

Scoping Paper on

Green Activities and Sustainable Consumption and Production in the Indonesia



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Prepared by:
Dr. Akhmad Fauzi
For
United Nations Environment Programmes (UNEP)

Introduction

Indonesia has maintained a remarkable economic development during the last three decades in spite of global economic turbulences. Some factors that contribute to Indonesia's economic development resilience among other things are its strong domestic consumption and its abundance of natural assets. Indonesia is endowed with abundance natural assets, both terrestrials and oceans. For the last five decades, Indonesia's development was driven primarily from extraction of natural assets which comprises of a quarter of Indonesia's total wealth. Nevertheless, these assets are now being rapidly depleted without sufficient replacement from human and produced assets (Leitmann et al, 2009). The economic loss of this resource and environmental degradation would be substantial ranging from 0.3 to 7 percent of Indonesia's GDP (Leitmann et al 2009). The growth oriented paradigm which had been pursued during the "new order" had contributed significantly to this deterioration of natural resource and environmental capitals. The pattern continues even after Indonesia has set foot into new era of political system in early 2000s. Decentralization has even accelerated resource depletion in effort to increase regional revenues leading to vicious circle of resource and environmental degradation.

Having learned from past failures in pursuing economic growth with sound environmental management, Indonesia is now striving to purses its sustainable development path by taking into account environmental cost of development. Recently the government of Indonesia has now added the fourth pillar of economic development into previous three pillars i.e pro growth, pro job and pro poor. The fourth pillar is pro-environment. This forth pillar is both timely and crucial given the role of Indonesia in various international environmental issues such as COP-13 in Bali in 2007 and other international environmental concerns, and the critical resource depletion and environmental degradation of Indonesia's natural assets. In order to pursue the four pillars of Indonesia's economic development, the so-called Indonesia's Green Economy Initiatives is now being developed. This development is not entirely new since various initiatives have been implemented through various strategies and policy. This paper gives an overview such initiatives and synthesizes the challenges and option for developing green economy in Indonesia.

Green economy

What is green economy? This term might be interpreted in many different ways. In this report two definitions of green economy will be put forward. The first one is a widely accepted definition from UNEP. UNEP defines green economy as

“A Green Economy is characterized by substantially increased investments in economic sectors that build on and enhance the earth's natural capital or reduce ecological scarcities and environmental risks. These sectors include renewable energy, low-carbon transport, energy efficient buildings, clean technologies, improved waste management, improved freshwater provision,



sustainable agriculture and forest management, and sustainable fisheries. These investments are driven by or supported by national policy reforms and the development of international policy and market infrastructure.”

UNEP definition also encompasses every aspect of economic activities with emphasize on investment on enhancement of natural capital or reducing ecological scarcities. Indonesia’s view on green economy, even though is in line with UNEP definition, is more emphasized on internalizing cost of natural resource depletion and environmental degradation. The following is the view of Indonesia’s green economy concept:

“ Indonesia is of the view that Green Economy is a development paradigm that based on resource efficiency approach with strong emphasizes on internalizing cost of natural resource depletion on environmental degradation, efforts on alleviate the poverty, creating decent jobs, and ensuring sustainable economic growth” (Indonesian Delegation/DELRI, UNEP 11th G SS, February, 2010)

In addition, statement from Indonesian delegation on green economy issue also emphasize on the importance of diversity and differences on each of nations to implement green economic concepts. The following statement states:

“Indonesia urges and wishes stakeholders will jointly ensure implementation of green economy concept. Nevertheless, while nature and environment teach us on how divers we are, Indonesia believe that there is no such a standardized or homogenous implementation of the concept. The implementation shall be adapted to specific characteristic and need of each nation.

Based on these views, Indonesia’s green economy initiatives in this report are derived from both UNEP definition and Indonesia’s view.

1. Stocktaking of existing initiatives

1.1. National-level strategies, policies, programmes and projects

Indonesia’s main umbrella for green economy initiatives is stated in the long term national development planning of 2005-2025 (Law No 17/2007). This law states that the long term national development should be carried out to achieve four main goals i.e, 1) competitive Indonesia, 2) just and distributed development, 3) *green and everlasting Indonesia*, and 4) strong and self-reliance archipelagic country based on national interests. These long term national development goals are then pursued through setting up national priority development. Among fourteen national development priorities, three national priorities are related to green economy initiatives. These include food security (which include adaptation to climate change), energy, and environmental and disaster management. With regard to energy priority, for example, the national strategy is carried out through developing



alternative energy as well as kerosene to gas conversion program. While environmental and disaster management is carried out through controlling environmental degradation as well as mitigation to climate change. The following Table describes the three national development priorities and their development focus.

Table 1. National Policy Priorities and their relation with green economy initiatives

Priority	Focus
Food security	<ul style="list-style-type: none"> • <u>Land, Area Development and Agriculture Spatial Plan</u> • <u>Infrastructure</u> • <u>Research and Development</u> • <u>Investment, Finance and Subsidy</u> • <u>Food and Nutrition</u> • <u>Adaptation to Climate Change</u>
Energy	<ul style="list-style-type: none"> • <u>Restructuring of State Enterprises</u> • <u>Energy Capacity</u> • <u>Alternative Energy</u> • <u>Oil and Gas Derivative Production</u> • <u>Gas Conversion</u>
Environmental and Disaster Management	<ul style="list-style-type: none"> • Climate Change • Environmental Degradation Control • Early Warning System • Capacity Building on Disaster Mitigation and Forest Fire

Source: Bappenas, 2010. Prints in bold indicate direct link with green economy

The policy for greening Indonesia is then more elaborated in the second medium term development planning which covers period of 2010-2014. Two main goals of second medium term development planning which are related to green economy initiatives are mainstreaming sustainable development and natural resource and environmental management. The former includes developing cross-sectoral policy on climate change, while the latter is emphasized on efficient use of utilization of Indonesia's natural resource and improving quality and sustainability of the environment.

The progress toward green economy initiatives is gaining strong momentum with the establishment of new Environmental Law. The Law No 32/2009 on Environmental Protection and Management strongly encourages "greening Indonesia" through various mandates and mechanisms such financing and development planning mechanism as well as the use of economic instrument to achieve sound environmental management without sacrificing economic growth.

In addition to long term and medium term national polices, Government of Indonesia has also set out several specific policies related to green economy initiatives. These include improved subsidy for electricity industries in order to reduce GHG emission, improve policy for promoting renewable

energy such as geothermal and other energy alternatives as well as develop incentives for industries which promote environmental friendly inputs and outputs.

Indonesia's programmes on Green economy initiatives are implemented in various ways within different sectoral levels. These include agriculture, forestry, energy sector, and within the ministry of environment. In agriculture sector, green economy initiatives have been developed to encourage sustainable agricultural practices. Several existing initiatives within agriculture sector include (Krisnamurthi, 2009):

- Measurement of agriculture productivity based on water utilization
- Application of net carbon absorption system
- Policy to support farming system on dry land
- Policy to encourage plantation which use carbon absorption trees
- Provision of special allocation fund for adaptation and mitigation of environmental problems and climate change
- Policy to support agricultural activities which minimize "energy import
- Programmes to develop more "Energy Self-sufficient Village" or *Desa Mandiri Energy* which encourage the use of local renewable energy resources
- Programmes to support seaweed farming as carbon absorption activities
- Policy to support Indonesia Sustainable Palm Oil System

Similarly, within the forestry sector, green economy initiative is directed toward sustainable forest management. The current bold initiatives include "replanting trees movement" or "one man one tree programmes" and utilization of forest area for restoration ecosystem business. This type of business is not merely utilizing marketed forest products such as woods but also encourage utilizing ecosystem services of forest areas and restoration of forest ecosystem. The ministry of forestry currently allocates more than 2.4 million ha for this forest restoration business (Kusumawardhani, 2010). This initiative has been implemented in cooperation with private sectors. There are two private companies which currently operating restoration programmes in forest area to do restoration business.

Other existing initiatives on green economy which have been established for quite period of times are those initiated by the ministry of environment. One of the longest existing initiatives is the establishment and promotion of calculating green GDP at both national and regional levels. Indonesia's green GDP, which is measuring conventional GDP minus resource and environmental depreciation, has been established since late 1990s. The initiatives which was initially supported by foreign donors, has lead to establishment of crucial institution dealing with such an issues such as green accounting division at Central Statistic Agency. The green GDP programme was then duplicated at various regional levels such as those in Kalimantan and other provinces as well as at sectoral level such as green GDP for forestry sector. In 2006, the ministry of environment has calculated green GDP for thirty provinces in Indonesia.

The ministry of environment along with other institutions has also helped to disseminate the use of economic valuation for environment and natural resources. This valuation techniques which emphasize the important of non-market values of environmental services has now been widely adopted at various levels as a tool for valuing the true value of environmental services and to reduce overconsumption of natural resources and to prevent further environmental degradation.

Other programmes which have been initiated by the KLH also include:

- Promoting and implementing 3R (Reduce, Re-use, Recycle) to various institutions and communities at large
- Investment program for hazardous waste. The government provides incentives and subsidies for investment to manage hazardous wastes
- Programmes to promote and disseminate green economic concepts through various national and regional events

In energy sector, green economy initiatives are implemented in various strategies and programmes. Strategies toward green economy in energy sectors are two folds, supply side strategy and demand side strategy (Ayuni, 2010). The supply side strategy is aimed to:

- Implement mandatory provision of renewable energy
- Increase the use of renewable energy
- Increase the use of clean fuel (fuel switching)

The demand side strategy is aimed to:

- Implement energy efficiency commitment
- Promote fuel switching
- Promote energy saving
- Utilize clean energy technology
- Promote energy efficient culture and way of life.

To achieve such strategies, several policy instruments are developed. These include legal instrument through the use of Energy Act, Electricity Act, Nuclear Act, Geothermal Act and government regulation on energy conversion. Those acts are used as legal basis to promote the use of green energy for greening Indonesia. In addition to legal instrument, the policy on green energy is also strengthened by Fiscal instrument. These include:

- Presidential Instruction on incentive provision for energy conservation
- Tariffs and taxes exemption for activities related to utilization of renewable energy
- Pricing policy and subsidy switching from fossil energy toward renewable energy

Other two instruments that also enacted to support green economy initiatives are related to institutional support and financing support. Within institutional support, department of energy and mineral resource is in the process of establishing new directorate general within the ministry that deals with renewable energy and conservation energy. The ministry also works with stakeholders association to promote renewable energy utilization. In terms of financial support, the government has allocated special budget for mitigation program both from national budget as well as from clean development mechanism (CDM).

Currently several programmes have been developed to implement the green economic policy in energy sectors. These include:

- Program on developing and accelerating geothermal utilization
- Bioenergy development
- Developing renewable energy non-fossil
- Increase energy efficiency utilization



- Developing and implementing clean energy technology
- Completion and harmonization of rules and regulations related to renewable energy
- Increase local content and supporting industries for renewable energy
- Intensify community self-reliance on energy and village energy self-reliance programs.
- Intensify research and development on renewable energy
- Intensify training and education on renewable energy

1.2. Local-level strategies, policies, programmes and projects

At local levels, there is not much initiatives have been developed regarding green economy initiatives. Nevertheless, several communities have been practicing “green life style” based on local wisdom and preserved traditional ways of life. Such an example can be found in traditional community of *Baduy* people in Banten Province. This tribe has been long known for its strict rule on “energy efficiency” by limiting resources utilization from nature and strict rule on conservation. The tribe bans electricity as well as other “modern appliances” to be used in daily life. The tribe is also known for its consistency in practicing sustainable agriculture by not using pesticides, and other chemical components to increase agriculture productivity.

In addition, several municipalities are now trying to adopt green economy strategy in their city development. For example, the city of Bogor which has been well known as the “City of one million mini vans public transport”, since 2005 has initiated a decent public transport using bio-diesel. It is too early to judge the success of this initiative since until five years of the programmes; traffic jam in the city is still rampant. Other cities are also introduced better transportation system now such as the Jakarta bus way system, Semarang Trans Semarang System, and similar mode found in Jogjakarta.

1.3. Initiatives by international institutions

1.4. Private sector initiatives

Private sector initiatives of green economy in Indonesia are vary. The most notable initiatives are those related to real estate development in Java and other provinces. As UNEP defines, green economy involves transition to reshape and refocusing policies, investment and spending toward green sectors. This type of transition has been found in the development of “new cities” in peripheral Jakarta and Surabaya whereby private sectors have been spending significant amount of investment for waste management, green infrastructure, water treatment, and renewable energy.

Other private sector initiatives are also found related to promoting green economy and green building. One company is actively involved in green community campaign using media such as radio television. The private company provides reward and incentives for communities which have been selected and evaluated fulfilling green economy criteria such as waste management, green infrastructure and others. This type of campaign has been augmented involving more communities and other private institutions.

1.5. Initiatives taken by civil society organizations

Several civil society organizations have been found actively involved in promoting green economy. Their activities ranging from waste management program to more complex activities such tapping renewable energy resources. One of the NGOs, for example, is very well known for promoting “micro hydro” which is basically tapping renewable energy for electricity using cost-effective mechanism. The “micro hydro” even though initiated by the NGOs, once is running, it could be managed totally by the community. Other NGOs in Central java for example, is actively promoting “garbage bank” whereby people would be able to have saving account by recycling garbage. Similar initiatives are found in small-scale program for waste, water and energy management in various villages in the country.

1.6. Donor-supported programmes

2. Opportunities for greening existing programmes

2.1. Objectives of existing programmes

As mentioned earlier in the introduction, Indonesia has had many lesson learned of development failures during the last four decades. Economic development, which too much reliance on growth instead of sustainability, has given unprecedented impacts on environment and natural resources. Putting natural resources as solely factor of production has surely misled the role of natural and environment as natural assets whereby they have non-market values beyond consumption. The last development paradigm was also failed to recognize the interdependencies of economic, social (poverty) and environment within the development objectives.

Indonesia has learned from the last failures. The new development approach, therefore, has to be pursued. The objectives of current programmes on green economy are not only to correct the path toward economic development which provided welfare to people and planet, but also to depart to the new paradigm of economic development which is economic growth with quality. It also serves as an initial step global initiatives toward low carbon economy. Existing programmes could also be used to provide inputs for better future improvement in management of natural resource and environment as well as better achievement in economic development goals.

2.2. Opportunities to achieve Green Economy objectives under existing plans

Indonesia has experienced major transformation both politically and economically. The reform movement in 1998 serves as milestone in changing political landscape in the country. Similarly, multiple economic crises which occurred during 1990s – 2000s provide opportunities to re-design Indonesia’s economic development paradigm. Beside these two major factors, there are other opportunities to achieve green objectives under existing plan. Dewanthy (2009) states that there are three major opportunities for current green economic movements. First of all, currently there are



strong needs to change to better outcomes of development. This need to change is entirely supported from the grass root communities to middle and upper class as well as from government officials. This need of change provides strong momentum for current existing plan. Second, contrary to the old regime, current government is in fully support for green economy initiatives. The government is no longer sees the environment as burden of problems per se, but it should be integrated within development framework. This support is evident in the current national planning as well as other Laws related to environment and natural resource exploitation which have been amended after reform era, and this is the third opportunities to achieve green economy objectives.

The opportunity to achieve Indonesia's green economy is also open with various studies on this issue conducted by the ministry of finance. The ministry, for example, has published a technical report on low carbon development option. The report has listed various opportunities and policies to reduce emission for manufacturing sector. This off course could be used as a basis for developing green economy now and in the future. The policies provide guidelines on how to achieve low carbon economy without jeopardizing manufacturing sectors which are one of the main engines of Indonesian economy.

3. Identification of barriers, gaps and needs

3.1. Description of achievements under existing initiatives

Even though efforts to achieve *green Indonesia* is still far from being called succeeded, some of the existing initiatives are remarkably well established. For example, efforts to introduce green GDP as a satellite account for measuring economic performance is now gaining acceptance both at national levels and at regional levels. Compared to ten years before, green GDP was something beyond the radar screen of policy makers at regional levels. Now this initiative has gained support from regional authorities. Similarly, effort to disseminate economic valuation for natural and environmental resources has succeeded. Economic valuation has been widely adopted as sources of information for managing natural resource and environment. This concept, in which ten year ago was still in the domain of academic circle, is now something that government officials are familiar with.

Other initiatives that also have been remarkably achieved are in the area of energy sector. Kerosene to gas conversion program has been successfully implemented leading to cleaner energy utilization. Similarly, reducing subsidy program for fuel consumption has been implemented since 2005. Even though, it is difficult to say that removing fuel subsidy has dramatically reduced fossil fuel consumption, this program has increased switching consumption from low octane fuel to higher octane fuel consumption.

It is also worth noting that there is tendency to adopt green investment in infrastructure sector. Several road and building contractors have publicly declared that they follow green practices by using environmentally products and design.

At the policy level, fiscal support has been well developed to promote green economy. Recently the ministry of finance has issued policy to take over fiscal payment which previously paid by

investor to invest in geothermal project. The government will pay all import duties and others fiscal matters as to encourage more investment in renewable energy such as geothermal project. In addition, ministry of finance has also been streamlining and reforming special allocation fund for environment (or known in Indonesia as DAK).

In the forestry sector, forest rehabilitation program is well undertaken. Similarly program to encourage green business through forest restoration program has been piloted in forest degraded area in Sumatra. The program, which is a partnership between private institution and local government, has been welcome as prototype model of “profit, people and planet” business.

Other programme which shows a significant progress is 3R (Reduce, Reuse, and Recycle) programme. The 3R has now widely adopted in various levels, from community levels to institutional levels. Support from corporation has also shown increased. Big retailers in big cities are now starting to adopt “no plastic bag” policy, encouraging customers to use recycled bags or they have to extra charge for using plastic bags.

- Climate change programmes have been developed (check this with green paper)

3.2. A discussion of the limitations and other challenges facing existing initiatives

Even though, efforts toward achieving green economy have been progressing, Indonesia is still facing some challenges to move forward. Existing initiatives on green economy are not without limitations. Various reports indicate that there are many issues and challenges that must be addressed with regard to implementation of green initiatives.

First of all, it is widely acknowledges that supports from local government units are sometimes not encouraging. Some local governments are still pursuing development in the old ways relying on extracting natural resources without taking into account the costs associated with it. Conflicts over mining right on protected forest, for example, are still unresolved matters in several areas. This issue has been an ongoing battle for example in natural resource rich regions such as Sulawesi and Papua. Local regencies that obsess with increasing regional revenues are still pursuing the policy to allow mining on protected forests. This policy is off course a setback for national programme on green economy.

Secondly, bureaucratic bottlenecks are also difficult to be eliminated. Green investment, as any other investment, requires support from government institution. It is in this area that Indonesia is still facing a big challenge. Obtaining business permit is not only taking a long period of time but also facing a complicated process through various institutions. This is not only costly for investors but also discourage further investment in green economy.

The third limitations and challenges are in the area of laws and regulations. These things are now become “a double-edge sword” for green economy initiative in Indonesia. On one side, the more laws and regulations enacted for environmental management, the better since green economy initiatives have more legal basis for their implementation. But on the other side, these laws and regulations are sometimes conflicting among each other creating disharmony of legal basis. Conflicting regulations are also creating distrust among institutions leading to more difficult implementation of green economy initiatives.

Forth, even though fiscal policies to support green economy initiatives have been improving, some fiscal policies related to environmental management are still lacking. Current Acts on fiscal policies do not provide enough room for “earmarking” of revenues derived from environmental programmes to be returned for environmental related activities. Similarly fiscal support is still lacking to support green forestry sector (Kusumawardhani, 2010)

Finally, green economy is challenging issue in developing country like Indonesia where poverty is still a big problem to be eradicated. With number of people living in poverty is still more than 25 million people; green economy is sometimes not a priority for common people. Therefore people awareness is still lacking. This making it difficult to scaling up green economy programmes throughout the country and throughout various community levels.

3.3. Identification of knowledge and analytical gaps

Perhaps, the most obvious of knowledge gaps in green economy initiatives is on the understanding what it means by “green economy” itself. Green economy is understood differently within different sectors and institutions. Therefore, it is quite challenging at this stage to bring all stakeholders to come to common platform on what constitutes green economy. This knowledge gap is exacerbated by lack of curriculum on green economy at almost all university levels in Indonesia. Economics subjects are still taught based on conventional neo-classical economics textbooks which emphasize more on growth theory and encourage consumption as a mean of increasing state’s welfare. This lack of curriculum results in less human resources who have full knowledge on green economy and its related knowledge.

In terms of analytical gaps, there is currently huge analytical gap in terms of green economy assessment in the country. Green economy movement is still in early stages, therefore studies on this issue is still lacking. For example, there is no such an analyses on what would be the wide impact of adopting green economy to the Indonesia’s economy at macro levels. How this initiative would alter firms behavior, and how green economy would have an impact on sectoral basis. There is currently an analytical study conducted by CEDS-UNPAD on Indonesia’s green economy. This study, however, is limited to two sectors i.e., energy and forestry using simulation. The study was more focused on carbon tax and fuel switching. Therefore, there are ample of gaps to be filled in this area.

Other study conducted by the ministry of finance on low carbon development for Indonesia has focused on status and findings of greenhouse gas emission (MOF, 2008, 2009a, 2009b). The study is an explorative study with emphasize on reporting existing GHG emission in the country and possible policy intervention that could be carried by the government. This study should be followed up by quantitative analyses so that the government has a solid scientific basis for pursuing low carbon economy in Indonesia.

It is also worth noting that until recently no study has ever been conducted on the benefits and costs analysis of pursuing low carbon economy, or green economy in general. This analysis is critical for policy consideration. It gives policy makers broader and convincing pictures of doing business as



usual and pursuing low carbon economy in terms of benefits to society and costs that have to be borne by society at large.

3.4. Identification of gaps and needs related to policy processes

The government of Indonesia through the ministry of finance, the ministry of environment and Bappenas has set out several policy options to achieve low carbon economy. Three main options include policy intervention on capital or investment, regulation and energy management. In addition through Law No 32/2009 on environment, the government has also armed with various policy instruments to internalize environmental degradation by imposing economic instruments. Nevertheless, there is a need to synchronize these policy options through sectoral dialogue process so that the policy could be implemented will full support from sectoral involved. It is also important to bring to the table all other stakeholders for policy process. Concerns of non government stakeholders as well as other group of communities might differ from government perspective. Therefore their concerns might add to other dimensions of pursuing green economy in the country.

The low carbon economy and efforts toward green economy has been heavily directed toward energy and forestry sectors. The policy process have also to acknowledge other sectors which are crucial but so far have been left out in the process. Tourism and marine and fisheries sectors are the two sectors that absorb employment and contribute significantly to the Indonesian economy. These two sectors might have different policy mechanism toward green economy. Therefore, it is important the next policy process should consider concerns of these sectors.

4. Recommendations on possible support programmes to address existing gaps and needs

4.1. Proposals of research and analytical studies that could address knowledge gaps

As previously discussed, there are few research and analytical studies on green economy in Indonesia. This provides ample opportunities for research in this area. First of all, an assessment of benefit-cost analysis of green economy scenario both on national and regional levels is both timely and urgent. The study should provide analysis on what is the best cost-effective scenario of implementing green economy in Indonesia. The study could be based on sector-wise or regional-wise. Both will provide policy makers with clear picture of benefits of adopting green economy. Secondly, an econometric analysis could be carried out to determine the impact of implementing green economy in Indonesia. The study could start with a pilot project of specific sector or multiple projects based. Third, the modeling study which has been previously done by CEDS/UNPAD/KLH could be scaled up to include more sectors such as agriculture, fisheries and tourism. The CGE modeling that has been used by the CEDS team could be augmented to include more policy scenarios beside carbon taxes.

4.2. Proposals of possible approaches to enhance synergy and effectiveness of existing initiatives



It should be recognized that existing green economy initiatives in Indonesia are rather fragmented. The synergy among sectoral initiatives is hard to coordinate. With such a complex institutional arrangement, green economy programmes would face huge challenges in the future. Several steps need to be taken to make existing initiatives more effective. One of these is establishing working group of green economy initiatives. The members of working group are representative of sector and other stakeholders who deal with similar concern on green economy in the country. The working group should regularly held a meeting to discuss, review and provide valuable inputs for improvement of implementing green economy programmes.

Other factor that need be taken into account is partnership with private sectors and institutions. Green economy should not be regarded as government driven initiatives only. With involvement of private sectors, it would speed up efforts toward achieving green Indonesia. Private sector programmes such as corporate social responsibility (CSR) could be directed toward green economy program and could be synergized with local government initiatives. Therefore, private spending on CSR could overcome financial constraint for green economy program that normally faced by local government.

4.3. Identification of capacity strengthening activities

As mentioned previously, one of obstacles in implementing green economy in Indonesia is human resources and institutional capacity constraints. These constraints could be overcome by various activities. Trainings and short course on green economy should be regularly held in Indonesia. It should be aimed for middle level government officials at regional and provincial levels because they are spearheading economic development programmes in the regions. The ministry of environment has regularly providing training for the trainers for local officials on economic valuation. This training activity could be enhanced with green economy materials. In addition, support for regional knowledge sharing on green economy should be established. This can be done through various activities such as regional workshops, seminars and symposium on green economy issues. Experiences from other countries success story would be important for lesson learned. These activities would provide such an opportunity to learn and share. Support for publications in the form of scientific journals devoted for research on green economy related issues would also help to strengthen institutional capacity.

4.4. A list of partnerships that could be developed among the various actors.

The following institutions and actors would be potential partnership for green economy initiatives programmes.

- Ministry of Environment (KLH)
- Ministry of National Planning (Bappenas)
- Ministry of Forestry
- Ministry of Energy and Mineral Resources
- Ministry of Transportation
- Ministry of Marine and Fisheries



- Ministry of Agriculture
- Ministry of Research and Technology
- Ministry of Finance
- Ministry of Home Affairs
- Ministry of Public Works
- Agency of National Survey and Mapping
- Agency of National Statistics
- National Council for Climate Change
- National Economic Committee
- Indonesian Science Institute
- Indonesia Stock Exchange
- Bogor Agricultural University
- Padjadjaran University
- University of Indonesia
- Kehati Foundation
- WWF Foundation
- TNC (The Nature Conservancy)
- The World Bank
- Private sectors (PT Semen Cibinong, Holcim, Unilever Indonesia, PT ANTAM, PT Krakatau Steel, etc)

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