

Over the last couple of years, the word “Green” has been found in a prolific use from a biological chlorophyllous colour pigment to an economy wide implication. Traditionally, Green is used to represent the Nature. With an increased attention to environment for the last few years, in response to mounting threat of climate change, it is not surprising to call for a holistic nature oriented approach that could equally protect environment as well as livelihood. However, skeptics are also large in number, who have been showing their reservations in this much widespread use of the word ‘Green’ based on antiquated ethical question whether it is going to become a new shrewd approach for industrialized countries to accumulate wealth or it is really useful to protect our over-degraded nature?

ECONOMY VS GREEN ECONOMY

Generally, economy means the system of production, distribution and consumption. In other words, ‘Economy’ refers to the activities related to the production and distribution of goods and services in a particular geographic region (Wikipedia, 2012). An economy consists of the economic systems of a country or other area; the labor, capital and land resources; and the manufacturing, production, trade, distribution, and consumption of goods and services of that area (Wikipedia, 2012). In addition to general economic goal of maintaining growth, *green economy* aims at “resulting in improved human wellbeing and social equity, while significantly reducing environmental risks and ecological scarcities. Sectors in green economy include renewable energy, low-carbon transport, energy-efficient buildings, clean technologies, improved waste management, improved freshwater provision, sustainable agriculture, forestry, and fisheries” (UNEP, 2011).

Green economy provides a huge opportunity to green jobs¹ and hence helps to eradicate poverty. It helps in investing in green technology, using eco-friendly energy sources as much as possible and using more efficient methods. It promotes to reduce carbon footprint through reduced energy use and consumption and recycling. Consequently, it accelerates the transition to a low carbon society².

The implication of green economy, however, in Least Developing Countries (LDCs) like Bangladesh has some limitations. Since the developed countries are main contributors of greenhouse gas emission; money disbursement from their fund in the name of green economy has a negative impact on developing countries. Besides, financialization and commodification of the nature, ignoring the

¹ Green jobs can be generically defined as the direct employment created in different sectors of the economy and through related activities, which reduce the environmental impact of those sectors and activities, and ultimately brings it down to sustainable levels. This includes ‘decent’ jobs that help to reduce consumption of energy and raw materials, decarbonizes the economy, protect and restore ecosystem services like clean water, flood protection and biodiversity and minimize the production of waste and pollution (UNEP, 2009).

² A low-carbon society should: 1) take actions that are compatible with the principles of sustainable development, ensuring that the development needs of all groups within society are met; 2) make an equitable contribution towards the global effort to stabilize the atmospheric concentration of CO₂ and other greenhouse gases at a level that will avoid dangerous climate change, through deep cuts in global emissions; 3) demonstrate a high level of energy efficiency and use low-carbon energy sources and production technologies; and 4) adopt patterns of consumption and behaviour that are consistent with low levels of greenhouse gas emissions (Seka and Nishioka, 2008).

traditional knowledge, local and indigenous people etc. are the some disadvantages of this new paradigm in the realm of economics. Despite such criticism, it is obvious that without green technological revolution, ensuring sustainable development would be somehow impossible.

THE GREEN ECONOMY: FROM THEORY TO PRACTICE

The conceptual clarity of “green economy” is still fuzzy, debate is also mounting on its operational framework from near to medium term implications, how it would be implemented in developing and least developed countries. Hence, it is too early for Bangladesh to have a concrete decision on this coinage- either fully accepting or rejecting green economy framework since she is still at a slow developing stage. However, it is now evident that conventional fossil fuel based *Brown Economy* has resulted in many externalities ranging from climate change to financial crisis (UNEP, 2011). Under these circumstances, the need for a nature focused new economic system has become quite obvious. The United Nations Environment Programme (UNEP) also justifies its position in favour of the “green economy” by setting this year’s World Environment Day theme as “(the) Green Economy: Does it include you?” Importance of the theme is clearly visible as the world observed Rio+ 20 with a focus on green economy as well including other UN conferences like UNCBD, UNCCD etc.

Till today, the green economy framework stands only on technological platform that influenced politicians to capture the political and economic opportunities presented by potential new technologies and their implications for promoting a convenient and supposedly ‘green’ economic agenda. But much less has been discussed regarding the potential negative social and environmental consequences of promoting a green economy, also much less has been discussed about the need to reduce demand and overconsumption by the wealthy nations. The skeptics are therefore defining the ‘green economy’ as repackaging of consumption oriented neo-liberal economics (Global Forest Coalition, 2012).

AN OPERATIONAL FRAMEWORK FOR THE GREEN ECONOMY

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Like the orthodox economic system, the ‘green economy’ is also based on three nodes such as production, distribution and consumption, but it slightly differs from the orthodox system in terms of the final output. Traditionally, the orthodox economic system has primarily focused on achieving growth with or without having consideration to environment, but the green economy results in improved human wellbeing as well as social equity, while significantly reducing environmental risks and ecological scarcities. The particular sectors in the ‘green economy’ include renewable energy, low carbon transport, energy-efficient buildings, clean technologies, improved waste management, improved freshwater provision, sustainable agriculture, forestry, and fisheries (UNEP, 2011).

No doubt, the green economy aims at improving the environmental health of the economy, but question arises whether developing countries can comply with this approach or not. Countries like Bangladesh may face tremendous challenges in implementing this concept since her poor economic strength leaves little room for prioritizing environmental issues other than poverty eradication, energy access, transportation needs, food and water security and rural development as immediate development priorities. How these countries could sustain its growth while maintaining environmental integrity? The answer is quite easy if we consider Karl Burkart’s (2012) definition of green economy where he indentifies six priority areas for operationalizing green economy such as renewable energy, green buildings, clean transportation, water management, waste management and land management. Proper implementation of green activities in these sectors with the help of low

carbon technologies and financial support from the developed countries will help to achieve the goal of sustainable growth with maintaining environmental health.

EVOLUTION OF GREEN ECONOMY

The United Nations Conference on Environment and Development (UNCED), well-known as the “Earth Summit” held in June 1992 in Rio de Janeiro, Brazil, adopted fundamental principles and a programme of action called ‘Agenda 21’ for promoting sustainable development. Following a review of progress in 1997, the United Nations General Assembly, reaffirming the Rio principles and its commitment to further implementation of Agenda 21, decided to convene the World Summit on Sustainable Development (WSSD) in August/September 2002 in Johannesburg, South Africa, to find ways and means to fully implement the earlier decisions. Having received renewed support from WSSD, the Commission on Sustainable Development (CSD) at its eleventh session (CSD11) held in New York in April/May 2003 decided to formulate a multi-year programme of work beyond 2003 (ESCAP, 2003)

In response to the financial and economic crisis, United Nations Environment Programme (UNEP) had called for a “Global Green New Deal” for reviving the global economy and boosting employment while simultaneously accelerating the fight against climate change, environmental degradation and poverty (UNEP, 2009). It invited the 20 most advanced economies to engage in a ‘Global Green New Deal’ by investing at least 1 per cent of their total GDP in promoting green economic sectors. UNEP recommends that these economies give priority to investments focused on improving energy efficiency in new and existing buildings, stimulating renewable energy sources and enhancing sustainable transport.

The importance of inclusive growth with employment creation, decent work and livelihoods in the context of the green economy were discussed thoroughly in several consultative meetings in the region on the UNCSD, including the High Level Symposium on the UNCSD organized in Beijing, 08-09, September 2011 and the Ministerial Dialogue on the “Green Economy and Inclusive Growth”, New Delhi, 3-4 October 2011 (ESCAP, 2011).

It is widely anticipated that the Rio Conference will reaffirm Principle 12³ of the 1992 Rio Declaration on Environment and Development, and Chapter 2 of Agenda 21 to build a supportive and open global green economy, and consider proposals to advance their implementation (UNCTAD, 2011).

It is true that the ‘green economy’ is being promoted under auspices of heavily subsidized fiscal policy with the aid of improved technology in developed countries. Seven G20 countries (China, France, Germany, the United States, Mexico, Republic of Korea, and South Africa) have announced green components in their stimulus packages, with as many as 10 to 20 per cent range in the sector of railway infrastructure, construction of water infrastructure, sustainable development and land use management, sustainable transport, climate protection, energy efficient buildings, renewable energies, waste management etc. UNEP encourages the G20 governments to maintain and even

³ **Principle 12:** States should co-operate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing transboundary or global environmental problems should, as far as possible, be based on an international consensus (UNESCO, 1992).

accelerates momentum on green investments in the stimulus packages. In response to this, China and South Korea stand out, however, with green investments that represent 34 and 78 per cent of their stimulus packages, respectively (UNEP, 2009). However, as an agro-based nature dependent country like Bangladesh also has huge potentials in capturing the benefits arising from different green economy sectors such as renewable energy, waste management, agriculture, forestry, transportation etc.

BIO-ECONOMY: A NEW DIMENSION OF GREEN ECONOMY

This bio-economy⁴ approach is heavily based on the use of biomass, both as a fuel and as a raw material from which to manufacture a wide range of products, including plastics and chemicals. This will be made possible courtesy of a range of technologies including genetic manipulation, nanotechnology and synthetic biology.

The planet's capacity to produce biomass is limited, and increasing demand for land is already leading to the destruction of forests and biodiversity, escalating hunger, and conflict over land.

The bio-economy proposal is not about protecting the environment: it is about promoting the economy – in spite of clear indications of the harmful impacts that are already resulting from massive new demand for biomass, including loss of biodiversity and escalating hunger and conflict. The bio-economy agenda is especially attractive to fossil fuel companies who want to be seen pursuing an exit-from-oil strategy; and to biotechnology companies desperately in need of a *Trojan horse* to provide safe passage for risky and unpopular new technologies.

Instead of promoting a socially-blind 'green economy', an alternative world view would recognize the bio-cultural approaches of indigenous peoples and local communities who have long succeeded in developing sustainable livelihoods, a '*buenvivir*' in harmony with the ecosystems they live in. Territories and areas conserved by indigenous peoples and local communities, women-driven forest conservation and restoration initiatives, community initiatives that sustain food and energy sovereignty, and the efforts of small peasants to produce food in harmony with our planet all serve as inspiring examples of ways in which local economies build on the principles of care, harmony with nature, human rights and sovereignty, and contribute to the well-being of both community members and the planet as a whole (GFC, 2012).

THE GREEN ECONOMY AND BANGLADESH

The Renewable Energy

On the one hand, specific geographical location makes Bangladesh as one of the most vulnerable countries in the entire world; on the other hand, it creates huge opportunities for renewable energy. ILO (2010) identifies four renewable options in Bangladesh: solar photo voltaic (PV) electrification, bio mass energy, wind energy and improved solar cooking stoves. Over last few years, solar energy has received huge acceptance in the rural areas as a means of electrification. Good news is that urban residents are also starting to use solar energy due to regular power crisis as well as low-cost hassle free source. Bangladesh Renewable Energy Policy (2008) has recognized renewable energy as the most cost-effective and sustainable energy source to meet the country's growing energy demand.

⁴ The 'bio-economy' focuses specifically on ecosystem-based products and services, based on the unproven assumption that this approach will automatically be more sustainable than using fossil fuels (conveniently it certainly does sound sustainable).

Moreover, Solar PV and biogas/biomass are creating new job opportunities in both rural and the urban areas along with helping to improve environmental condition (Waste Concern, 2010a).

Waste Management

The Bangladesh Poverty Reduction Strategy Paper (PRSP) acknowledged the concept of 3Rs (reduce, reuse and recycle) and proposed to promote these in order to improve upon hazardous and unsustainable waste management practices. Sixth Five Year Plan (2011) also emphasizes on measures toward management of wastes and generating electricity from waste for environment, climate change disaster management for sustained development. The opportunities for greening the waste sector come from three inter-related sources: 1) growth of the waste market, driven by demand for waste services and recycled products such as recycled paper, plastics, etc.; 2) increased scarcity of natural resources and the consequent rise in commodity prices, which positively promotes the demand for recycled products and the waste to energy (WtE); and 3) emergence of new waste management technologies (UNEP, 2011). Creation of new jobs in waste management sector is also a promising prospect. Waste Concern (2010b) estimates that composting urban waste and plastic waste recycling account for around 90,000 and 68,000 jobs respectively in Bangladesh.

Agriculture

Being an agrarian country, many opportunities exist in Bangladesh for promoting green agriculture. Green agricultural practice reduces application of synthetic chemical fertilizers and pesticides while providing low-input alternatives to high-intensity agricultural activities. In Bangladesh green agriculture practice has many forms that include organic farming, mushroom cultivation, bee keeping, sericulture, bio-slurry, pesticide free vegetables and water conservation. Even though many farmers fear that primarily production may reduce in green agriculture, but low input agriculture eventually creates much profit than conventional mechanized agriculture along with improving ecosystem health. In addition to existing bulk labour engagement in agriculture sector, green agriculture will create additional 41,548 jobs annually in Bangladesh (ILO, 2010). However, greening the agriculture is facing a multitude of challenges. Some of these include rapid contraction of arable agricultural land, lack of adequate organic fertilizer, insufficient environment friendly technologies, skilled manpower, lack of awareness about green agricultural practices, population growth, changing pattern of demand driven by increased income, increasing vulnerability of agriculture to climate change etc.

Forestry

Forestry is now under critical scrutiny by both policy makers and practitioners with the increased attention to climate change. Its mitigation potentiality and financialization of nature has broadened the scope of utilization. However, risks persist on benefit distribution, whether real forest users would have access or market will determine the future of forest? With an increased focus to nature, nursery business, social forestry, agro-forestry afforestation and reforestation could generate huge employment opportunity within the country. In addition, Bangladesh can collect money from international climate market through selling carbon stored in different natural forest under REDD+ (Reducing Emissions Avoided Deforestation and Degradation) framework. It is intriguing that Bangladesh has developed its 'Green Development Programme', which calls for an inclusion of donors and the private sector to work in collaboration with the government. Even though forestry is a less prioritized sector in terms of employment generation in Bangladesh, but ILO (2010)

estimates that in the forestry sector as many as 2,8813 jobs may create annually under green economy framework.

Industry and Manufacturing

There is a common conception that manufacturing sector and nature are disproportionately related. In fact, this is true in conventional economic system where nature is considered as capital supplier and very little attention has been paid to environmental health than growth. Manufacturing sector consumes lions' share of energy produced, hence emit carbon more than any other sectors. Bangladesh is not an industrialized country; however the emission from manufacturing sector is not negligible compared to other sectors. Yet, isolated efforts have been made to increase energy efficiency and implement conservation measures in some industrial facilities such as sugar mills, spinning mills, fertilizer factories, processing mills and cement mills. 'Cogeneration'-very low installation costs, small size installations, suitable for rural areas- is another energy efficiency opportunity that has been piloted in several sugar factories and textile mills (Waste Concern, 2010c).

Real Estate and Housing

The real estate and construction sector is the one of most growing sectors over last couple of years in Bangladesh. However, most often construction and housing works are being operated at the expense of forest, arable land and important wetlands. Moreover, construction materials are produced in energy intensive and environmentally destructive way. Nonetheless, we have ample opportunity to apply principles of green economy in construction sector, which could generate new job opportunity along with saving energy and money. There is some promising news, since according to some reports, the real estate companies in the country have by now realized the importance of green technology and around two-thirds of these companies have already started using green building technology at varying degrees (Waste concern, 2010c).

Transportation for research and action on development

Transportation sector is one the biggest sources of Green House Gases (GHGs). Even though man and car ratio in Bangladesh is very low compared to many countries, but in urban areas it is increasing alarmingly. More importantly, the urban environment has been experiencing untenable traffic jam due to inadequate roads and increased number of private cars, which results in decreasing valuable working hour along but increasing environmental degradation. Despite the challenges, there is a huge potentiality of making transportation sector greener and environment friendly. Bangladesh is well ahead in the road of green transportation. Government has increased tax on private car to encourage public transport sector and also introduced Compressed Natural Gas (CNG) as fuel alternative to petrol and diesel which could be regarded as important initiatives towards a green transportation system.

Climate change adaptation

Climate change adaptation is one of the promising sectors of green economy in Bangladesh. Considering this, 'Bangladesh Climate Change Trust Fund (BCCTF)' was initiated in 2009 with an initial budget of Tk. 7000 million. In FY 2010-11, 60 Government projects and 53 NGO projects were selected at a cost of Tk. 7,196.1 million and Tk. 213.4 million. By contrast, in FY 2011-12, Government included another 20 projects under 13 ministries now the total cost under BCCTF stands at Tk. 9,791.73million (MoEF, 2011). However, climate adaptation activities account for most

of the identified environment-related jobs. On average nearly US\$2 billion is spent on adaptation activities each year. These investments support around 1.7 million jobs across key sectors such as agriculture, water, construction and public administration. Adaptation jobs are created in physical adaptive measures - flood protection, cyclone shelters and water efficient irrigation - and 'soft' measures, such as early warning systems for natural hazards and better guidelines, education and communication (ILO, 2010).

Financial mechanisms, transfer of technology, skilled manpower, process of fund disbursement, inadequate allocation of climate change adaptation sector by government of Bangladesh etc. are major challenges in this sector.

Disaster Risk Reduction and Resilience Building

Bangladesh is globally acknowledged as being one of the most disaster-prone countries, exposed to a range of natural hazards. The dangers of floods and cyclones are most widely recognised but droughts and earthquakes also pose significant risks in some parts of the country. Global climatic changes and a high and increasing population density exacerbate these challenges. Despite of these challenges, disaster preparedness and Disaster risk reduction⁵ (DRR) is praiseworthy in Bangladesh. The Disaster Management and Relief Division (DM&RD), MoFDM⁶ of the Government of Bangladesh is the leading authority for coordinating national disaster management efforts across all agencies. For accomplishing this division, in January 1997 the Ministry issued the Standing Orders on Disaster (SOD) in Bengali then in 1999 in English to guide and monitor disaster management activities in Bangladesh.

Besides, the Comprehensive Disaster Management Programme (CDMP) was launched by the GoB in 2003 as a key strategy to advance government and join risk reduction efforts among all key actors at national and local levels. The programme encompasses all aspects of risk management with an objective to strengthen the capacity of the Bangladesh disaster management system.

Moreover, the Cyclone Preparedness Programme (CPP) is engaged in massive public awareness and capacity development activities for pre-disaster preparedness at family and community levels. Furthermore, the Community Based Flood Information System (CFIS) is an innovative initiative, piloted in the remote flood prone communities, using mobile phones to disseminate flood forecasting messages to the local population. There are also some initiatives from different actors on Community Based Flood Early Warning dissemination which are still in their primary piloting stage. For proper execution of these activities the government of Bangladesh has taken some realistic initiatives. Some of these include: National disaster response and recovery fund, national risk reduction fund, financing sectoral plans, district/upazila/union/paurashava/city corporation disaster management fund, all of which will also create a great opportunity for development of green economy in Bangladesh.

⁵ Disaster risk reduction (DRR) is the concept and practice of reducing disaster risk through systematic efforts to analyse and manage the causal factors of disasters, including through exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.

⁶ Ministry of Food and Disaster Management

CONCLUSION

The green economy has ambivalent implications for Bangladesh. Some sectors could run well under green economy framework such as forestry, tourism, transportation, water resources management etc. Conversely, cautious approach is needed in implementing green economy principle in agriculture sector since production may reduce initially in extensive farming which may create a temporary food crisis for a land deficit country like Bangladesh. It does not mean that we should continue environmentally destructive mechanized agriculture forever, rather we should start green agriculture now, may be in a limited scale that can be replicated as wider scale in future. Equally, we have to be careful about equity and justice issue. The benefits arisen from green economy should be distributed following the principle of equity and justice.



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