

## GREEN ECONOMY AS A FORM OF ECONOMIC DEVELOPMENT THAT IS ENVIRONMENTALLY FRIENDLY AND SUSTAINABLE

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### Abstract

Until now, there is no research which analyzes society perception about the green products, so this research will try to fill in the gap. This Study analyzed perception of Borneo(Indonesian) society based on their demography, psychological, social and cultural factors toward the green products. This research was as a study in nature descriptive method. The result of this research indicated that perception of Borneo society toward the green product is good enough. The group of society that had high concerns to green product was housewife with the middle economy class and has up to 40 years old. More over in the term of their psychological factor, most of respondents had motivation to choose green product and had enough good perception on the green product. In social factor that the sureness of society on green product was very high. Lastly cultural factors supported society to care on the green products. The change to a green economy that values and invests in natural capital will help to drastically reduce the negative tendencies, and at the same time supporting mitigation and adaptation to climate change. Formation depends on the incorporation of the value of natural resources into economic policies and private sector decision-making. The model shows that the transition to the approach of alternative and green economy that recognizes the value of natural resources is possible. The potential benefits of such changes include poverty reduction, faster growth, stronger local economies, and increased resilience to climate change. In the long term, growth will increase more rapidly under a Green Economy scenario where natural capital is treated on an ongoing basis. Green economy is essential to ensure the growth and long-term economic development and sustainable.

**Keywords:** Sustainable Economy, Green Product, Green Economy, Cleaner Production.

### 1. INTRODUCTION

Lifestyle of modern society has made the development of highly exploitative of natural resources and life threatening. Development focused on proven production growth led to economic improvement, but failed in the social and environmental. Call it, rising greenhouse gas emissions, reduction of forest areas as well as a variety of species extinction and biodiversity. In addition it is the inequality of the average income of residents of rich countries to poor countries. Green Economy can be interpreted simply as an economic concept which does not harm the environment. Green Economy is one that produces social equity and human well-being, but also significantly reduce the environmental risks. The concept of green economy is becoming increasingly prominent in discussions of environmental policy. Ongoing financial crisis has supported the emergence of this topic, due to the uncertainty on the sustainability of growth in the global economic system.

Where it will be discussed in the context of sustainable development and poverty eradication. As we know the main principle of sustainable development is "meeting the needs of the present without compromising the fulfillment of the needs of future generations". So it can be said that the green economy is the main motor of sustainable development. The concept of green economy is expected to be a way out. Being a bridge between growth development, social justice and environmental friendly and saving natural resources. Of

course, the concept of green economy will only produce results if we want to change behavior.

## 2. GREEN ECONOMY AS A FORM OF ECONOMIC DEVELOPMENT THAT IS ENVIRONMENTALLY FRIENDLY AND SUSTAINABLE

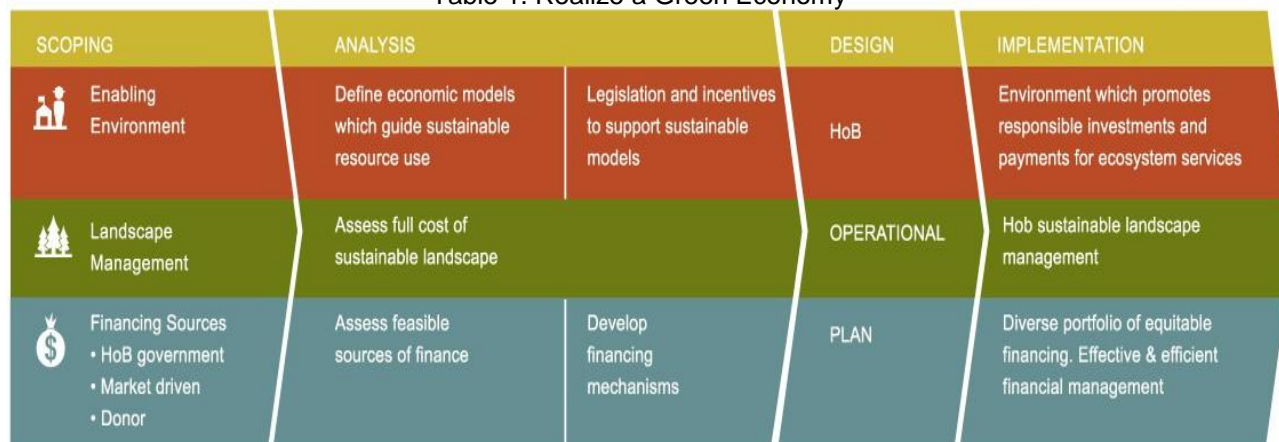
### 2.1. Green Economics

Green economy is one that results in reducing environmental risks and ecological scarcities. Green economics is not just about the environment. Certainly we must move to harmonize with natural systems, to make our economies flow like sailboats in the wind of ecosystem processes. But doing this requires great human creativity, tremendous knowledge, and the widespread participation of everyone. Human beings and human workers can no longer serve as cogs in the machine of accumulation, be it capitalistic or socialistic. Ecological development requires an unleashing of human development and an extension of democracy. Green economics means a direct focus on meeting human and environmental need. Social and ecological transformation go hand-in-hand. Green economy is an economy or economic development model based on sustainable development and a knowledge of ecological economics, green economy as advocated by the UN, is not a new approach at all and is actually a diversion from the real drivers of environmental crisis (Spash, C.L. 2012. Green Economy, Red Herring. Environmental Values, vol. 21, no. 2, 95-99).

### 2.2. Can the community implement a green economy? Are we afford to not implement it?

Finding the answer is an important step in gathering the political will and consensus for change challenges and priorities towards economic changes that are unavoidable.

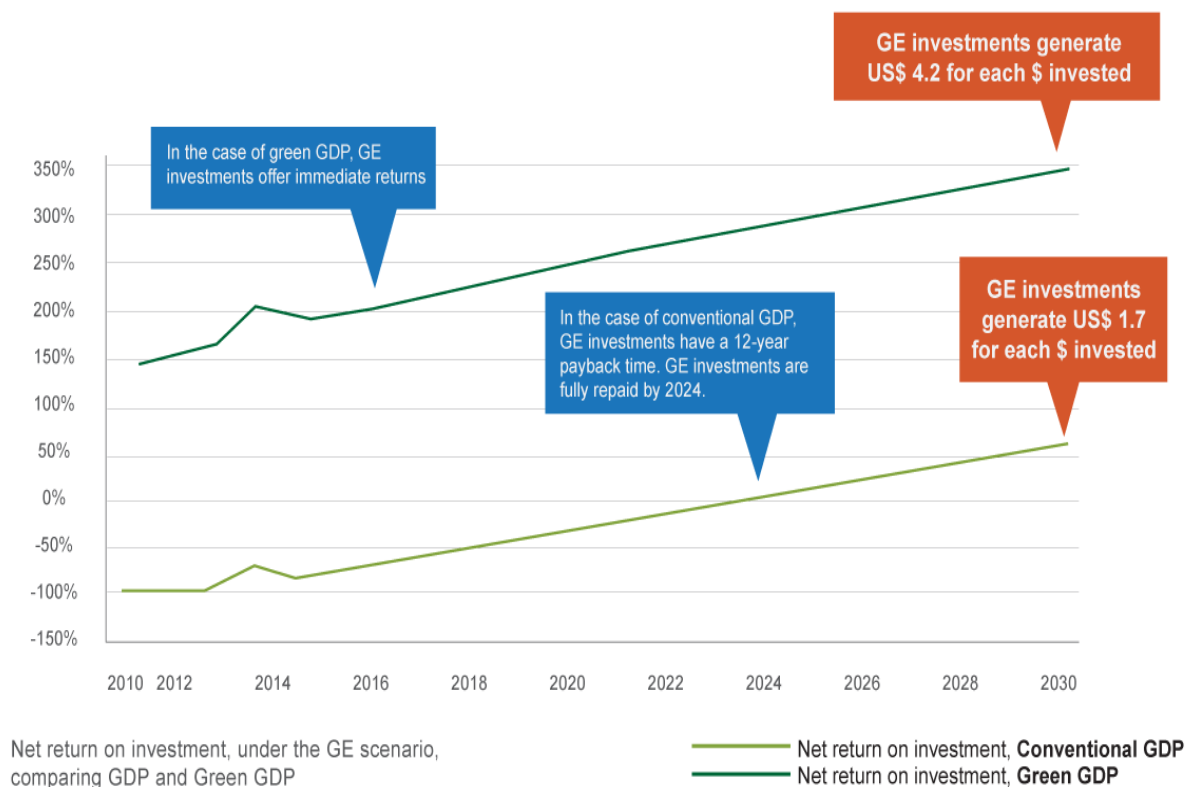
Table 1. Realize a Green Economy



Home to approximately 6% of the world's biodiversity, the Heart of Borneo (HoB) is one of the richest natural treasures hidden in the world. HoB forests cover most of the upper and middle parts of the river from 29 watersheds and provide important ecosystem services across an area of 54 million ha, more than 70% of the area of Borneo, which is beneficial to more than 11 million people. HoB's natural wealth has social and economic value that is very large at the local, national and global. This includes social values associated with traditional knowledge and sacred places, the value of biodiversity and ecosystems in creating resilience to climate change and the value of ecosystem products and services used as inputs in various economic sectors of Borneo, but a lot of the value of natural resources HoB is still not recognized.

Many natural capital value of the HoB including his pivotal role in the economy, in support of human well-being is widely and in creating resilience to climate change are still under-recognized. Traditional economic measurements such as Gross Domestic Product (GDP) does not include a role in determining the productivity of natural capital, while many products and ecosystem services market shortages and price. Improving human well-being and social equity while reducing environmental risks and ecological scarcity significant.

Table 2. Comparison of growth – Green GDP and GDP Conventional



Based on the measurement of conventional GDP, investment EH 2030 will generate U.S. \$ 1.7 for every U.S. \$ 1 invested. Breakeven point (taking into account the entire investment) will be achieved by 2024. If measured by GDP Green - which includes the contribution of natural supply and welfare practices and take into account the impact of GDP over the nature of production and capital investment EH - 2030 will generate U.S. \$ 4.2 for every U.S. \$ 1 invested.

When the investment was introduced, the main difference can be seen between the net profit of the investment using the conventional computation of GDP and green GDP approach. By using green GDP, earnings positive direct investment. Green GDP in the simulation grow faster and more sustainable than conventional GDP.

An additional benefit of the natural and unavoidable costs of the damaged ecosystem services, facilitated by investment EH, was 161 % higher than the investment itself. This is partly driven by two important changes arising from the success of the HoB 's natural capital maintenance :

**Avoided Costs:** reduced risk and damage from floods and droughts , also reduces interference with roads and infrastructure, the transport capacity of the river is higher, and the reduction of sludge.

**Additional benefits:** increased production of non-timber forest products , ecotourism , biodiversity is higher, more carbon is stored and enhancement of ecosystem function .

The use of conventional GDP, at first just a cost, which is why the return on investment starts at -100%. Over time, the growth of GDP, net investment income increased.

Both are measured by conventional GDP and green GDP, Green Economy scenario shows a slight decline in profit potential in the palm oil sector because of lower yields on degraded land, offset by a better ecosystem (which leads to cost reductions for businesses, households, and government), greater income from non-timber forest products and tourism, higher yields and energy consumption in the country is lower (especially fossil fuels), which enables energy costs decreased below BAU (Business As Usual) and export

increases beyond the base line conditions. Biodiversity-based business development and expansion of innovative green sectors also contribute to improved economic performance.

The study showed that investing in natural capital will be:

- Reduce future costs to businesses, households, and government.
- Increase future revenue from the green industry and biodiversity-based.
- Improving yields and reducing energy consumption in the country.
- Supporting economic change towards a more just and equitable.

### **3. GREEN NATURE OF ECONOMIC SCENARIO**

#### **3.1. Comprehensive change impact reduction with logging practice (Reduced Impact Logging / RIL) keeping carbon, reduce erosion and sedimentation river**

Approximately an additional 115 million tons of carbon (tC) can be saved by implementing RIL in 158 timber concessions. With the improvement of timber management practices, about more than 19 tons of carbon (tC) per hectare can be saved compared with the existing concession management practices. Based on the social costs (that is damage to the global community) of these emissions, the social value of carbon storage of nearly U.S. \$ 4 billion. In the Mahakam river basin, analysis of InVEST showed that timber management can better improve sediment retention in 2020 to nearly 900.000 tonnes across 49 timber concessions in the basin, by avoiding erosion of approximately 37 tons of soil per hectare per year.

#### **3.2. Scenario green economy generates higher carbon stock compared BSB - projection reduction reduces carbon stock**

Based on the projected loss of forest cover of 3.2 million hectares, the difference between the carbon stock BAU scenario and the Green Economy is of 1.2 billion tonnes of CO<sub>2e</sub>, 23% of which is contributed by changes in land use in the HoB. Assuming a carbon price of U.S. \$ 2/ton and U.S. \$ 15/ton, the total value of projected reductions in carbon stocks under a Green Economy scenario is between U.S. \$ 2.4 billion and U.S. \$ 18 billion.

#### **3.3. Scenario green economy improving soil function**

Intervention green economy also improves the soil's ability to perform its functions in a managed natural ecosystems and sustainable. These functions among others, include the storage of carbon in the organic matter, the soil's ability to hold water, the flow of nutrients and soil erosion control.

#### **3.4. Scenario infrastructure green economy ecology produces more effective**

When the river transport system is no longer maintained because of mass transport have used other infrastructure, local communities suffer as a result impact on their mobility. For them, the river transport system is the cheapest means of transport, and in some cases even be the only means of transportation. BAU scenario shows the tendency of mud and sediment buildup worsened, requiring additional infrastructure investment (for transport and energy in some specific cases analyzed) both for additional treatment or a substitute for building construction lost ecological infrastructure (such as reduced use of the river). However, maintaining ecosystem through the intervention HoB green economy will have a positive impact on the watershed. Sediment retention capacity will be increased due to the reduced residue, landslide and mud buildup.

#### **3.5. Green economy scenario ensuring the future revenues from natural capital improvement and land management**

Green economy approach allows the governments in the region to take advantage of a valuable opportunity HoB as soon as the green markets and mechanisms that are being developed under the United Nations Framework Convention on Climate Change (UNFCCC) and other international initiatives running. Research shows that the HoB area produces many benefits of ecosystem services with local, downstream,

and widely global will be maintained under a Green Economy scenario. Green economy produces protection against ecosystem services that benefit economies and societies of Borneo, as well as global stakeholders. Type of policy used to achieve a green economy will be important in determining the type of investment that will be done and the incidence of costs and benefits will be paid and who gets the benefit. These results form the basis of discussion regarding investment policies, policies and incentives that will be enforced by the central and local governments.

To develop this scenario, efforts were made to be more extensive, particularly in the collection of data in a systematic verification of the relationship between ecosystem functions and benefits at the local level with strong involvement of stakeholders at the local level is needed. The findings can then be used to actively support the economic policy-making on natural capital HoB to create socio-economic benefits and environmental, as well as cross-border synergies.

### **3.6. Positive impact on growth in the green economy scenario**

In the BAU scenario economic growth and short-term private gains associated with the loss of natural capital and the public over the loss of the various sectors that depend on biodiversity and ecosystem services. Reduction of natural capital charge on the community and the ability of natural capital to support economic growth was reduced every year. In the Green Economy scenario, the sustainable management of natural capital causes an increase in value by net profit increased for current and future generations. Maintaining forest cover and forest management improvements will enhance biodiversity, carbon storage and soil function. Resulting in higher revenues from forest products and ecotourism. Expenses can be avoided by keeping the hydrological functions (water supply, water quality, sediment retention, flood prevention, and the maintenance of ecological infrastructure such as transport stream) reducing the destruction of roads, reduce the frequency of flooding, and improve soil function.

In the BAU scenario by 2020 the cost of the environment over economic growth is expected to exceed the income from natural capital. In the Green Economy scenario, an investment of 0.6% of GDP per year is needed to ensure economic growth and environmental quality of life until 2020. Investment needs will decline over time in conjunction with the creation of progress. Different from the BAU scenario, in the long term, growth will increase more rapidly under a Green Economy scenario that preserve natural capital in a sustainable manner.

Growth under a Green Economy scenario assessed by conventional and green for the calculation of GDP. Under a Green Economy scenario, both conventional GDP calculations and the Green Economy, will grow fast or faster (and more sustainable) than GDP in the BAU scenario. Profits continue to rise under a Green Economy scenario, while the BAU scenario increasingly slowed GDP growth rate in the medium and long term.

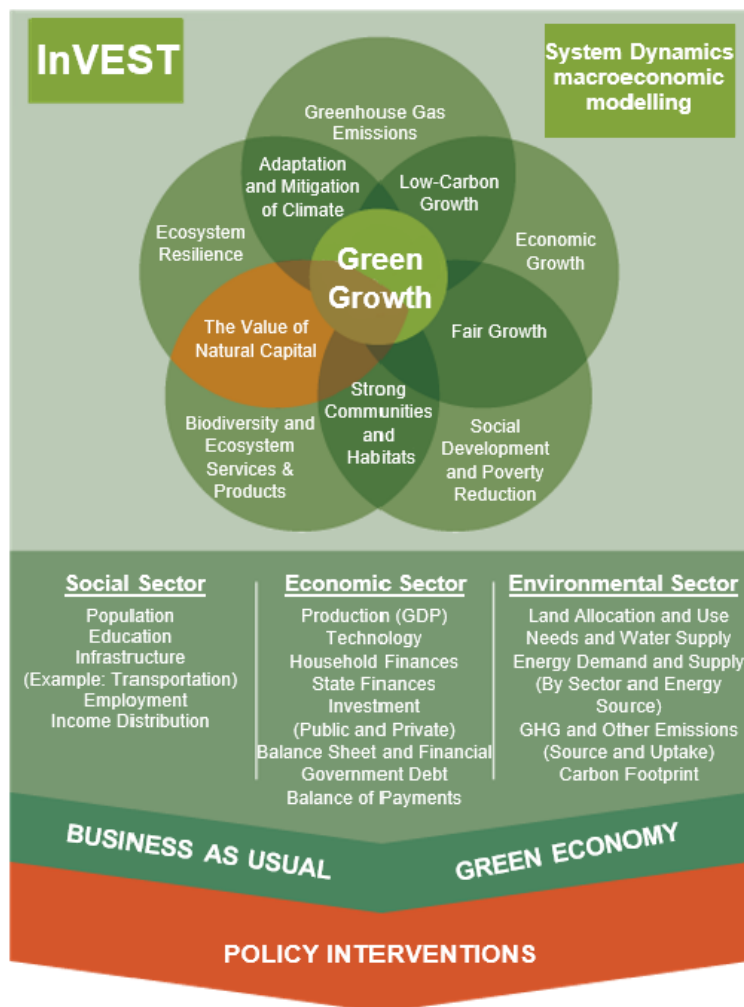


Fig.1 Green Growth

#### 4. ACKNOWLEDGEMENT

In imperdiet, lectus in societate, Cor Borneo Oeconomicarum sustineri. Thank you Heart of Borneo Project.

#### REFERENCE LIST

Forest Research Institute Malaysia (FIRM), International Tropical Timber Organization (ITTO). (2001). *A Model Project for Cost Analysis to Achieve Sustainable Forest Management: Volume 1 Synthesis Report*. Kepong, Malaysia.

Fisher, Edwards, Xingli and Wilcove. (2011). The high costs of conserving Southeast Asia's lowland rainforests. *Frontiers in Ecology and the Environment* 9: 329–334.

[http://wwf.panda.org/what\\_we\\_do/where\\_we\\_work/borneo\\_forests/borneo\\_rainforest\\_conservation/green\\_economy2/](http://wwf.panda.org/what_we_do/where_we_work/borneo_forests/borneo_rainforest_conservation/green_economy2/)

Palm oil employment: Koh, Gibbs, Potapov and Hansen. (2011). *Environmental and socioeconomic tradeoffs for the Kalimantan region*. Indonesia's forest moratorium.

Spash, C.L. (2012). *Green Economy, Red Herring*. *Environmental Values*, vol. 21, no. 2, 95-99

- Van Beukering, Grogan, Hansfort and Seager. (2009). *An Economic Valuation of Aceh's forests - The road towards sustainable development*. Instituut voor Milieuvraagstukken: Amsterdam.
- Venter, Meijaard, Possingham, Dennis, Sheil, Wich, Hovani and Wilson. (2009). Carbon payments as a safeguard for threatened tropical mammals. *Conservation Letters*, 2(3), 123-129.
- Wollenberg, Uluk and Pramono. (2001). *Income is Not Enough: The Effect of Economic Incentives on Forest Product Conservation*. Center for International Forestry Research (CIFOR).
- World Wide Fund for Nature. (2010). *Literature review: Methodologies for financial and economic assessment of forest ecosystem services and land uses that cause deforestation in Borneo, HoB Network Initiative*. Prepared by Valencia.