

## Green Investment: A strategy for Sustainable Economic growth and Investment

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### Abstract

Sustainable economic development has become an important area of concern due to climatic change with its long term effects. Climatic change has posed several challenges for economic sustainability of economies. Now major development projects have to comply with international environmental norms. Failure to do so may result in the delay of a project, fines including penalties for environmental damage or charges for remedial action, that affect the viability of a project or the value of any security taken. This paper investigates with help of secondary data using descriptive statistical technique opportunities and challenges of green investment. Here it is developed into suitable model for developing economies for successfully adopting green investment without much cost to their economies. The paper concludes that green investment involving direct investment and portfolio investment in firms adopting and following environmental protection norms will lead to sustainable growth and investment for economy.

**Keywords:** Green Investment, Sustainable investment.

### 1. Introduction

Green Investment is investment vehicles involved directly or indirectly in using green technology or environmental improving/sustaining practices. These involve companies using or investing in technology with sustainable environmental standards.

Green investment is associated with socially responsible investment with objective of going green. Green investment can include both direct and indirect investment. These include start-ups that are developing new methods for creating bio fuels or solar panels, and traditional market cap heavyweights that are expanding their product lines to include environmentally friendly products. Present concept of Green Investment is based on green economy in developing countries.

In green economics is a new concept suggested by environmentalists for development. Green economics is a way to achieve sustainable development with self sufficiency. It promotes social/economic well being. It reduces risks attached to environmental damage and ecological scarcities (UNEP, 2013). United Nations environment programme has introduced various concepts of Green Economics. Green economy helps in ideal utilization of resources in manner to ensure their availability in future. Some countries like Brazil, Uganda, Indonesia, Mexico and Bangladesh achieved success in their green economy initiative (Stone, 2010).

Green Investment is a part of green property at both micro and macroeconomic level. Green property is concept based on providing property rights to individuals/groups based on their environmental performance.

## **2. Problem Statement**

Most of developing countries on their way to development are required to use their resources in a way that will ensure their sustainability. Securing environment also becomes important. An economic activity affecting environment has long term adverse affects. These developing countries cannot stake their environmental resources for their present level of development. Sustainability of environmental resources thus makes concept of green investment more important.

Sustainable economic development has also become an important area of concern due to climatic change with its long term effects. Climatic change has posed several challenges for economic sustainability of economies. Now major development projects have to comply with international environmental norms. Failure to do so may result in the delay of a project, fines/penalties for environmental damage or charges for remedial action, and affect the viability of a project or the value of any security taken.

Foreign investment both direct and indirect can play an important role in enhancing green investment. In developing countries foreign investment is needed to meet the saving gap existing in these countries affecting their level of development. Foreign investment should not affect the long term development sustainable development and environment of developing countries.

### ***Objectives of Model***

- Developing suitable criteria for green investment in developing economies.
- Identifying suitable areas of green investment in developing countries.

- Identifying challenges for green investment in developing countries.

## **3. Theoretical base for Model**

Present suggested model is based on Limits to Growth theory commissioned under Club of Rome. It was authored by Donella Meadows, Dennis Meadows, Jorgen Randers and their team. Five variables were examined in the original model, on the assumptions that exponential growth accurately described their patterns of increase, and that the ability of technology to increase the availability of resources grows only linearly. These variables are: world population, industrialization, pollution, food production and resource depletion.

Model took into account the relations between various global developments and produced computer simulations for alternative scenarios. Limit to growth theory suggests that the way natural resources are exploited all over world in future natural resources will diminish, costs rise, leaving less capital for future investment. Eventually, new capital formation will be affected, thus affecting all sectors of economy and even population growth due to scarcity of resources. Limits to growth conclude that if present growth continues, the limits to growth will be reached sometime in the 21<sup>st</sup> century, at which time the global economic system will break down.

Although the projections of theory proved wrong and had been gone through a lot criticism but if we check growth in developed countries it is supporting limits to growth model especially in relation to resource depletion and environmental pollution. Accepting the reality that future is uncertain any theory or projection of that time if currently has same pattern in acceptable.

Based on above Limit to growth theory present model concentrates on two major variables of theory including resource depletion and environmental pollution. Model is build on assumption that resource depletion and environmental pollution in short term affects long term sustainable economic development of developing economies. Short term here is related to present policies and rate of exploitation of resources.

#### ***Assumptions of Model***

***For simplicity of model some of assumptions are made:***

- Economy is having sustainable economic development as its long term development objectives.
- Model is related long run sustainable economic development for which it is difficult to calculate some benefits and costs.
- Costs and benefits in long run are based on perceived expected benefits and costs and will follow present trend.
- Economy is developing economy.

#### **4. Concepts related to Green Investment**

This paper will concentrate on following concepts related to green investment:

- Objectives of Green investment
- Prioritizing internal investment projects in relation to their green performance.
- Inviting FDI in Green projects- Developing criteria for FDI selection.
- Cost Benefit analysis for approval of investment.
- Challenges for Green Investment.

#### ***Objectives of Green investment***

Objectives of green investment should be a part of objectives of sustainable economic development. It can include:

- i. Sustainable balanced economic development.
- ii. Economising present and future use of resources.
- iii. Avoiding wastage of resources.
- iv. Be a partner to world in a program of environmental awareness and environmental protection.

Above objectives could differ according to development priorities of countries.

#### ***Prioritizing internal investment projects in relation to their green performance***

Internal investors are aware of position of country including resources, their distribution and development needs of country. Some investors are more aware than others. Investment projects within the country should be given to company having a good record using energy saving techniques, economical usage of resources, and compliance of environmental laws both national and international. Failure to comply environmental laws should lead to termination of contract. Government has to develop green investment guidelines based on suggestions of environmentalists.

#### ***Inviting FDI in Green projects***

FDI both direct and indirect should be invited in areas where investment is needed. In developing countries of Africa there exist many investment opportunities. According to Nsehe (2011), top five investment areas in Africa include Agriculture, Tourism, Minerals, Infrastructure,

and Consumer Goods. Within these areas there are lot of opportunities for green investment:

- **In agriculture** green investment can include investment in production of agricultural machinery based on renewable source of energy, Soil fertility enhancing through green manures, agricultural production using natural methods.

- **In tourism** green investment can include green parks, developing green hotels providing services based on nature, issuing green bonds.

- **Africa is mineral rich continent** with lot of opportunities mineral mining industry and industries based on these minerals. Many big companies are interested in mining and exporting precious minerals. It is now high time to invite direct investment in heavy industries. Investment opportunity should be given to MNC's based on their environmental performance in other countries. Example Enron

- **In Infrastructure sector** investment in developing different means of transport using renewable energy or requiring low energy consumption, power projects developing energy based on renewable resources- Water, Solar, Wind, and Tidal.

- **In consumer goods** emphasis should be placed on investment by FDI in areas where internal investment is lacking. Standards should be developed to maintain quality of product.

#### **Development of Criteria for green investment**

Developing countries are needed to develop their criteria for green investment. Criteria should be based on sustainable development objectives of country.

- MNC'S have to bid for project based on their environmental efficiency.

- Short term projects should be started subject to renewal based on performance towards maintenance of environmental sustainability.

- Cost Benefit Analysis should be done to check viability of project (Gudger and Barker, 1993).

Investment will be allowed is  $(Bd - Cd - Bp) > 0$

Investment will not be allowed if

$$(Bd - Cd - Bp) < 0$$

where:

- Bd refers to the benefits of the development.
- Cd refers to the costs of the development.
- Bp refers to the benefits of preserving the environment.

This form of accounting can quite simply be taken a stage further by taking regard to future, as well as present scenarios.

$$Bt - Ct - Et(1 + r) - t > 0 \text{ or } < 0$$

where:

- Bt is the benefit in time t.
- Ct is the cost in time t.
- Et is the environmental damage done by the project (if there is an environmental improvement, the -E is replaced by +E).
- r is the discount rate.

**Challenges for Green Investment in developing countries**

- i. Due to development Priorities developing countries need investment both internal and external. For increasing investment within country government gives incentives to investors rather than putting so many conditions.
- ii. Green investment limits choice in different areas of investment.
- iii. Green Investment is less lucrative to investors in terms of private profits.
- iv. Green Investment as it is related to international environmental issues becomes more complicated in practice.

Due to above challenges issue of attracting Green investment within developing countries becomes difficult especially Foreign Investment.

Low private profits expectations make even internal investment difficult. Government can solve this problem through Public Private Partnership in green investment projects. In short term investors cannot get high profits, they have to marginalize their profits. Marginalization of profits here means they have to satisfy themselves low positive profits as shown in figure 1.

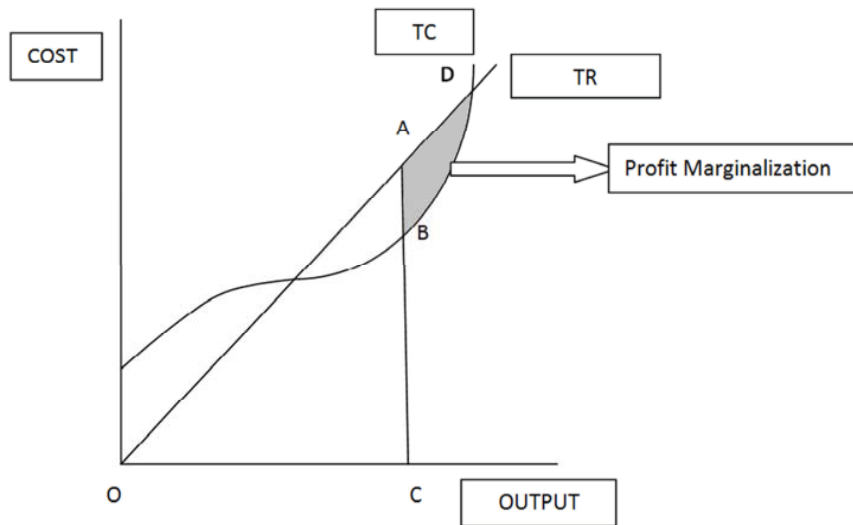
In figure (TR) is Total Revenue, (TC) is Total Cost and shaded area is area of profit marginalization by private sector indicating profits less than maximum profits.

Equation of profit is  $\Pi = TR - TC$  where,

$\Pi$  is total profit,

TR is Total Revenue and,

TC is Total Cost



**Figure 1. Profit Marginalization**

Maximizing profits is motive of private sector but when they work with public sector they can marginalize their profits and keep on investing

as long as Total Revenue (TR) is greater than Total Cost (TC).

## **5. Green Growth in Africa**

Investments into Africa's green growth will help expand the continent's economy, according to the African Development Bank (AfDB). A recent report published by the AfDB showed that investments in green growth were not only good for the environment but are also advantageous to economic growth in Africa. According to the Bank, Africa's transition to green growth is also a key pillar of the AfDB's strategy for 2013 – 2022 (Quandzie, 2013).

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## **6. Conclusion**

Green Investment is concept related to green economy. It should be based on long run sustainable economic development objectives of developing economies. Green investment could be a possible solution for sustainable investment needed in developing economies. It will also help in minimising wastage of resources. Due to challenges of green investment in developing countries, Public Private Partnership will help in enhancing green investment in developing economies.

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