

Ecopreneurship and Green Product Initiative (GPI): An Agenda for Nigeria's Sustainable Development in the 21st Century

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This paper examines ecopreneurship and green product initiative as an agenda for sustainable development in Nigeria. It explains the exclusive roles of ecopreneurship and green product initiatives in the rising trend of green economy in the current global market. The paper documents the numerous benefits associated with eco-entrepreneurship and how these benefits can translate to anticipated sustainable development. It also explains the multi-level intersection of eco-entrepreneurship and green product initiatives within the context of sustainable development. Theoretically, the paper adopts Schumpeter's theory of entrepreneurship and ecological modernization theory as a development framework to underline the importance of ecopreneurship and green product initiatives in the context of sustainable development. The paper is exploratory with the use of secondary data sourced from current and relevant academic publications and reports. Findings from the paper serve as indicators and pointers to government, researchers, academicians and other stakeholders to promote, engage and invest in ecopreneurship and green product initiatives as the lens to locate the path to a more sustainable future.

Keywords: ecopreneur, innovation, green products, agenda, Nigeria.

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Ekoprzedsiębiorczość oraz inicjatywa na rzecz ekologicznych produktów – Program zrównoważonego rozwoju Nigerii w XXI wieku

W artykule omówiono ekoprzedsiębiorczość oraz inicjatywę na rzecz ekologicznych produktów jako program zrównoważonego rozwoju w Nigerii. Wyjaśniono, jak wyjątkową rolę odgrywają one w ramach kształtującej się tendencji w zakresie zielonej gospodarki na obecnym rynku światowym. W artykule udokumentowano liczne korzyści związane z ekoprzedsiębiorczością oraz wskazano możliwe sposoby ich przełożenia na oczekiwany zrównoważony rozwój. Wyjaśniono również wielopoziomą wspólną płaszczyznę ekoprzedsiębiorczości i inicjatyw na rzecz ekologicznych produktów w kontekście zrównoważonego rozwoju. Z teoretycznego punktu widzenia w celu podkreślenia znaczenia ekoprzedsiębiorczości i inicjatyw na rzecz ekologicznych produktów w tym właśnie kontekście jako ramy rozwoju przyjęto teorię przedsiębiorczości Schumpetera oraz teorię ekologicznej modernizacji. Artykuł ma charakter eksploracyjny. Wykorzystano w nim dane wtórne z aktualnych tematycznych publikacji naukowych oraz raportów. Wnioski służą jako wskazówki i zalecenia dla rządu, badaczy, naukowców

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i innych zainteresowanych podmiotów, dotyczące wspierania ekoprzedsiębiorczości i inicjatyw na rzecz ekologicznych produktów oraz angażowania się i inwestycji w tym zakresie, a także pokazujące kierunki podążania ku zrównoważonemu rozwojowi w przyszłości.

Słowa kluczowe: ekoprzedsiębiorca, innowacja, produkty ekologiczne, program, Nigeria.

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1. Background

The twenty-first century has witnessed copious environmental problems such as land degradation, increasing pollution level, loss of biodiversity and climate change which still remain unresolved. These environmental problems, to a large extent, have been traced to human entrepreneurial activity that triggered a continual increase in consumption of environmental resources and an alteration to the natural composition of the environment (Cohen and Winn, 2007; McEwen, 2013). This state of affairs has many explanations but some authors linked it to Schumpeter (1934), who contended that the innovations made by entrepreneurs are the major drivers of economic development and the fundamental factors in trade formation. The neo-Malthusian environmentalists, for example, supported Schumpeter's view but argued that over the past decades economic growth through entrepreneurial activity had not been going hand in hand with the preservation of the eco-system (Kate, Parris and Leiserowitz, 2005; Morelli, 2011). Thus, proponents of the neo-Malthusian ideology suggested that entrepreneurs as agents of "creative destruction" – as Schumpeter lyrically refers to them – could also be agents of a "creative solution" to address global environmental problems by introducing environmentally acceptable ideas, products and services (Dean and McMullen, 2007; York and Venkataraman, 2010). One such environmental approach to economic activity is through "ecopreneurship" and "green product initiatives". Therefore, this paper sets out to advocate ecopreneurship and green product initiatives (GPIs) as an agenda for sustainable development in Nigeria.

This paper is spurred by the fact that long-term sustainability of the economic system does not depend only on measur-

able growth, but also on ecological aspects of sustainable development goals (York and Venkataraman, 2010). This paper is significant given the need for ecopreneurship to solve contemporary environmental problems through the adoption and application of eco-friendly innovations in Nigeria and other countries in the world. Another foremost reason for this paper is inherent in the words of Volery (2002), who affirmed that finite resources, such as fish, minerals or gas, are limited in their supply and once consumed, many of them cannot be recreated and we will be left with lessening or no natural resources if we do not sustain them. Hence, this paper will reveal how economic activity (ecopreneurship) and consumption of natural resources can operate in a sustainable manner. In addition, this paper supports the argument that there is a need to constantly look for alternatives, e.g. recycling or new sources of energy generated from wind or solar energy in order to integrate environmental concerns into business activity. Therefore, a study of this nature is significant in many ways in that it reveals new business opportunities within the confines of sustainability agendas.

2. Literature Review

A basic review of literature is made in this paper. According to Lawal (2016), a basic review of literature depicts planned efforts to locate, appraise and synthesize leading available evidence relating to a specific research problem in order to provide informative and evidence-based answers. For the sake of a more comprehensive structure of this paper, discussions are presented under the following sub-headings.

3. Concept of Entrepreneurship: A Short Examination

It is suitable to examine the term “entrepreneurship” as part of the ecopreneurship ideology. The subject “entrepreneurship” has been popular in contemporary academic circles. The concept has a long history of more than 200 years. Entrepreneurship as a concept was first recognized in the 1700s and its understanding has evolved ever since. Casson (2002), a well-respected economist, affirmed that entrepreneurship means different things to different people. In current literature, some authors relate entrepreneurship with setting up a new business and pursuing it (Schumpeter, 1965; Bygrave and Hofer 1991; Reiss, Howard and Jeffrey, 2000) while others are of the opinion that entrepreneurship means a process of identifying opportunities and developing a conceptual approach to allocation of resources to turn opportunities into incremental wealth (Thomas and Mueller, 2000; Burnett, 2001).

Moreover, the Austrian school of economics, a school of thought within the discipline of economics, analogous to the neo-classical school of economics or the Keynesian school, offers rich insight into the modern definition of entrepreneurship as an application of new innovations to create business opportunities in a particular economy (Morris, Kuratko and Covin, 2008). For instance, the utilization of alternative energy, clean technologies and integrated eco-innovations in the manufacturing and services sectors have generated a lot of investors, employment and business opportunities in contemporary societies.

The concept has equally been recognized as a preferred instrument to liberate people with lucrative business ideas from total reliance on the government for employment, which invariably turned them into innovative and self-reliant individual (Babalola and Omobowale, 2012). In other words, the term entrepreneurship denotes an attempt to unlock the potential in individuals for the creative process which involves creation of new products and services or doing old things in a better way (McQuaid, Smith-Doerr and Monti 2010; Robinson, Blockson and Robinson, 2007). It is therefore interesting to note that the term entrepreneurship is heterogeneous and multidisciplinary in nature (Landstrom,

2005). The multidimensionality of entrepreneurship stimulates the intention to perceive an entrepreneur in a similar way to Gibb’s view, namely “...as an opportunity seeker, someone who combines the factors of production in an innovative manner and who seeks out and exploits opportunities and gaps in the market” (Gibb, 1995, cited in Amiri and Marimaei, 2012, p. 22). Through this definition, Gibb (1995) explains one essential aspect of entrepreneurship that makes it significant in the framework of ecopreneurship, namely innovation. The essential task of an entrepreneur is to introduce new products, services and procedures to the market, which is a similar procedure required for greener and more environmentally friendly products and services to thrive. An innovation in this regard includes manufacturing zero-emission cars, shifting from business trips to video-conferences, or producing something useful like soap from previously hazardous waste like used vegetable oil. Arriving at this point, it is therefore imperative to examine the term “ecopreneurship”.

4. Ecopreneurship: Definition and Meaning

Ecopreneurship is a new concept in business research (Schaper, 2002). The concept began to gain scholarly attention around the 1990s, when some researchers used the terms such as “green entrepreneur”, “environmental entrepreneur” and “eco-entrepreneur” to define the concept itself (Schaper, 2002; OECD, 2011). Ecopreneurship simply relates to carrying out activities that keep the environment clean as well as meeting the business objective but it is among the under-researched concepts in contemporary business research (Chopra, 2014; Hartmann and Ibanez, 2006).

Although, the term “ecopreneurship” is formed by stringing together two words, namely ecological (eco) and entrepreneurship (McEwen, 2013), to denote an innovation or entrepreneurial action that hinges on the motive to produce environmentally suitable products and services (Schaltegger, 2005). An entrepreneurial action occurs when the presence of enterprising individuals and the presence of lucrative opportunities are combined (Shane and

Venkataraman, 2000). Ecopreneurs are therefore enterprising individuals who key into the opportunities of turning waste to wealth. In the view of Hall, Daneke and Lenox (2010), ecopreneurship implies “the effort to minimize environmental footprint, namely the total environmental and social cost resulting from human entrepreneurial activity” (Hall, Daneke and Lenox, 2010, p. 440).

Volery (2002) defined ecopreneurship as the fulfilment of environmental obligations in entrepreneurship. In turn, Isaak (2002) construed the concept of ecopreneurship to mean an existential form of business behaviour committed to sustainability. For the sake of this paper, ecopreneurship can be perceived as concerted efforts made by business innovators or companies to reduce environmental hitches and promote quality natural environment in their operations. It is the hallmark of green economy. This is inherently true because green economy is a strategic step towards achieving sustainable environment via initiatives that focus on converting environmental threats into opportunities and solutions towards a sustainable world (UNEP, 2012). Perhaps, another way to understanding ecopreneurship is to define an ecopreneur.

5. Who is an Ecopreneur?

In his work, Isaak (2005) described an ecopreneur as *a person who seeks to transform a sector of the economy towards sustainability by starting business in that sector with a green design with green processes and with the life-long commitment to sustainability in everything that is said and done* (Isaak, 2005, cited in OECD, 2011, p. 25). Based on this definition, ecopreneurs are therefore entrepreneurs who base their business philosophy on the norm of sustainability (Kirkwood and Walton, 2010). Another fact that must be noted is that ecopreneurs do not engage in eco-friendly markets or businesses only for profit making but also due to their strong entrepreneurial commitment to “green social values” and environmental values (Gibbs, 2009). Hence, it can be said that ecopreneurs operate companies that fulfil both social and environmental requirements (Chopra, 2014). Ecopreneurs or green entrepreneurs operate by either starting a green business, providing green

products and services or introducing greener production techniques, boosting demand for green products and services, and creating green jobs (OECD, 2011; Rivera-Camino, 2007; Schaper, 2002). However, Kainrath (2009), after studying several case studies, deduced that there were three essential elements that determined the success of ecopreneurs in any given society. These elements are:

- i. Eco-innovation: This relates to providing innovative solutions to solve environmental problems.
- ii. Eco-commitment: This relates to creating and implementing policies that will help create a commitment towards focusing on green activities.
- iii. Eco-opportunity: This relates to identifying the opportunities for innovation that will help solve environmental problems as well as achieve sustainability in business operations.

By and large, the studies reviewed for this paper showed that the critical factor acting at the core of ecopreneurship is “eco-innovations” (Klimova and Zitek, 2011; McEwen, 2013). This fact can be buttressed with the view of Singh and Panackal (2014), who posited that if companies and countries want to be successful in the current global market, they cannot rely on having low-cost commodities as their competitive advantage, but rather on new and innovative environmental technologies, services and processes which will be more important sources of competitive advantage in the current green economy.

6. Types of Ecopreneurship

The review of current literature revealed that there are basically two categories of ecopreneurs (McEwen, 2013; Volery, 2002). These categories include those who have a profit or economic orientation on the one hand and those who have a sustainability orientation and want to help change or improve the environment on the other hand (Isaak, 2002; Taylor and Walley, 2003; Koester, 2011). Schnick, Marxen and Freiman, (2002) further state that these categories are the two ends of the ecological orientation range. At one end are ecopreneurs who constantly adopt environmentally-friendly practices and at the other end are entrepreneurs who give no ecological consideration

to the businesses at all. In other words, ecopreneurs are either starting new green businesses or making their existing businesses green (OECD, 2011).

7. Characteristics of Ecopreneurs

The outcomes of the review of literature on ecopreneurship or green entrepreneurship revealed that all ecopreneurs (green entrepreneurs) undertake business initiatives which involve a measure of risk. Ecopreneurs' results are never predictable and the possibility of their failure is always present (Isaak, 2002; Schaper, 2005; Koester, 2011). Just like other entrepreneurs, ecopreneurs must also identify a feasible business opportunity, research it, harness resources to turn the idea into reality, develop and execute a plan for business development, and supervise its growth (Schaper, 2005; Koester, 2011). Another feature common to all ecopreneurs is that their commercial activities have an overall positive effect on the natural environment and the move towards a more sustainable future (Schaper, 2005; Koester, 2011; Singh and Panackal, 2014). This may be that all of their business is structured and operated in such a way that every component has a neutral or positive impact on the environment; but just as plausibly, it might be that some aspects are green, whilst other are still "brown" (Gibbs, 2009; OECD, 2011; Chopra, 2014). Indeed, we live in an imperfect world; it is likely that few business ventures can only remain 100% pure since there will always be some kinds of waste materials, pollutants or dirt emanating from their activities (Schaper, 2005). However, environmental entrepreneurs create and operate projects whose net waste has positive impact on the environment.

Furthermore, the third factor that appears to be common to many ecopreneurs is their intentionality (Isaak, 2002; Schaper, 2005). The personal belief system of ecopreneurs – their set of values and aspirations – usually sees protection of the natural environment and a desire to move onto a more sustainable future pathway as important goals (Volery, 2002; McEwen, 2013). They come in many different forms, engage in a wide variety of business activities, and thus far it has not been possible to identify a "typical" profile of green entrepreneurs (Schaper,

2002; Rivera-Camino, 2007; OECD, 2011). Only the behaviour of entrepreneurs – their goals, what they actually do in their business and the outcomes that they produce – can safely be used to set them apart (Schaper, 2002; Rivera-Camino, 2007; OECD, 2011). With this fact in hand, the next section discusses the concept of green product initiatives for sustainable development.

8. Green Product Initiatives (GPIs)

One of the ways to facilitate better understanding of the concept of green product initiatives is to first and foremost define the two terms (green product and initiatives) differently. The task of defining green products has been attempted by many authors from different fields of study, which led to the production of several definitions of the term. On a general note, a green product is referred to as an ecological product or eco-friendly product. According to Shamdasani, Chon-Lin and Richmond (1993), a green product represents a product that will not contaminate the earth or deplete natural resources, and can be recycled or conserved. Similarly, Ottaman (1998), a renowned author in the field of green marketing, described green products as products that are typically durable, nontoxic, made from recycled materials, or minimally packaged. In turn, authors like Elkington and Makower (1988) defined a green product as an invention that has more environmentally sound content or packaging in reducing the environmental impact. In other words, green products are goods with recycled content, packaging or less toxic materials. Some green products are presented in Table 1 below.

Nonetheless, studies have shown that among all the truly green products comes the risk of "greenwashing"; that is, products that are advertised as green without truly offering environmental or health benefits (Durif, Boivin and Julien, 2010).

On the other hand, the term "initiative" has no general definition. However, the examination of literature revealed that the term is mostly used to denote mixed-initiative interactions and mixed-initiative systems (Allen, 1994; Haller and McRoy, 1997). One main approach to defining the word "initiative" is to draw on dictionary

Table 1. List of green products

S/N	List of Green Products	Description
1	Dryer balls	Dryer balls are basically large rubber balls with spikes covering the surface. Their purpose is to separate the clothes to facilitate quicker drying and keep them soft. The reusability of the dryer balls renders traditional dryer sheets obsolete, and allows consumers to save money in the process.
2	Eco-friendly paper shredders	Modern hand-powered shredders have now emerged and serve as a convenient eco-friendly solution, simply requiring users to twist their hands to activate the shredding mechanism. These green shredders are portable, incredibly easy to use, and represent an easy way to help conserve energy.
3	Green power outlets	Eco-friendly outlets allow consumers to cut off all power to their gadgets with the simple turn of a dial, thus eliminating the vast majority of vampire power and enhancing energy efficiency in the process.
4	Solar speakers	This innovation is evident in the Etón Rukus wireless speakers, a sleek, contemporary sound system that boasts high-quality auditory punch and is powered primarily by the sun.
5	Green GPS units	The Pama Eco Navigator Satellite Navigation System is the sole GPS product on the market dedicated to helping minimize cars' carbon footprint.
6	Eco-friendly verification phone apps	Consumer Reports' free downloadable phone app Eco Label contains lists of certifiably green products and can help shoppers potentially avoid being duped by false advertising.
7	Solar panel charging cases	The Voltaic Generator Solar Laptop Charger consists of high-quality solar panels mounted on a waterproof case, utilizing batteries specifically calibrated to efficiently absorb solar power.
8	Solar water heaters	Solar water heaters are superior to their traditional counterparts in virtually every single way. The reliance on solar power boosts overall efficiency rates, unit lifespan, and reduces the emission of harmful particles.
9	LED lights	LED lighting enhances bulbs' efficiency and lifespan while still providing high quality brightness. LED bulbs are also devoid of toxic chemicals and produce virtually zero harmful UV emissions.
10	Energy saving TVs	Recently released energy saving TVs continue to require less and less power to properly function, which helps both the environment and consumers wallet.

Source: Trevor Gould (2013), *Top 10 Green Products*.

definitions as a foundation. The dictionary definition of initiative is "ability to initiate things, enterprise; first step; power or right to begin", whereas in Oxford dictionary, to initiate means to "originate, begin, set going" (Oxford, 1984). However, for the purpose of this paper, initiative means the ability to use a new plan or process to achieve something or solve a problem. This definition of initiative is actually quite close

to how artificial intelligence researchers view initiative. For instance, Traum (1997) and Miller (1997) consider initiative as what a participant does when it is his dialogue turn. A dialogue participant can either pursue personal goals, in which case s/he holds the initiative, or s/he may react to what another participant has said or done, in which case s/he does not hold the initiative. This is similar to the view put forward in

this paper that the initiative taker is the one pursuing his/her own ideas on how best to solve the problem, while the initiative followers are simply reacting to the initiative taker. Thus, initiative is characterized by self-starting nature, proactive approach, and by being persistent in certain activity to overcome difficulties that arise in pursuit of achieving a predetermined goal.

Inferring from the above definitions, Green Product Initiatives (GPIs) can be described as the process of developing new eco-conserving ideas or creativities for production of goods and services in order to sustain environmental resources by using environmentally friendly materials. Green product initiatives include new ideas, concepts, processes, designs and decisions that make a commitment to green principles in economic activity possible. Hence, green product initiatives open windows for new business opportunities and profits for contemporary entrepreneurs and investors in many sectors (Hamdouch and Depret, 2012). This is evidently true with the consumer's increasing demand for and interest in green products in the contemporary world (Chung and Wee, 2008). In his study, Krause (1993) established that consumers were becoming more concerned about their everyday conduct and the impact on the environment. The consequence of this is that some consumers converted their environmental anxiety into actively purchasing green products (Martin and Simintiras, 1995). In regard to the green consumption rate, the studies examined indicated that:

- a. Thirty-four percent of consumers in most industrialized countries claimed to buy more green products (Boston Consulting Group inquiry carried out in Europe, Canada, the USA, Japan, and China in January 2009);
- b. Thirty percent of the American population leads a lifestyle that is healthy and that favours environmental sustainability (Canadian magazine, 2008);
- c. It is projected that the expenditures related to products and services perceived as being environmentally respectful will double in 2030 and will reach US\$800 billion in the United States (Landor Associates Penn, Schoen & Berland Associates, and Cohn and Wolfe, 2007 study on green brands).

Furthermore, this phenomenon is currently not even controlled by the global economic recession because:

- a. Eighty-four percent of buyers who believe that North America is going through a long-term recession mentioned that their organization would continue to purchase green products in the next 3 to 5 years (Ecomarkets 2009 Report);
- b. The vast majority of American green consumers has not abandoned green products but switched to less expensive ones (Grail Research inquiry, Monitor Group, The Green Revolution, 2009).

All the evidence provided here is to buttress the fact that green product initiatives have enormous benefits for entrepreneurs as many consumers prefer to consume products with environmentally friendly materials, processes and values. These benefits help to achieve self-initiative, creativity, decision making and risk-taking among present entrepreneurs. This fact can be inferred from the data presented above and from the studies conducted in developed and industrialized countries in Europe, the United States, Canada, China, Japan, where scholars have reported increasing consumer demand for green products. The case was also the same in some developing countries like Malaysia, Taiwan, India and Cameroon just to mention a few. However, data showing consumers' preference for green products in Nigeria are still in the making or yet to be published.

9. Sustainable Development

Sustainable Development (SD) has been the most dominant focus of the global community since 1992, when the United Nations Conference on Environment and Development was held in Rio, Brazil. For many economies, development means increased economic growth (which has often been erroneously equated with progress), measured in terms of Gross Domestic Product (GDP). This is what Dowarkasing (2013) termed a "conventional" and "simplistic" view of development. However, it has been confirmed that development goes beyond the lines of economic indices or what poor nations should do to become richer, or beyond simply asking for assistance from developed countries, to a focus on the

interactions between the environment, social and economic development to make people's idea and vision of a better life a reality (Solaja, Omobowale and Alliyu, 2015). The process of achieving a better life for the populace in a sustainable manner transcends into desirable socio-ecological development without resulting in resource imparity or inequality between the present and future generations.

Trekking further on this route, scholars such as Brundtland (1987), Stoddart (2011) and Akanle (2014) defined Sustainable Development (SD) as a concept, goal and movement towards building the capacity of the current generation to meet its needs and develop without jeopardizing the opportunity of the future generations to meet theirs and develop. Thus, sustainable development is a process of change in which the social and ecological resources consumed are not exhausted to the extent that they cannot be renewed, with the view that the creation of wealth within the community must consider the wellbeing of both the humans in the community and the natural environment in which they live (Prucnal-Ogunsote, Okwoli and Ude, 2010). In other words, sustainable development is a kind of developmental approach that promotes intergenerational equity, accessibility, compatibility and quality control of the natural, social and economic environments.

Corroborating the view above, Botanic Garden Conservation International (1999) affirmed that achieving sustainable development means adopting and implementing policies concerning issues such as recycling, energy efficiency, conservation and rehabilitation of damaged landscapes for the wealthy nations. This is because the essence of the environment in the process of achieving sustainable development cannot be underrated. This fact makes proponents of sustainable development affirm that without a productive environment to provide a resource foundation for development, it would be difficult or impossible to envision attaining sustainable development (Kate, Parris and Leiserowitz 2005; Morelli, 2011). This, therefore, makes it necessary to develop proactive measures, regulations and practices that can save the environment from further degradation in order to have a just and caring environment for sustainable development.

10. Theoretical Elucidation

Oftentimes, theoretical attempts at interpreting the role of entrepreneurship in the development process tend to rely more on Frank Knight's Risk Bearing Theory (Knight, 1885–1972), Alfred Marshall's Theory of Entrepreneurship (Marshall, 1890), Schumpeter's Theory of Entrepreneurship (Schumpeter, 1911) and Max Weber's ubiquitous Sociological Theory of Entrepreneurship (Weber, 1864–1920). For the present purpose, this paper will adopt Schumpeter's Theory of Entrepreneurship and the Ecological Modernization Theory as a development framework to underline the role of ecopreneurship and green product initiatives in mitigating the challenges of environmental degradation, particularly those caused by economic activities in Nigeria.

11. Schumpeter's Theory of Entrepreneurship

The Schumpeterian theory affords the theoretical foundation for ecopreneurship. According to Schumpeter (1942), entrepreneurs are innovators and as society's needs change the entrepreneur provides the innovation or "creative destruction" that gives society a new way of addressing problems. He maintained that "environmental problems are inherently calls for innovation, as most of them are caused by the out-dated applications of old, polluting and inefficient technology" (Schumpeter 1942, p. 9). Given that the current solutions to our environmental problems are inadequate for sustainability, there is a need for entrepreneurial action to develop something new, whether it is a production method, technological development, product/service distribution system, or even a new organizational form. (Tillery and Young, 2009; Lennox and York, 2011).

12. Ecological Modernization Theory

Ecological Modernization Theory also provides the rationale for ecopreneurship (Hajer, 1995; Mol, 1995). According to the theory, it is possible to promote economic growth by giving higher priority to the environment. It is no longer necessary to trade off economic growth for environmental quality (Tillery and Young, 2009).

The capitalist system is seen as having the capacity to develop sustainable solutions to environmental problems; that capitalist drive for innovation can be harnessed to produce environmental improvements (Beveridge and Guy, 2005).

According to the ecological modernization theorists, the environmental problems facing the world today act as a driving force for future industrial activity and economic development (Murphy, 2000; Tillery and Young, 2009). The theory calls for the progressive modernization of the institutions of modern society. And as Joseph Huber (Mol, 1995), the father of Ecological Modernization Theory, sees it, entrepreneurs are the central agents of change in that process of transformation to avoid an ecological crisis (Gibbs, 2009; Tillery and Young, 2009). Entrepreneurial action, therefore, is the best solution to our environmental problems because the new generation of ecopreneurs is seeking to combine environmental awareness and conventional entrepreneurial activity to achieve sustainable development (Anderson, 1998). Ecopreneurs have the potential to be a major force in the overall transition towards a more sustainable business paradigm (Schaper, 2002).

13. Methodology

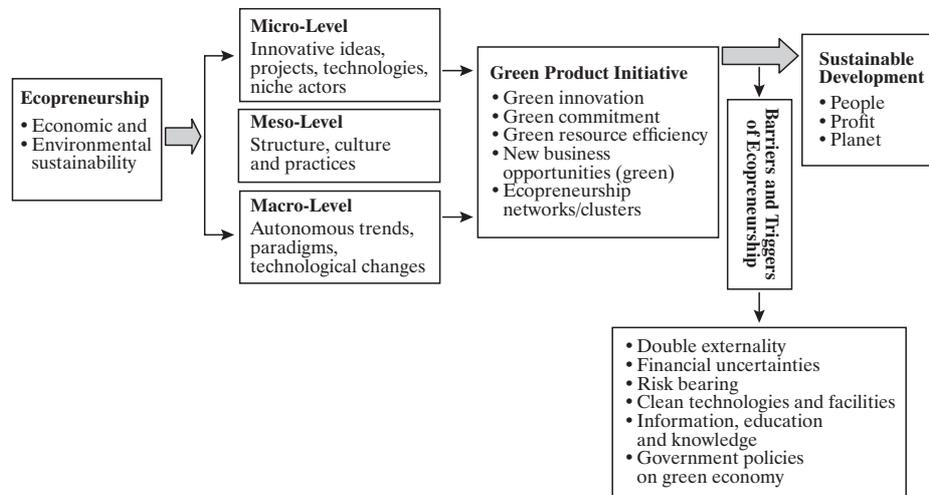
Studies on ecopreneurship are often carried out through the use of case studies (Kearins and Collins, 2012; Kirkwood and Walton, 2010; Rodgers, 2010; Kearins, Collins and Tregidga, 2010; Dixon and Clifford, 2007; Schaltegger, 2002; Pastakia, 1998). Case studies, according to Yin (1984), are very useful in answering explanatory questions such as “how” and “why” and “where” over time. Thus, the explanatory research design was adopted in this paper. The explanatory design was adopted because the paper aimed to put together different ideas or perspectives relating to the subject under study in a bid to understand and explain “how” and “why” and “where” ecopreneurship translates to sustainable development (Carter and Little, 2007). However, some authors refer to the explanatory design as being feeble or challenging to reach appropriate conclusions on the basis that there is a wide range of factors or variables responsible for any social occurrence (Chen, Shek

and Bu, 2011). However, in this paper efforts are geared toward attending to these limitations by relying on literature that captures every aspect of the subject matter. The literature utilized in this paper comprises academic articles, journals, research working papers, sustainability reports collected from reputable sources. The following databases: ebscohost, science direct, proquest, freepatentsonline, seanz.org, and the dspace library were employed in sourcing for the relevant literature. In collating the relevant literature, articles that undergo the peer-review process before being published were included while those that do not undergo the peer-review process were excluded. Also, two types of articles were selected for the paper. The first were conceptual papers on green entrepreneurship, green products and sustainable development, which were used to develop the conceptual framework for the paper. The second set of the papers selected discussed dimensions and indicators of ecopreneurship and green product initiative in developing countries and Nigeria inclusive. More so, the paper adopts current information published in literature between 1999 and 2015 as secondary data. Current information on the benefits, challenges, multi-level intersection and prospects of eco-entrepreneurship and green product initiatives within the context of sustainable development were extracted and used in the paper.

14. Multi-Level Perspective of Ecopreneurship and Green Product Initiative: A Conceptual Analysis

The goal of this section is to engage in a conceptual analysis of multi-level perspective of ecopreneurship and green product initiative within the context of sustainable development. Before embarking on these voyages of enquiry, it must be borne in mind that ecopreneurship is a business concept that rests on the use or development of green/eco-innovations in the production of goods and provision of services with a view to turning ecological problems into business opportunities, which translates to sustainable development. In this regard, ecopreneurship ultimately sets out to achieve twofold sustainable development goals that are critical to

Figure 1. Conceptual framework



Source: conceptual framework for ecopreneurship, green practices initiatives and sustainable development based on Loorbach and Wijsman (2013).

human, national and global development. However, in order to fully capture the essence of the section, an illustration is presented below.

The diagram above illustrates the multi-level dimension of ecopreneurship and green product initiative as depicted in the work of Loorbach and Wijsman (2013) and other literature consulted in the course of producing this paper. Contemporary studies on eco-entrepreneurship, which form the basis of the conceptual approach, focus on economic and environmental sustainability (Schaper, 2002; Gibbs, 2009; Tillery and Young, 2009). However, based on the evidence gathered from previous studies, it is clear that ecopreneurship and green product initiatives can occur at multiple levels of developmental processes. These levels are: micro-level, meso-level and macro-level.

At the micro-level, ecopreneurship is promoted or fostered by individuals with the mind set to create and innovate products and services that add value to the process of reducing waste, exploitation of natural/mineral resources and volume of environmental degradation through the application and adoption of eco-friendly innovative ideas, projects, technologies and engagement of niche actors in the process of achieving sustainable development.

Micro-level ecopreneurship involves starting a green business from scratch or bringing into business operations eco-innovations that were not there before. It also encompasses motivation to operate green businesses at the grass-root level or on a small scale with very little amount of resources to commence. A typical example of micro-level ecopreneurship is mining for utility materials such as plastic, paper etc. from public waste for recycling or reuse. Another example is setting up a green restaurant or selling organic coffee and tea at local events or in local areas.

At the meso-level, ecopreneurship comprises a group of individuals, networks or a community of eco-minded business persons who consciously pool resources together to promote the structure, culture and practices of eco-friendly economic activities or green business enterprises on a medium scale. An example is a community supported agriculture program designed to produce healthy food, and then sell memberships (or shares) to consumers who in turn receive a designated allocation of seasonal produce throughout the farming season. In relation to entrepreneurship, meso-level ecopreneurship materializes in the form of networking or clustering of entrepreneurs who operate green business enterprises or are interested in investing in

eco-friendly business ideas. For example, meso-ecopreneurship has networks and clusters of investors who are willing to give loans, prize awards and technical assistance to small and medium enterprises that are innovating in green entrepreneurship to help them grow their businesses (Hamdouch and Depret, 2012).

Furthermore, macro-level ecopreneurship entails the operations and activities of the “Greening Goliaths” or “Green Capitalists” (large companies or incumbents) who decide to invest huge amount of resources in eco-entrepreneurship innovations and initiatives on a large scale with the aim of fostering autonomous trends, paradigms, technical changes to accomplish economic and environmental sustainability (Elkington and Burke, 1989). These groups of eco-entrepreneurs engage in mass production and provision of eco-friendly products and services such as production of hybrid cars, clean technologies, renewable power projects, solar energy, etc. In another dimension, the goals of macro-level ecopreneurs in the context of sustainable development also include the desire to foster technological advancement, cultural change, resource efficiency and massive reduction of social vices stemming from increased environmental degradation across regions of the world. Having examined the multi-level nature of ecopreneurship and green product initiatives, it is important to note that there are certain factors that represent obstacles and triggers to the progress of ecopreneurship in the context of sustainable development. These factors are:

- i. **Double externality:** Ecopreneurship contends with several external forces emanating from technological and environmental landscapes (Rennings, 2000). Ecopreneurs are faced with financial uncertainties that usually characterize investment in green business (McEwen, 2013).
- ii. **Financial uncertainties:** Access to funds is extremely difficult for ecopreneurs due to the immaturity of the market, the trouble associated with accurately pricing the relative risk of the investment and the lack of history or track record of success (McEwen, 2013).
- iii. **Risk bearing:** Given the challenges characterizing the current and future environmental issues, ecopreneurs are

faced with enormous and unpredictable business risks. In particular, McEwen (2013) noted that the market in which ecopreneurs operate does not encourage efficient inter-temporal risk avoidance.

- iv. **Clean technologies and facilities:** Ecopreneurship is often faced with the challenge posed by production, commercialization, research and development costs of acquiring green technologies and infrastructural facilities (Grubler, Nakicenovic and Victor, 1999).
- v. **Information, education and knowledge:** Lack of quality information is a major obstacle to ecopreneurship. This is inherently true because eco-innovations involve high-technology (hi-tech) operations possible only when there is reliable information on the nature and extent of the problems, the range of solutions available, costs and ways of reducing them (Banks and Heaton, 1995).
- vi. **Government policies on green economy:** The biggest challenge ecopreneurs or green businesses face is policy insufficiency. Governments at all levels are therefore expected to help to implement policies that will aid purchase of green products in future. (Ambachtsheer, Charest, Ksowski, Mitschele and Nielson, 2007).

15. Ecopreneurship and GPIs: An Agenda for Sustainable Development in Nigeria

In the discussion presented above, it is evident that ecopreneurship and green product initiatives are integral parts of green economy which any nation willing to transform the entrepreneurial skills of its people, infrastructure, economy and environment with far reaching benefits must key into. This is due to the fact that ecopreneurship and green product initiatives are the drivers and the prime movers of green economy. To buttress the foregoing, Nigeria has been regarded as one of the countries with the opportunity to benefit from about \$200 billion of global capital flows from carbon trading (Simire, 2011). Similarly, evidence abounds that the Pan Ocean Oil Gas Utilization Project has generated about \$1.8 million worth of carbon credits under the Clean Development Mechanism (Simire, 2011). Apart from that, a sum of \$4 million has been approved for Nigeria by

the United Nations to kick-start its National Programme for Reducing Emissions from Deforestation and Forest Degradation (Simire, 2011). Thus, it is paramount for Nigeria as a nation to join other players in the field of green economy by encouraging ecopreneurship and green product initiatives.

Regardless of the numerous resources (material and human) existing in Nigeria, it is still sensible for the government to promote ecopreneurship and green product initiatives in order to meet the goals of sustainable development. The immense contribution of ecopreneurship and green product initiatives to the promotion of sustainable development in the developed world cannot be underestimated (some of these benefits were discussed earlier), hence the need for the Nigerian government to recognize that investing in or promoting eco-friendly business is absolutely essential and lucrative in the current knowledge economy. This emphasizes the fact that by encouraging ecopreneurship and green product initiatives among indigenous entrepreneurs, new business opportunities will be discovered and more locally-designed clean technologies will be developed and acquired for production activities and business operations in Nigeria. For instance, some Nigerian ecopreneurs in conjunction with the Federal Government of Nigeria have engaged in production and distribution of clean cook stoves and wonder bags for women in Nigerian rural areas in order to eradicate the negative impact of traditional cooking methods on people's wellbeing and the environment (Usman, 2014).

Consequently, it is obvious that Nigerian ecopreneurs are creating new business opportunities, and when new business opportunities are created and efforts are made by indigenous entrepreneurs to incubate ideas and assemble the resources needed to bring the idea to commercial reality, there will be remarkable progress in job creation, infrastructure, gross domestic product (GDP) and gross national product (GNP), which in turn will lead to development and an increase in the value of the naira. That is not all – utilization of clean technologies in production activities and business operations will drastically reduce the harsh environmental challenges (such as pollution, land degradation and

loss of biodiversity just to mention a few) that most citizens are now facing. When environmental challenges are lessened, the populace will enjoy a high quality of health. A nation whose citizens are healthy is a wealthy nation. This presupposes that healthy citizens will continue to carry out productive activities that will translate favourably to remarkable success in social, economic and environmental settings of the country.

Furthermore, ample evidence has been provided in this paper to show that venturing into or investing in eco-innovations and green product initiatives offers enormous benefits and rewards. One of the benefits associated with ecopreneurship and green product initiatives is the opportunity to have access to the market. It is really essential for a nation that wants to develop through entrepreneurship to have a market for its products and services. A comical example to cite in this regard is China, which has been a momentous development player in Africa. China-Africa trade between 2000 and 2005 rose from \$10 billion to \$25 billion (Alden, 2005) and reached US \$ 198.49 billion by 2012 (The People's Republic of China, 2013). At present, China has outplayed the United States as Africa's largest trading partner. China was able to achieve this remarkable success in recent times because it had access to the market. Favourable access to the market will fast track the development of infrastructure (such as roads, hospitals, water and energy) because many investors will come to partner with local entrepreneurs who will lead to improvement in national income and development.

Provision of efficient infrastructural facilities will serve as a critical factor in curbing criminality and insecurity in Nigeria. This is because when there is constant or uninterrupted supply of energy in Nigeria, there will be improvement in security services for the people and their property due to the reduction in crime rate. Another benefit that can be secured through ecopreneurship and green product initiatives is access to finance. It is true that access to capital is a major constraint on entrepreneurship development in Nigeria. Yet, this obstacle can be removed if ecopreneurship and green product initiatives are encouraged in Nigeria. There are hundreds of thousands of interested

investors across the globe who are willing to finance or give funds to ecopreneurs and green business initiators in the green economy. Availability of finance to engage in ecopreneurial activities or actions will enhance economic growth vis-à-vis environmental sustainability in Nigeria. It will also encourage a productive mindset among unemployed youths to engage themselves in green business activities and initiatives that will offer them more income, opportunities and prosperity in the context of achieving sustainable development in Nigeria. As such, ecopreneurship and green product initiatives will be a critical factor in curbing youth unemployment (currently standing at above 45%) and sustaining youth strong interest in innovative business solutions or sustainability considerations at multi-level sustainable development.

16. Conclusion and Recommendations

From the above discussion arises a glaring conclusion that ecopreneurship and green product initiatives can be complex issues difficult to fully understand. They appear in different forms and sizes, flourish under different conditions, and can often emerge under the most unlikely and least predictable circumstances within the context of sustainable development. Ecopreneurship is still young and is suffering from lack of sufficient empirical studies in recent times. This is a gap that needs to be filled by contemporary researchers and academicians. In part, this paper has contributed to the field by revealing how environmentally attentive entrepreneurs and their innovative ideas can significantly mitigate environmental hitches facing contemporary world with a view to attaining sustainable development.

Considering the harsh socio-economic challenges facing Nigerian citizens in recent times, this paper proposes ecopreneurship and green product initiatives as an agenda for sustainable development in Nigeria. Ecopreneurship is a monumental responsibility for Nigerian entrepreneurs because it encourages “blended value approach” in which social and environmental as well as financial objectives are combined. This is the right time to promote ecopreneurship development in Nigeria because the choice is clear and the technology is there.

Only political will is lacking. Therefore, this paper advocates positive political will towards ecopreneurship and green product initiatives in Nigeria. Thanks to it, successive ecopreneurship can be enabled to thrive and be cultivated in Nigeria.

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