and promote overall environmental management practices. The National Environment Policy has been implemented during RMK-8 to integrate environmental aspects in development activities and decision-making, fostering economic growth and long-term progress and to protect and improve environmental quality. There were, strong efforts toward the realization of sustainable economy have been shown under the Ninth Malaysia Plan (Government of Malaysia, 2006) which emphasized on the optimal balance between development and the environment through the use of green technology. The establishment of the Ministry of Energy, Green Technology and Water (KeTTHA) and the launch of National Green Technology Policy and the National Climate Change Policy clearly reflected the Malaysia Government's commitment to enhance the country's economic development and at the same time minimize the impact of development on the environment.

Finally, in the Tenth Malaysia Plan (Government of Malaysia, 2010), the Malaysian Government's is committed to turn Malaysia into a high-income country that is both inclusive and sustainable by the year 2020. The 'Green gross domestic product (GDP)' concept was introduced under the New Economic Model (NEM) to allow proper consideration of the impact of growth on the environment and the appropriate design of measures to address environmental concerns. Furthermore, present government's promote low carbon technology and ensure sustainable

development while conserving natural environment and resources, NGTP2009 was launched in July 2009 by the Prime Minister (PM) of Malaysia, Datuk Seri Najib Tun Abdul Razak, with objectives: (i) to minimize growth of energy consumption while enhancing economic development, (ii) to facilitate the growth of the GT industry and enhance its contribution to the national economy, (iii) to increase national capability and capacity for innovation in GT development and enhance Malaysia's competitiveness in GT in the global arena, (iv) to ensure sustainable development and conserve the environment for future generations and (v) to enhance public education and awareness on GT and encourage its widespread use, EE and RE will further be promoted and supported under this policy (Government of Malaysia, 2006, 2010). The NGTP2009's goals are aimed at progress and improvements made in major sectors such as energy, buildings, water and waste management and transportation as well as R and D, innovation and commercialization through collaboration with local and multi-national companies (Kronbak and Vestergaard, 2011; Hezria and Ghazalib, 2011; Chua and Oh, 2011).

Greentech in Malaysia: Malaysia Energy Centre (MEC) was established in 1997 for the development and coordination of energy research (Kronbak and Vestergaard, 2011; Chua and Oh, 2011). MEC members include individuals and companies across the entire spectrum of Malaysian energy industry such as electricity power industry, oil and gas industry, research institutions, institutions of higher learning, service providers, suppliers and energy consumers. MEC's four major functions are in: (i) energy policy research, (ii) guardian and repository of the national energy database, (iii) promoter of national EE and RE programmes and (iv) coordinator and lead manager in energy research and development and demonstration projects. During the Malaysian Budget 2010 on October 2009, the PM initiated the rebranding of MEC (Kronbak and Vestergaard, 2011; Chua and Oh, 2011). The rebranding has transformed MEC into the focal point for the development of GT in Malaysia. Malaysian Green Technology Corporation or Green-Tech Malaysia (GTM) is now the new MEC (Kronbak and Vestergaard, 2011; Chua and Oh, 2011; Oh *et al.*, 2010; Nair, 2010).

Poverty and livelihood in Malaysia: In the last three decades the Malaysian economy has experience a rapid macro-economic development and strong track record of tackling poverty, having effectively started fight against it in 1971, with the announcement of the New Economic Policy. The rapid growth of economy has also been reflected in rising per capita income. The GDP per capita income had increased from RM 1022.00 in 1970 to RM 3599.00 in 1985 to RM 4426.00 in 1990 to RM 14582.00 in 2000 to RM 18,840 in 2005 and to RM 23,066 in 2006. On the other hand poverty rate had also declined consequently year by year from 49.3% in 1970 to 16.5% in 1990 to 5.1% in 2002 and to 3.6% in 2007. In other case number of poor household had also dramatically declined since 1970. The total number of poor household was 907120 in 1970. By 1990 it went down to 574500. It was also estimated 267900 in 2002 and 209,000 by 2007 based on average household size of 4.6 persons (Government of Malaysia, 1971, 2001, 2006, 2010).

The remarkable economic success and growth has enabled Malaysia to significantly reduce the incidence of poverty in the last three decades. The poverty was merely 49.3% in the 1970 to 16.5% in 1990 and reduces poverty further to 6.7% in 1997. The number of poor households has declined significantly from 1,00,0000 HHs in 1970 to 274200 HHs in 1997. On the other hand the East Asian financial crisis starting in July, 1997 and has affected Malaysian economic growth in 1998.

Table 1: Poverty incidence in Malaysia (%) 1970-2007

Year	Poverty Incidence		Incidence of hardcore Poverty	
	Poverty rate (%)	No. of households (HHs)	Hardcore poverty rate (%)	No. of households (HHs)
1970	49.3	1,000,000	-	-
1976	42.4	9,75,800	-	-
1984	20.7	6,49,400	-	-
1990	16.5	5,74,500	3.9	1,37,100
1995	8.7	3,65,600	2.1	88,400
1997	6.1	2,74,200	1.4	62,400
1999	8.5	3,60,100	1.4	66,000
2002	5.1	2,67,900	0.05	52,900
2004	5.7	311300	1.2	67300
2007	3.6	209,000	0.7	38,400

Various Malaysia's five year plan: (Government of Malaysia, 1971, 2001, 2006, 2010)

As a result, poverty incidence rose from 6.1% in 1997 to 7.5% in 1999 while number of poor HHs also increased from 2,74,200 HHs to 360100 HHs in the same period of time. In 2002, with the recovery of the economy, the poverty incidence has declined from 5.1% in 2002 to 3.6% in 2007 while the number of poor HHs also decreased from 2, 67,900 HHs to 209,000 HHs in the same period of (Government of Malaysia, 1971, 2001, 2006, 2010).

However the incidence of hardcore poverty has also decreased from 3.9% in 1990 to 1.4% in 1997 during the period. The number of hardcore poor HHs also declined more than half, from 1, 37,100 HHs in 1990 to 62,400 HHs in 1997. But in 1999, the incidence of hardcore poverty remained at 1.4% as in 1997. Nevertheless, the number of hardcore poor HHs has increased from 62,400 in 1997 to 66,000 in 1999 due to financial crisis in that time. In 2007, the incidence of hardcore poverty fell to 0.7% with a total of 52,900 hardcore poor HHs. Thus, it is not an exaggeration to say that Malaysia has achieved a remarkable success in reducing absolute poverty (Government of Malaysia, 1971, 2001, 2006, 2010). Table 1 presents the percentage of poverty incidence in Malaysia 1970-2007.

Development strategies in Malaysia: The present Malaysian government also has targeted to have the incidence of overall poverty to 2.8% by 2010 (Government of Malaysia, 2006). To reach these objectives, programmes targeted at specific impoverished groups will be pursued including pockets of urban and rural poor. Specific programmers will be implemented to address poverty among the Bumiputera minorities in Sabah and Sarawak as well as tackle the high incidence of poverty among the Orang Asli community. On the other hand Existing programmers and projects under Skim Pembangunan Kesejahteraan Rakyat, The Integrated Development Programmes for Urban Community, Amanah Iktiar Malaysia and various capacity building programmes will be enhanced and monitoring the poverty reduction programmes to ensure the reduction of hard core poverty and move out overall poverty within due time of plan (Government of Malaysia, 2001, 2006, 2010). In the 9th Malaysian Plan covering 2006-2010, a total of RM 417.4 million was allocated for various strategies and programmes to address the high incidence of poverty and hardcore poverty among the Orang Asli, including economic programs, resettlement initiatives and programmes aimed at the development of human capital. The Malaysian government is seeking

to provide diverse opportunities for economic development and poverty alleviation without liquidating or eroding a country's natural assets as the key feature of a green economy in Malaysia (Government of Malaysia, 2001, 2006, 2010). Especially ecosystem goods and services are a large component of the livelihoods of poor rural communities and ecosystems and their services provide a safety net against natural disasters and economic shocks as well (Government of Malaysia, 2001, 2006, 2010).

PROBLEM STATEMENT

Insufficient access of proper opportunities, lead the poor lives for having difficulties, sometimes impossible for surviving by getting any jobs in the farm and nonfarm sectors to become a self-employed and to undertake productive employment generating activities (Conroy, 2002; Siwar and Talib, 2001). There are major problems facing the poor as well as the lower income group is accessibility to opportunities. In such situation, various ways have been discovered as one of many ways of solution of enabling the poor to increase their income, acquire assets and ensure productive self-employment opportunities for them (Conroy, 2002; Siwar and Talib, 2001).

Though Malaysia has been successfully declined the rate of overall poverty to a negligible percentage but they are still facing big challenges to provide enough opportunities for Income Generating Activities (IGAs) to low income group to come up certain standards in certain areas and states as usual. Where about 40% of Malaysian households remain in the low income category, earning less than RM 1,500 a month, of which 77.2% are *bumiputera* and many are located in Sabah and Sarawak. This group requires specific policy interventions especially on capability development in order to achieve upward mobility. Income disparities between ethnic groups and regions must still be actively addressed. While economic growth will lever on economic density and agglomeration, inclusiveness requires development be equally spread out and opportunities be equitably accessible (National Economic Advisory Council, 2010). The improvement of low standard income households in a certain and remarkable stages through restructuring of society for ensure sustainable livelihood and socio-economic well-being are very important issues in Malaysia to become a developed country by 2020. It has threatened to declare themselves as a completely developed country by 2020 (Menon, 2009; Nor, 1991; Singh, 2001; Siwar and Talib, 2001; Mahbot, 1997). There are numerous initiatives being undertaken by the Government mainly in the form of direct financial assistance, physical and socioeconomic development programmes and skills training and upgrading (Government of Malaysia, 2001, 2006, 2010).

In such situations, Green economy is the emerging concept in the way of sustainable development through improvement of human well-being and social equity, while significantly reducing environmental risks and ecological scarcities as well as reduces carbon emissions and pollution, enhance energy and resource efficiency and prevent the loss of biodiversity, ecosystem services as well as reduces of poverty (Kronbak and Vestergaard, 2011; Hezria and Ghazalib, 2011; Oh *et al.*, 2010; Nair, 2010; Courtenay, 1987). On the other hand, Greening agriculture, natural assets, clean water and sanitation Renewable energy and Eco-tourism are enhancing food security, Reducing deforestation and increasing reforestation, support agriculture, rural livelihoods, ensure provision of clean water and sanitation services and cost-effective energy which are integrate reducing poverty (Kronbak and Vestergaard, 2011; Chua and Oh, 2011; Fisher and Christopher, 2007; Farrington and Clarke, 2006; Wunder, 2001).

At present green economy has recognized as the most important element of sustainable development in the world (Chua and Oh, 2011). It has come in the front as a prime strategies

among the numerous initiatives of Malaysian government for poverty alleviation, socio-economic well-being and sustainable livelihood of the stakeholders (Kronbak and Vestergaard, 2011; Chua and Oh, 2011; Oh *et al.*, 2010). The green economy provides diverse opportunities for economic development and poverty alleviation without liquidating or eroding a country's natural assets in Malaysia (Kronbak and Vestergaard, 2011; Chua and Oh, 2011). Especially ecosystem goods and services are a large component of the livelihoods of poor rural communities and ecosystems and their services provide a safety net against natural disasters and economic shocks as well (Kronbak and Vestergaard, 2011).

Furthermore, we have seen there are overall literature scarcity in this field and most the study has done on the basis of descriptive presentation of initiatives on socio-economic well-being and sustainable livelihood of the low income households in Malaysia. The existing literature also revealed that there are very few empirical studies have done to analysis of real impact of green economy on socio-economic well-being and sustainable livelihood Malaysia. Thus, present study has taken timely initiative to conduct a rigorous study to have a look of present initiatives on socio-economic well-being and sustainable livelihood of the low income households in Malaysia initiatives on socio-economic well-being and sustainable livelihood of the low income households in Malaysia. This research output will be able to draw out a future direction for effective strategies of green corporations for income generating activities and ensure development of lower income group in Malaysia.

IMPACTS STUDIES OF GREEN ECONOMY IN MALAYSIA

Hezria and Ghazalib (2011) mentioned that the Malaysian government has in 2009 established the basic architecture for green economy by incorporating the green technology portfolio into a newly established Ministry of Energy, Green Technology and Water followed by a suite of interventionist policy instruments. However, Malaysia's approach begs the question of whether the full range of social, economic and environmental goals is considered in its policy objectives. The central thesis of the paper is that a green economy needs also to be a fair economy. Fairness refers to combining formal institutions with informal ones, while seeking growth from pro-poor environmental investments. To explore the reconciliation between the three sustainable development pillars, the paper examines three case studies namely agriculture, renewable energy and waste management, in Malaysia. These cases illustrate the engagement of communities in Malaysia toward a green economy and the contribution of the three sectors in meetings social policy objectives. The paper concludes by arguing that a transition to a green economy requires more than a mere tinkering with the economy. Indeed this must include a credible reform of social institutions to deal with the underlying biophysical conditions (Hezria and Ghazalib, 2011).

Fisher and Christopher (2007) emphasis about five key socioeconomic poverty indicators (access to water, undernourishment, potential population pressure, number living below poverty line and debt service) and integrate them with an ecologically based hotspots analysis in order to illustrate magnitude of the overlap between biological conservation and poverty. The analysis here suggests that the overlap between severe, multifaceted poverty and key areas of global biodiversity is great and needs to be acknowledged. Understanding the magnitude of overlap and interactions among poverty, conservation and macroeconomic processes is crucial for identifying illusive, yet possible, win-win solutions (Fisher and Christopher, 2007).

Barrett (1993) evaluates its likely effects on poverty among small-scale padi farmers. The analysis is based on an evaluation of the strategies and programs that are being implemented as

part of the policy. It is argued that the National Agricultural Policy will not alleviate poverty in the padi sub-sector for three main reasons. Firstly, the strategies and programs currently being employed are essentially unchanged from those that were unsuccessfully employed in the past. Secondly, it is premised on a theoretical base which will not lead to the development of effective anti-poverty strategies. And, finally, it is flawed by policy contradictions (Barrett, 1993).

Chua and Oh (2011) presented Malaysia's green developments, focusing on the National Green Technology Policy and Green Building Index which have been introduced since 2009. Various green initiatives and their progresses to date will be discussed as well as the key implementing green agencies. The benefits of going green to the country and incentives being offered by the Malaysian Government are also presented. The prospect of a green future in Malaysia, spurred by the worldwide outlook towards sustainable development and environmental preservation is very bright. Pursuing green technology in economic and social developments not only helps sustain the non-renewable fuels, safeguards and minimises the environmental degradation due to carbon emissions, it also creates a strong green economy and industry, inline with the country's vision as well as the rest of the world economies (Chua and Oh, 2011).

IMPACTS STUDIES OF GREEN ECONOMY IN THE WORLD

Alary *et al.* (2011) summarized that the difficulty of valuation of livestock outputs has strong political and economic implications for farmers because policies require metrics. Based on a case study in Mali, this paper gives different estimations of the contribution of livestock to reducing poverty using different methods, from the most common measure-based approaches, that is, a financial approach, to an asset-based approach. The results show that the asset-based approach reflects the roles of livestock in terms of security (money cash) and vulnerability. But only a dynamic approach to indicators can account for the complex role of livestock in reducing poverty (Alary *et al.*, 2011).

Orr (2000) noted that The abolition in 1990 of the estate monopoly on cultivation of burley tobacco is expected to play an important role in reducing poverty among small holders in Malawi. A nationwide survey in 1993 shows that smallholder households cultivating burley also grow more hybrid maize, use more fertilizer and are more food-secure. But resource-poor households-particularly those headed by women-face land and labor constraints on burley adoption. Burley and hybrid maize increase the demand for hired labor, but not enough to absorb the growth in the rural labor force. Broad-based poverty alleviation requires technology and programs targeted at the majority of small holders with holdings of 0.5 hectares or less (Orr, 2000).

Alene *et al.* (2007) assessed the potential impacts of alternative commodity research programs on poverty reduction in three agro-ecological zones of Nigeria and identified strategic agricultural research priorities in the three zones. The paper discusses the poverty reduction-based priorities and their role in facilitating dialogue between research managers and policy makers aimed at sharpening the focus of agricultural research to achieve poverty reduction objectives in Nigeria (Alene *et al.*, 2007).

Brummett *et al.* (2011) indicated that, in areas with little or no access to markets, the number of fish ponds and fish farmers can be increased and yields improved, increasing local food supplies, but sustainability in the absence of extension subsidies is questionable. To achieve either of the two principal goals for the sector, food security and/or poverty alleviation, investments need to be made in improving the availability of quality technical assistance to targeted farmers and finding means of reducing social conflict arising from perceived inequalities in the accrual of the benefits of development (Brummett *et al.*, 2011).

De Koning *et al.* (2011) mentioned that the Socio Bosque program is a national conservation agreement scheme of the government of Ecuador. Socio Bosque consists of the transfer of a direct monetary incentive per hectare of native forest and other native ecosystems to individual landowners and local and indigenous communities who protect these ecosystems, through voluntary conservation agreements that are monitored on a regular basis for compliance. Two years after its creation, the program now includes more than half a million hectares of natural ecosystems and has over 60,000 beneficiaries. The characteristics of Socio Bosque make it a good example of a national conservation agreement scheme from which important lessons can be drawn: it is part of a clear government policy, combines ecosystem conservation with poverty alleviation, incentivizes and monitors local socio-economic investment, is transparent and straightforward and has generated nation-wide participation of local and indigenous communities and farmer households. Socio Bosque furthermore sheds light on how benefit sharing mechanisms for national REDD+ strategies could work in practice (De Koning *et al.*, 2011).

Demurger and Fournier (2011) discusses the determinants of firewood consumption in a poor township in rural northern China, with a special focus on the relationship between households' economic wealth and firewood consumption. They find strong support for the poverty-environment hypothesis since household economic wealth is a significant and negative determinant of firewood consumption. Firewood can therefore be considered as an inferior good for the whole population in the rural area under study, although further evidence shows that at the top of the wealth distribution, there might be a floor effect in the decreasing firewood consumption. Besides economic wealth, our analysis also shows that the own-price effect is important in explaining firewood consumption behavior, the price effect gaining importance with rising incomes. Finally, increasing education is also found to be a key factor in energy consumption behavior, especially when dealing with energy source switching behavior (Demurger and Fournier, 2011).

Byerlee (2000) provides a brief overview of research priority setting methods at various levels in national research systems, noting the changing emphasis from supply- to demand-driven approaches at both macro- and micro-levels of priority setting. The scope for incorporating a poverty dimension into priority setting is then reviewed within a general framework that recognises the complexity of the link between research investments and poverty alleviation. The effectiveness of this targeting is likely to be very situation specific. A case study of macro priority setting in Pakistan shows the limited scope to target benefits to the poor through re-allocation of research resources among commodities, relative to a ranking based on the efficiency objective. Given present knowledge, enhancing the efficiency and effectiveness of research systems in promoting broad-based technical change should be emphasised more than major efforts to target poverty directly. This will involve a combination of supply- and demand-driven approaches to priority setting at different levels in the research system that will enhance both the efficiency and poverty alleviation impacts of research (Byerlee, 2000).

Fisher and Christopher (2007) identified about the five key socio-economic poverty indicators (access to water, undernourishment, potential population pressure, number living below poverty line and debt service) and integrate them with an ecologically based hotspots analysis in order to illustrate magnitude of the overlap between biological conservation and poverty. The analysis here suggests that the overlap between severe, multifaceted poverty and key areas of global biodiversity is great and needs to be acknowledged. Understanding the magnitude of overlap and interactions among poverty, conservation and macroeconomic processes is crucial for identifying illusive, yet possible, win-win solutions (Fisher and Christopher, 2007).

Kerr (2002) mentioned potential trade-off with poverty alleviation arises however because watershed development may benefit landholders while harming landless people, particularly herders and women. India has a history of highly innovative watershed projects in which downstream landholders share benefits by compensating landless people upstream for providing an environmental service. Most current projects, however, take alternative measures that ignore the issue of environmental services. Evidence from 70 villages in Maharashtra suggests the presence of poverty alleviation trade-offs, highlighting the potential value of more explicitly addressing compensation for environmental services (Kerr, 2002).

Openshaw (2010) indicated that biomass is not only the principal energy, accounting for 89 % of demand but also the main traded energy in the two time periods accounting for 56-59 percent of commercial demand. Petroleum products supplied 26-27%, electricity 8-12% and coal 6-10%. The market value of traded wood fuel was US\$ 48.8 million and US\$ 81.0 million in 1996 and 2008, respectively, about 3.5% of Gross Domestic Product (GDP). The study found that in 1996 and 2008 respectively, the equivalent of 93,500 and 133,000 full-time people was employed in the biomass supply chain, approximately 2 percent of the potential workforce. In contrast, about 3400 and 4600 people were employed in the supply chain of other fuels in these years. If the Malawi findings are applied to the current estimated wood energy consumption in sub-Saharan Africa, then approximately 13 million people could be employed in commercial biomass energy; this highlights its importance as a means to assist with sustainable development and poverty alleviation (Openshaw, 2010).

Logan and Moseley (2002) assess two important elements of CAMPFIRE: poverty alleviation and local empowerment and comment on the program's performance in achieving these highly interconnected objectives. We analyze the program's achievements in poverty alleviation by exploring tenurial patterns, resource ownership and the allocation of proceeds from resource exploitation; and its progress in local empowerment by examining its administrative and decision making structures. We conclude that the program cannot effectively achieve the goal of poverty alleviation without first addressing the administrative and legal structures that underlie the country's political ecology (Logan and Moseley, 2002).

Shackleton *et al.* (2008) explores the poverty alleviation potential of four products traded in Bushbuckridge, South Africa-traditional brooms, reed mats, woodcraft and "marula" beer. While key in enhancing the livelihood security of the poorest households, these products were unlikely to provide a route out of poverty for most, although there were exceptions. Incomes often surpassed local wage rates and some producers obtained returns equivalent to the minimum wage. Non-financial benefits such as the opportunity to work from home were highly rated and the trade was found to represent a range of livelihood strategies both within and across products (Shackleton *et al.*, 2008).

Swinton *et al.* (2003) mentioned about the responsible for the ongoing degradation of natural resources such as agricultural soils, rangeland and forests? Evidence from across Latin America suggests that the nonpoor and the poor are both at fault. While the poor lack the means to invest in protecting natural resources, both the nonpoor and the poor often lack the incentives for good resource stewardship. Policies for agricultural intensification and livelihood diversification can alleviate poverty and its capacity constraint. But incentive policies for good stewardship are critically needed. Such policies should be targeted to specific environmental problems and tailored to the motivations of rural decision makers (Swinton *et al.*, 2003).

CONCLUSION

Green economy is the emerging concept in the way of sustainable livelihood and poverty alleviation through reducing of environmental risks and ecological scarcities, carbon emissions and pollution as well as enhance energy and resource efficiency and prevent the loss of biodiversity, ecosystem services in Malaysia. The improvement of low standard income households in a certain and remarkable stages through restructuring of society for ensure sustainable livelihood and socio-economic well-being are very important issues in Malaysia to become a developed country by 2020. This study aims to investigate impact of greening initiatives on socio-economic well-being and sustainable livelihood of the low income households in Malaysia from the existing review of studies. In general, this assessment review study has revealed that the green economy has a significant role on the national economy towards promoting green technology in economic and social developments through non-renewable fuels, safeguards and minimises the environmental degradation due to carbon emissions, as well as green products for Income Generating Activities (IGAs) of the low level income group in Malaysia.

Furthermore, we have seen there are overall literature scarcity in this field and most the study has done on the basis of descriptive presentation of initiatives on socio-economic well-being and sustainable livelihood of the low income households in Malaysia. The existing literature also revealed that there are very few empirical studies have done to analysis of real impact of green economy on socio-economic well-being and sustainable livelihood Malaysia. Moreover, this research contributed to a comprehensive theoretical framework of factors affecting Green Corporation's contribution on the household on poverty alleviation, socio-economic well-being and sustainable livelihood of the stakeholders in Malaysia. Finally this study provided necessary policy recommendations based on survey output for policy implications where it can help for development of effective strategies of green corporations for poverty alleviation, socio-economic well-being and sustainable livelihood through Income Generating Activities (IGAs) of lower income group in Malaysia.

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