

# Analysis of Factors Influencing Green Entrepreneurship in South Africa



**Chipo Mukonza**

UNU-INRA WORKING PAPER NO. 20



UNITED NATIONS  
UNIVERSITY

**UNU-INRA**

Institute for Natural Resources in Africa



**IDRC | CRDI**

International Development Research Centre

Centre de recherches pour le développement international

# **Analysis of Factors Influencing Green Entrepreneurship in South Africa**

**By**

**Chipo Mukonza**

*This work was carried out with the aid of a grant from the International  
Development Research Centre, Ottawa, Canada.*



**UNITED NATIONS  
UNIVERSITY**

**UNU-INRA**

Institute for Natural Resources in Africa



**IDRC | CRDI**

International Development Research Centre

Centre de recherches pour le développement international

### **About UNU-INRA**

The United Nations University Institute for Natural Resources in Africa (UNU-INRA) is the second Research and Training Centre / Programme established by the UN University. The mandate of the Institute is to promote the sustainable management of Africa's natural resources through research, capacity development, policy advice, knowledge sharing and transfer. The Institute is headquartered in Accra, Ghana, and also has five Operating Units (OUs) in Cameroon, Ivory Coast, Namibia, Senegal and Zambia.

### **About UNU-INRA Home-Based Scholar Programme**

The UNU-INRA Home-Based Scholars Programme selects researchers on a competitive basis to carry out policy-relevant research from their home institutions to inform natural resources management in Africa. This working paper is an output of UNU-INRA's project entitled "[\*Unleashing the Potential of African Rural Economies through Green Growth\*](#)", funded by the International Development Research Centre (IDRC).

### **About the Author**

Chipo Mukonza is a Post-Doctoral Fellow at Exxaro Business and Climate Change, University of South Africa (UNISA). She produced this paper as a Home-Based Scholar of UNU-INRA.

### **Author's Contact**

Email: [chiponyam@gmail.com](mailto:chiponyam@gmail.com) ; [Chiponyam2@yahoo.com](mailto:Chiponyam2@yahoo.com)

### **UNU-INRA Contact**

United Nations University Institute for Natural Resources in Africa (UNU-INRA)  
2nd Floor, International House, University of Ghana Campus, Accra, Ghana  
Private Mail Bag, KIA, Accra, Ghana. **Tel:** +233 302 213 850 Ext. 6318.

**Email:** [inra@unu.edu](mailto:inra@unu.edu) **Website:** [www.inra.unu.edu](http://www.inra.unu.edu)  
[Facebook](#), [Twitter](#), and [LinkedIn](#)

© UNU-INRA, 2016

ISBN: 9789988633189

**Cover Design:** Praise Nutakor, UNU-INRA

**Photo:** Food Ethics Council

**Published by:** UNU-INRA, Accra, Ghana

### **Disclaimer:**

The views and opinions expressed in this publication are that of the author and do not necessarily reflect the official policy or position of the United Nations University Institute for Natural Resources in Africa (UNU-INRA).

## **Abstract**

The South African government recognizes the importance and the contribution played by entrepreneurs in the country. With the advent of green economy, wide opportunities have been opened up for green entrepreneurs in the country. Consequently, policies, strategies and institutions have been established to support green entrepreneurship activities in the country. The paper seeks to examine and investigate factors affecting green entrepreneurship activities in South Africa. It employed a mixed method approach; the study interviewed 103 green entrepreneurs, examining factors that influence green entrepreneurship activities. Also in-depth interviews, key informants, observations and comprehensive literature review were carried out for triangulation purposes. The study established that the adoption of environmentally responsible business practices has opened up an additional range of opportunities for entrepreneurs. Enterprising individuals and organizations have established numerous niches that include the development of new products, new practices of doing business, recycling, and energy efficiency among other things. However, there are also some factors that are hindering the robust development of green entrepreneurship in the country. Factors such as access to funding, knowledge, competence, information access and government and private sector support are critical to sustaining green entrepreneurship. The findings are limited by the study's exploratory, quantitative nature and small sample. The paper recommends that for green entrepreneurship to be a driving force in the overall transition to a green economy, legislation, government regulation and industry support agencies, all have a role in shaping them.

**Key words:** green entrepreneurship, activities, South Africa

## **Acknowledgments**

This study was made possible through a research grant from the United Nations University Institute of Natural Resource in Africa (UNU-INRA), Ghana. I would like to thank my mentor, Prof. G. Nhamo (Exxaro Chair in Business and Climate Change at the Institute for Corporate Citizenship, University of South Africa), for providing constructive and profound feedback during all phases of my research project. I would also like to express my sincere appreciation to the South African SEED Winners, who responded to my questionnaire and all other entrepreneurs that were contacted and who responded. I am also grateful for all the assistance and advice that I received from Ms. Mapula Tshangela (DEA, South Africa), Rest Kanju, and Amélie Heuer SEED (UNEP). In addition, I am also grateful to Lisa van Eck (Regional Chapter Coordinator, Aspen Network of Development Entrepreneurs (ANDE), South Africa, for introducing me to various entrepreneurs they have been working with.

## Table of Contents

1.0 Introduction.....	1
1.2 Problems statement.....	2
1.3 Research objectives.....	2
1.4 Significance of the study.....	3
2.0 Literature review.....	4
2.1 Benefits of green entrepreneurship.....	5
2.2 Defining what constitutes a green entrepreneur.....	5
2.3 Challenges and issues associated with green entrepreneurship activities.....	6
2.4 Theoretical considerations.....	7
3.0 Research Methodology.....	9
4.0 Statements of Results Findings and Discussion.....	11
4.1 Factors affecting green entrepreneurship activities in South Africa.....	21
4.2 Emergent themes/constructs.....	24
4.2.1 How green is green?.....	24
4.2.2 Green entrepreneurship/social entrepreneurship.....	24
5.0 Conclusion and Policy Recommendation.....	26
6.0 References.....	27

## List of Tables

Table 1. Reliability Statistics .....	11
Table 2. Determining the extent to which green entrepreneurship activities are taking place .....	17
Table 3. Mean ranking of factors influencing green entrepreneurship activities in South Africa N= (103) .....	21

## List of Figures

Figure 1. Determining gender of the green entrepreneurs N=103 .....	11
Figure 2. Determining age of the green entrepreneurs N=103.....	12
Figure 3. Determining years in business .....	12
Figure 4. Determining Business field occupations .....	14
Figure 5. Determining participation in green entrepreneurship education.....	16
Figure 6. Perceptions about public policies support for green initiatives .....	18
Figure 7. Determining access to information on Green entrepreneurship activities	19
Figure 8. Determining the extent of taking advantage of the opportunities.....	20
Figure 9. Limitations of Green Entrepreneurship activities in South Africa .....	23

## 1.0 Introduction

Entrepreneurship has been touted as a catalyst for economic development in Africa. In this regard, governments have put in place supporting measures in the form of loan guarantees, tax incentives and research credit designed to boost innovation, or systems to encourage self-employment (Organisation for Economic Development-OECD, 2011). The advent of green economy/growth has even widened entrepreneurship activities. While global inequality and rising unemployment pose major challenges to policy makers, green entrepreneurship is seen as the driving force for the establishment of a holistic and sustainable economic, environmental and social system. The point of departure of the study is the realisation that economic development is dependent on dynamic capabilities of a society to generate goods and services that, at prevailing factor prices, are of higher quality and lower cost than those that were previously available.

Accordingly, the International Labor Organization –ILO (2015) states that “green entrepreneurs provide the hotbed for starting and sustaining a green economy by providing green products and services, introducing greener production techniques, boosting demand for green products and services, and creating green jobs”. The OECD (2010) posits that Small and Medium-sized (SMEs) enterprises are essential for green growth as key drivers of entrepreneurship and key players in emerging green industries. Green entrepreneurship is an increasingly relevant phenomenon from a development perspective, but it is still largely under-researched (Farinelli, Bottini, Akkoyunlu and Aerni, 2011). However, much of the burgeoning literature on green entrepreneurship lacks substantial empirical analysis. Farinelli et al. (2013), state that a green economy is a bottom-up approach. That is, it needs to be driven by entrepreneurs, who respond to policy incentives through innovation in management and technology.

South Africa in recent years has promulgated policies and strategies in a bid to transit to a green economy. Consequently, the country has witnessed numerous green business initiatives emerging in the country. Bibri (2013) aptly pointed out that green entrepreneurship has been socially constructed as having a catalytic role in reshaping the socio-technical landscape of the economy and engendering cultural changes and institutional developments associated with ecological modernization. The maintenance of an ecological balance has been addressed by the King 111 Report, which emphasizes sustainability in the outcome, social and environmental spheres (Carroll and Buchholtz, 2000). Against this background, the study seeks to investigate



and critically analyse the factors affecting green entrepreneurship activities in South Africa. The study is structured as follows: the next section provides the problem statement, research objectives and significance of the study. This is followed by section two, with a discussion on definitions, conceptual and theoretical issues, and followed by section three, which examines the methodology, while section four discusses and analyzes the results and, lastly, section five proffers recommendations and draws conclusion for the study.

## **1.2 Problems statement**

Policy instruments that have been crafted to facilitate green growth are aimed at identifying the technological innovations capable of mitigating the human impact on the environment and addressing global environmental issues, such as climate change, land degradation and loss of biodiversity. It is, therefore, imperative to enhance green entrepreneurship. However, green entrepreneurship in South Africa is still very unsatisfactory and faces challenges, such as access to finance and lack of a strong entrepreneurial culture (Booyens, 2011; Ayyagari et al., 2003). Identifying the factors affecting/influencing green entrepreneurship activities will therefore inform policy in order to boost green entrepreneurship in South Africa.

Chiloane-Tsoka, Mabiza-ma-Mabiza and Mbohwa (2014) are of the view that green economy by nature requires high level of intelligence and skill. This poses challenges for business entrepreneurs to take advantage of opportunities created by a green economy without having to leave a trail of heavy carbon footprints in their businesses. Lekhanya (2014) discovered that in as much as South African SMEs are aware of green marketing and its managerial implications, the South African Environmental Act and Consumer Protection Act are additional factors that influence their business operations. Against these revelations, the present study sought to do a comprehensive analysis of factors influencing green entrepreneurship activities in the country.

## **1.3 Research objectives**

The major objectives of this study are to:

- Identify some of the challenges, which green entrepreneurs face in South Africa.
- Determine factors influencing green entrepreneurship activities in South Africa.

- Provide recommendations to policy makers on what can be done to make green entrepreneurship activities flourish.

#### **1.4 Significance of the study**

This is a relevant and well-timed study, as it examines green entrepreneurship activities and transition to a green economy in South Africa. For a long time, SMEs have been considered to be the vehicle for economic development, helping in alleviating unemployment (Endeavor South Africa, 2014). The study adds to the growing literature on entrepreneurship, with a special emphasis on activities that are environmentally and economically sustainable. South Africa has chosen green economy as a sustainable path to development that addresses environmental, economic and social equity. Though the concept of green economy is fairly new, green entrepreneurship activities are being promoted as part of green growth strategies. Examining the manner in which these activities are being implemented and the challenges they pose are fundamental. The study sought to provide lessons that can be learnt from other countries, especially in Africa. The study also aims to make an original, empirically-grounded and theoretically-sound contribution to examining the experiences, reflections and perspectives of green entrepreneurs in the country.

## 2.0 Literature review

The aftermath of global financial and economic crisis in 2008 compelled many countries to realize the central role of entrepreneurship in boosting economic activities (OECD, 2011). Since then 'green economy' has become a buzz word, and it has ushered in new opportunities for small business and entrepreneurs. A green economy has been defined as one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities (UNEP, 2011). With the advent of a green economy, industries and not-for-profit organisations are seen as having shifted from a position of denial about the impacts of their business activities on the environment to one, where they have the potential to mitigate the detrimental effects. This perspective is essentially one of ecological modernization, at the heart of which is a belief in technology, innovation and progress to solve environmental problems (Ndubisi and Nair, 2009). Thus, a green economy, with a combination of new technologies and changing institutions, is increasingly becoming a source of policy responses and initiatives in the developed world (Paris and Foxon, 2009). Nonetheless, there is paucity of literature when it comes to defining green entrepreneurship.

Therefore, it has become difficult to separate green and non-green entrepreneurship activities. Several terms have been adopted to mean green entrepreneurship. The OECD (2011) states that green entrepreneurship could be defined regarding the technology used for production in any sector of the economy, or regarding the sectors that firms are active in. Nikolaou et al. (2011) opine that scholars have not yet agreed on the meanings and terms of the concept of green entrepreneurship. Thus, the literature that is available offers a range of terms with different meanings for the concepts of green entrepreneurship, such as green, environmental, ecological, sustainable entrepreneurship, eco-entrepreneurship and eco-premiership (Nikolaou et al., 2011). There are schools of thought that prefer to use the term social entrepreneurship to refer to green entrepreneurship, as it is said to be all encompassing (Abu-Saifan, 2012; Groot and Dankbaar, 2014). Social entrepreneurship is a term that has gained popularity and it also means different things to different people. According to Shepherd and Patzelt (2011), social entrepreneurship is the creation of viable socio-economic structures, relations, institutions, organizations, and practices that yield and sustain social benefits. The Institute for Social Entrepreneurs (2002), on the other hand, defines social entrepreneurship as the art of simultaneously obtaining both a financial and social return on investment.

## **2.1 Benefits of green entrepreneurship**

The benefits of green entrepreneurship include the following:

- Corporate social responsibility
- Environmental respect
- Easy implementation of environmental legislation
- Better insurance terms
- Attainment of green investments
- Acquisition of loans with better terms
- New trade opportunities
- Reduction of operational costs

In this study green entrepreneurship activities are defined as those that recognize environmental issues and whose business ventures are in the environmental market place. Such entrepreneurs pursue real opportunities that show good profit prospects.

## **2.2 Defining what constitutes a green entrepreneur.**

Attempts to profile ‘green’ or environmentally responsible entrepreneurs are relatively under-researched and lack substantial empirical analysis (OECD, 2011). Subsequently, it has been problematic to define a ‘green entrepreneur’. Other stakeholders, such as lobby groups, non-governmental organisations (NGOs), venture capitalists, industry associations and local communities can also influence the context in which green entrepreneurs operate. Mwakamirwa (2013) posits that entrepreneurs are now making changes in their ways of doing business in order to address the society’s new concerns on environmentalism and other ecological problems as they affect their enterprises. The transition to green economies has placed a significant responsibility on green entrepreneurs. The concept of a green economy was popularised around 2003, when the European Commission presented the Green Paper on entrepreneurship in Europe. The paper placed more emphasis on Europe becoming a competitive and dynamic knowledge-based economy. The European Commission proposed that Europe needs to foster entrepreneurial drives more efficiently. A green entrepreneur is defined as an entrepreneur, who provides ecological awareness to the firm. A green entrepreneur has a positive attitude towards environmental protection and restoration. International labour organisation-ILO (2015) defines green entrepreneurs as those who provide the hotbed for starting and sustaining a green economy by providing green products and services, introducing

greener production techniques, boosting demand for green products and services, and creating green jobs. Lacroix and Stamatiou (2007) state that a green entrepreneur engages in such activities as ecotourism, recycling, energy efficiency, sustainable mobility, organic agriculture and renewable energies, among others. ILO (2015) further states that Green entrepreneurship can be defined from two perspectives related to the output (products and services), as well as the process (or production) of an economic activity. Entrepreneurs can enter into an overtly 'green' business sector, providing green and environmentally-friendly products and services (e.g. waste management). Alternately, green entrepreneurs can provide their products or services through an environmentally-friendly process or with the help of clean technologies (e.g. eco-tourism). Numerous terms have been used to describe a green entrepreneur (i.e. ecopreneurship, environmental entrepreneurship, entrepreneurship and sustainable entrepreneurship). The present study will use green entrepreneurs, based on the form in which green entrepreneurship can take place as described by ILO. The study also interviewed non-governmental organisations that are providing green and environmentally products and services.

### **2.3 Challenges and issues associated with green entrepreneurship activities**

The OECD (2010) contends that for green entrepreneurs to fully participate in the transition towards sustainable economic patterns and seize the opportunities arising, it is essential that the main barriers to green growth and eco-innovation be identified. It further states that the willingness and capability of SMEs to adopt sustainable strategies or seize green business opportunities meet with size-related resources constraints, skills deficits and knowledge limitation, not to mention the need for enterprises to survive in the aftermath of a global crisis. Market failure has been suggested as one of the triggers of green entrepreneurship (Nikolaou et al., 2011). This comes from the environmental economics school of thought, which alludes to the fact that market failures are the main factor responsible for contemporary environmental problems and may have positive consequences for entrepreneurial development.

A study was done in Pakistan to identify enabling factors of green entrepreneurship. This was a case study of organic Agriculture produce. A household survey was carried out from the green and potential green entrepreneurs. The results of the study showed the significance of reliable organic markets, price premiums and improved production conditions as key enablers of green entrepreneurship (Pandrani and Ferguson, 2014). In

another study, a SWOT analysis was done to evaluate the prospects of green entrepreneurship development in Greece (Nikolaou, Ierapetritis and Tsagarakis, 2011). The results indicate that institutional, structural, social and economic factors can play a critical role in whether entrepreneurs invest in new business ventures with natural resources. Brand et al. (2007) conducted a study that looked at factors influencing the sustainability of informal SMMEs in South Africa, and suggested a method that can be used to transform them into more formal businesses that are integrated into the formal economy. Herrington, Kew and Kew (2009) also tracked entrepreneurship activities in South Africa. Their study details South African comparative international standing and concluded that, as far as Total Entrepreneurial Activity (TEA) rate is concerned, it is very low and has been dropping, compared to other middle income, efficiency-driven economies.

Research that is available in the public domain tends to focus on the motives of business to adopt environmental management practices on a voluntary basis, the benefits or barriers for new entrepreneurs to invest in the environmental sector, how to measure green entrepreneurship (OECD series) and the development of sustainable entrepreneurs. The present study acknowledges the development of green entrepreneurs in the country, as well as the policies and the institutions that have been put in place. However, most of the green entrepreneurs are not progressing well, or dying in their infancy stage. Therefore, the need to critically examine and investigate the factors influencing green entrepreneurship activities in the country is imperative.

## 2.4 Theoretical considerations

The Dynamic capabilities theory has evolved over the years, with its roots emanating from the resource-based view (Eisenhardt and Martin, 2000; Teece et al., 1997). Dynamic capabilities theory espouses that, for a firm to encompass competitive advantage, it must not be static but have dynamic capabilities; i.e. the capacity of an organisation to purposefully create, extend or modify its resource base (Barney, 2001; Helfat et al., 2007). Teece et al., (1997) defined dynamic capabilities, thus:

*“the capacity to renew competencies so as to achieve congruence with the changing business environment” by “adopting, integrating, and reconfiguring internal and external organizational skills, resources, and functional competencies”.*

The importance of the dynamic capabilities theory is that it builds on the fundamental understanding that a firm needs to have resources for it to grow. Furthermore, it questions how firms first develop firm-specific resource and capability bundles and how they renew their resource and capability configurations in order to respond to shifts in their environment (Teece et al., 1997). Ambrosini et al. (2009) proposed that there are three levels which exist that are related to manager's perceptions of environmental dynamism. The first level consists of the incremental, dynamic capabilities, which is concerned with the continuous improvement of the firm's resource base. At the second level are renewing dynamic capabilities, those that refresh, adapt and augment the resource base. At the third level are dynamic regenerative capacity, which impact, not on the firm's resource base, but on its current set of dynamic capabilities i.e. these transform the way the firm changes its resource base.

The study therefore adopts this definition to decipher green entrepreneurial activities and resources in South Africa . The thinking and notion behind this is that dynamic capabilities of green entrepreneurs will allow the organization to grow, generate profit and achieve competitive advantage under conditions of technological and market change (Teece et al., 1997; Teece, Pisano and Shuen, 1997). Thus, the framework attempts to explain why some organizations succeed and others fail (Arend and Bromiley, 2009). Green entrepreneurship plays a catalytic role in the economic transition to a sustainable economy (Parrish and Foxon, 2009).

### 3.0 Research Methodology

The study employed a mixed method approach. That is both the use of qualitative and quantitative methods. A five-pronged approach was used, and is revealed as follows: comprehensive literature review, administering of questionnaire (pilot and reconnaissance visits included), in-depth interview, observation and focus group discussions with case study respondent and analysis of data and write-up. A questionnaire was administered, consisting of range-based questions, scale questions, YES/NO and open-ended questions, which would make it easy to use statistical techniques.

The researcher got permission to use some databases that already exist mainly from SEED (United Nations Environmental Programme-UNEP), Association Network Development Entrepreneurs (ANDE) and the links that were provided by an official from the Department of Environmental Affairs (DEA). The SEED (UNEP) has 28 South African recipients, who have so far received the SEED AWARD from 2005-2015. A questionnaire was sent to all of them initially by email and then follow-ups were done telephonically and this proved to be more efficient and yielded positive responses, as most respondents preferred to talk over the phone. The majority of the respondents indicated that they did not have time to fill-in the questionnaire.

At the end, 25 out of the 28 individuals responded to the questionnaire. Snowball sampling, using knowledgeable people from the department of Environmental Affairs and ANDE was then used to administer to the other entrepreneurs. In addition, to chain referral sampling, the researcher had the opportunity to attend conferences and workshops, where some of the green entrepreneurs were showcasing their businesses. For instance, UNISA, under the guidance of the Exxaro Chair in Business and Climate change, hosted the First International Conference on Innovation for Sustainability under Climate Change and Green Economy/Growth (May 2015), where some of the green entrepreneurs showcased their work. In August 2015, the researcher also had an opportunity to attend the Women in Environment Conference, where some green entrepreneurs across the country showcased their business.

Thus, the researcher had an opportunity to interview, observe and note some of the emerging technologies, products that are being developed by emerging green entrepreneurs. Finally, between May 2015 and December 2015, the researcher administered 103 questionnaires to green entrepreneurs fully in business and those that have partially adopted the concept. It is important to note that some green entrepreneurs that were SEED Award winners were



also working with ANDE or with the DEA and these were not interviewed twice.

Data collected was captured using SPSS Version 22 cleaned and analyzed and the outputs were presented in form of frequency tables. Mean and standard deviation from Likert scale statements were used to interpret the data. Thematic analysis was used to analyze the data. In-depth interviews, observations and key informants helped to acquire a deeper understanding of the entrepreneurship environment from the aspect of green entrepreneurs and understand motives, challenges and obstacles they face in developing their businesses. The study draws on some of the vantage points presented by the dynamic capability theories and sustainability transition. The paper is epistemologically founded in interpretivism. Indeed, Interpretivism, in contrast to positivism, poses multiple realities that validate the internal research design through the subjectivism that will permeate the analytical assessment.

#### 4.0 Statements of Results Findings and Discussion

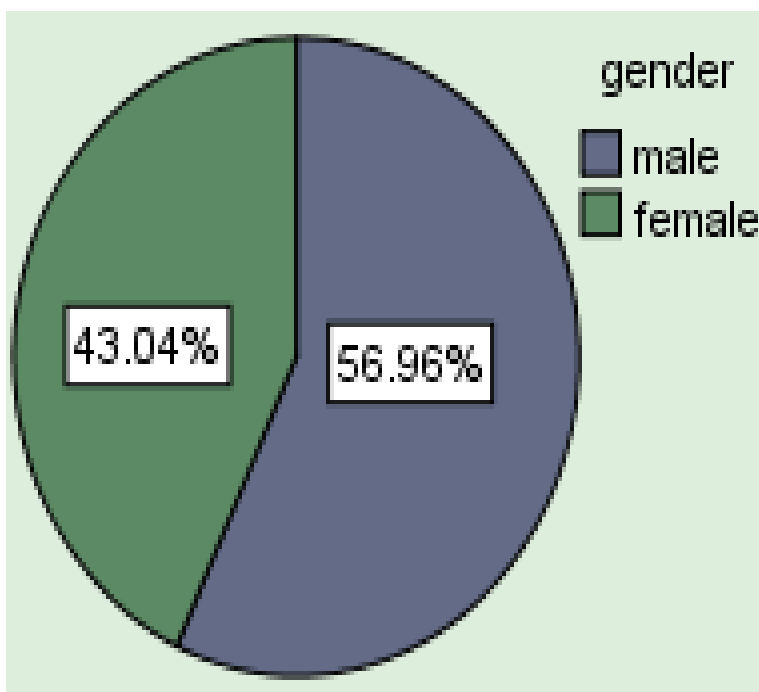
The aim of the study was to investigate and critically analyse the factors affecting green entrepreneurship activities in South Africa. A Cronbach test was done to determine the reliability of data and the following results were established.

**Table 1. Reliability Statistics**

Cronbach is Alpha	N of Items
.879	4

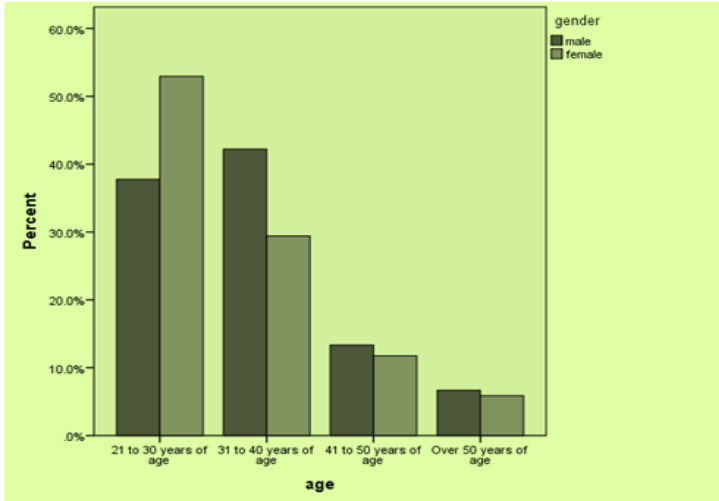
*Source: Survey Data, 2015*

The results indicate that the data is reliable, as it is above 50%. Thus, if the study can be replicated somewhere, there are almost 80% chances that it will yield the same results. One of the aims of the study was to establish the gender of the green entrepreneurs interviewed and the following results were established. Figure 1 indicates gender proportions of the respondents.



**Figure 1. Determining gender of the green entrepreneurs N=103**

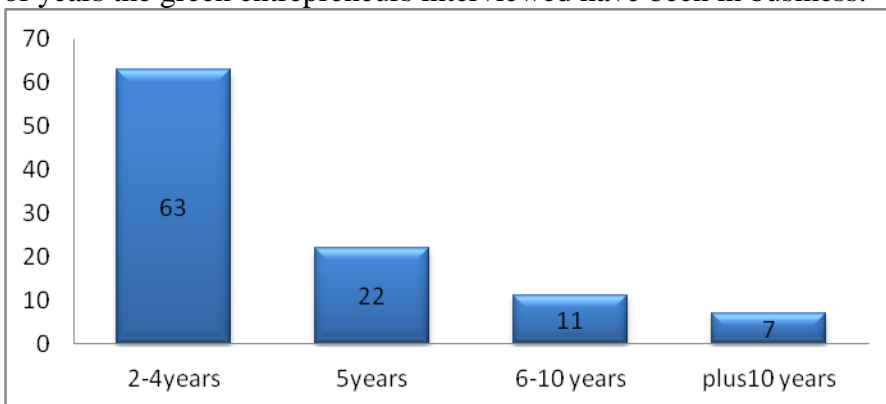
*Source: Survey Data (2015)*



**Figure 2. Determining age of the green entrepreneurs N=103**

*Source: Survey Data (2015)*

43% of the people interviewed were female, and 57% were male. The majority of the respondents were between 21-40 years (Figure 2). This might be an indication that the young ones are the one who are willing and quick to adapt to changes in the environment. The older ones take time to adjust and to make decisions. In trying to understand the factors affecting green entrepreneurship activities in South Africa, it is important to understand the age and the gender of the green entrepreneurs and the potential green entrepreneurs. The assumption is that gender and age play a critical role in determining green entrepreneurship activities. Figure 3 reveals the number of years the green entrepreneurs interviewed have been in business.



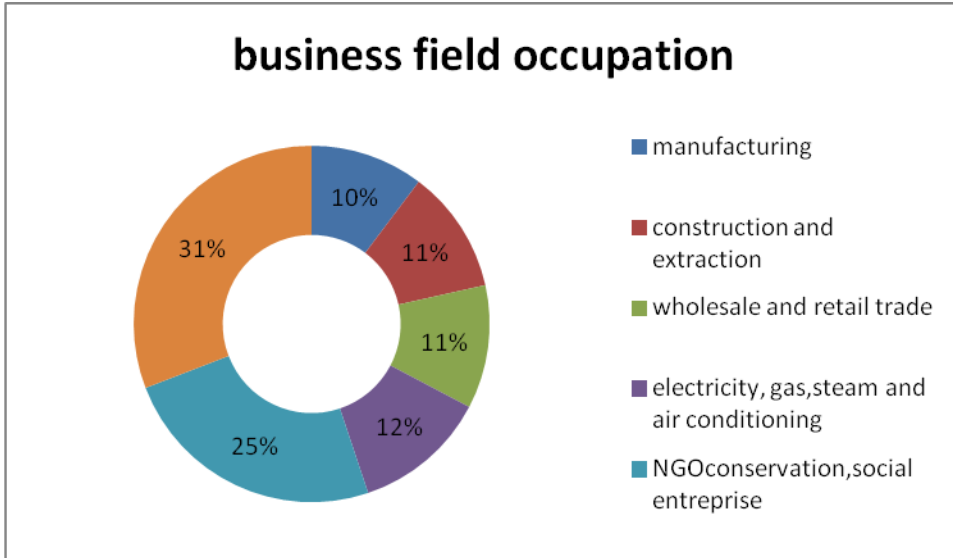
**Figure 3. Determining years in business**

*Source: Survey data (2015)*

The majority of the respondents were still at infancy stage, between 2-4 years. There was one exception, where one of the respondents indicated that she had been in the business for the past twenty-five years, only that then it was not called green entrepreneurship then, but rather acknowledged as sustainable practices. The reason most of the green activities were still in nascent stage may be attributed to the lack of policies and strategies, as well as start-up funding. National Small Business Chamber (NSBC) is dedicated to the success of small business in South Africa.

A follow-up question was included in the questionnaire to distinguish those that have adopted green entrepreneurship activities from inception and those that adopted green entrepreneurship activities at a later stage in business. About 73 of the respondents revealed that they had started during inception, courtesy of funding opportunities made available in the last four years. Whereas 21 respondents said they had adopted it along the way. About 9 of the respondents said they were partially green, have other activities or programmes in their organizations, which they were running. An example was one Non-governmental organization, which used to deal with peace and conflict issues.

The result corroborates findings from an SME Survey 2015, where they interviewed about 1, 400 SMEs and about 86% of them agreed on the importance of sustainability (SME Survey, 2015). The analysis of the results proves that more and more SMEs in the country were becoming environmentally conscious, or moving from sustainable practices to sustainable entrepreneurship. Figure 4 shows the type of activities the entrepreneurs are involved in.



**Figure 4. Determining Business field occupations**

*Source: Survey Data (2015)*

When the questionnaire was being designed, the Department of Trade and Industries classification was followed. Fetola<sup>1</sup> organization, which worked with SMEs in South Africa, classified that business operating in the green economy included those that employed clean technology (reducing emissions, pollution and improved material efficiency), provided resource efficiency solutions or brought about an environmental benefit. Examples of such businesses include:

- Recycling and/or waste,
- Management services,
- Clean energy generation,
- Energy efficiency solutions,
- Water management solutions,
- Sustainable agribusiness,
- Manufacturing businesses,
- Employing improved or cleaner technology,
- Green building initiatives,
- Green transport solutions.

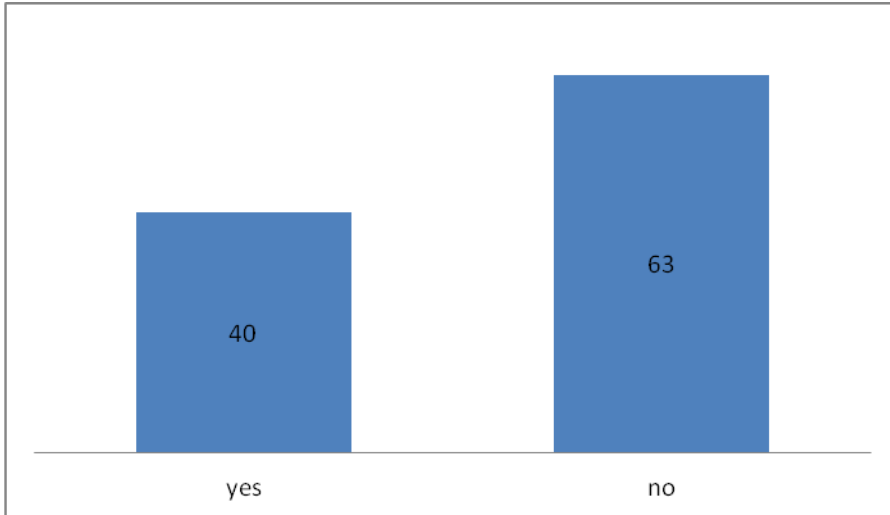
---

<sup>1</sup>Fetola are enterprise and supplier development specialists with 30 years' experience in stimulating entrepreneurial success. <http://www.fetola.co.za/>

Respondents were asked to indicate area clusters of their business and what they do in their business. The results revealed that 31% of the respondents were into waste and sanitation, while 25% were non-governmental organizations or cooperative trusts that were into conservation, social enterprises, organic farming, and environmental awareness/advocacy.

According to the definition provided earlier by ILO (2015), there are basically two firms, which can be taken by green entrepreneurs. i.e. entrepreneurs can enter into an overtly 'green' business sector, providing green and environmentally-friendly products and services (e.g. waste management). Alternately, green entrepreneurs can provide their products or services through an environmentally-friendly process, or with the help of clean technologies (e.g. eco-tourism). Thornton (1999) defines entrepreneurship as the creation of new organizations, which implies a certain degree of innovation and size. This creation occurs as a context-dependent, social and economic process. On green entrepreneurship, involving the introduction of new technologies; as well as new products aimed at greening the economy, the study also reveals that there were some entrepreneurs who had ventured into stoves, using waste to minimize the amount of carbon dioxide CO<sub>2</sub> emitted into the air.

Thus, interesting innovations have been unleashed, as entrepreneurs take advantage of the opportunities posed by the transition to a structural green economy. A report produced by SEED (UNEP) highlighted that SMMEs struggled in selecting a legal entity (e.g. cooperative, trust, PTY) under which they are able to conduct simultaneously for-profit and non-profit activities (SEED Policy report South Africa, 2015). Figure 5 shows whether the green entrepreneurs had received green entrepreneurship education or not.



**Figure 5. Determining participation in green entrepreneurship education**

**Source: Survey Data (2015)**

The majority of the respondents had not received education in green entrepreneurship. Most of the respondents said that they felt the need to be an environmentally responsible citizen, or the need to be social entrepreneurs. A Chi-square test was conducted in relation to the impact of green education and green entrepreneurship activities. A Chi-square goodness of fit test showed this to be significant (df 102,  $x P=0.000$ ). The concept of green entrepreneurship education has gained prominence with Business schools, which now include it in their curriculum. Consequently, studies are being done to determine the green culture in education, teaching through modelling, inculcating green aesthetics and how it contributes to both sustainable education (Sarkar and Goutam, 2015). Green entrepreneurship education plays a significant role in developing green culture, green aspirations and promotes the development of green entrepreneurs in the country. There are organizations in South Africa, which are working hard to promote green entrepreneurship activities and complement government efforts as the country embraces green economy transition. Organizations, such as Fetola<sup>2</sup>, have been offering courses through their '#JustAddGreenprogramme,' which was open to all, who have been in operation for at least 6 months (Fetola, 2015: Online). This growing initiative aims to support a range of value-adding SMEs in that space. Table 2 is a summary of the opinions of green entrepreneurs interviewed regarding their activities.

---

<sup>2</sup>Fetola are enterprise and supplier development specialists with 30 years' experience in stimulating entrepreneurial success. <http://www.fetola.co.za/>

**Table 2. Determining the extent to which green entrepreneurship activities are taking place**

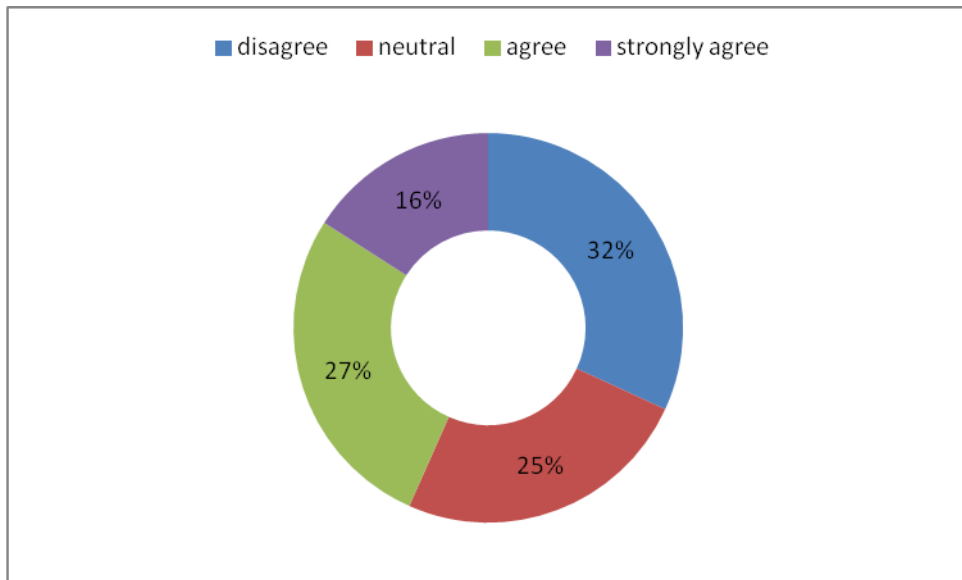
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total	Mean	Standard deviation
Expenditure on green procurement is growing stronger	11	7	71	13	1	103	2.17	0.991
Expenditure on green procurement is reducing	1	14	63	17	8	103	2.64	1.237
The number of repeat buyers for green products is increasing	-	-	83	12	8	103	3.21	1.300
I have access to green technology	-	9	47	33	14	103	2.61	1.237
Green activities gives my business a competitive advantage	-	-	5	22	76	103	3.47	1.347

*Source: Survey Data (2015)*

The table shows that the existence of support for green product innovation, by SMEs, on green procurement is growing. Fetola organization, which works with the majority of the SMEs, reckons that access to green technology is one of the principal indicators of the prevalence of green entrepreneurship activities (Fetola, 2015). As previously indicated, the number of green entrepreneurs has been growing in South Africa, with innovations being introduced every day. This is predicted to grow, with micro ecopreneurs exploiting opportunities in new niche markets that emerge (Holt, 2011). The growth in green entrepreneurs is also influenced by changes in lifestyles to focus on organic food production, recycling initiatives and the like. Despite the fact that the demand for sustainability-related practices in South Africa is increasing, it is still too small to be sufficient for most companies to undertake these activities. Support in the start-up phase, i.e. the total early-stage entrepreneurial activity (TEA) that is also crucial for sustainability is still small (SME Survey, 2015). However,



the majority, if not all of the respondents, expressed the opinion that green activities gave their business a competitive advantage. The concept of green procurement has not been practiced, although some of the respondents highlighted that they had always been environmentally conscious in buying their stationery or equipment. Those that expressed that expenditure on green procurement was growing are those that were introducing solar energy, going off grid, etc. Access to green technology seems not to be a problem among the green entrepreneurs interviewed. Figure 6 below highlights public support for Green Initiative activities in the country.



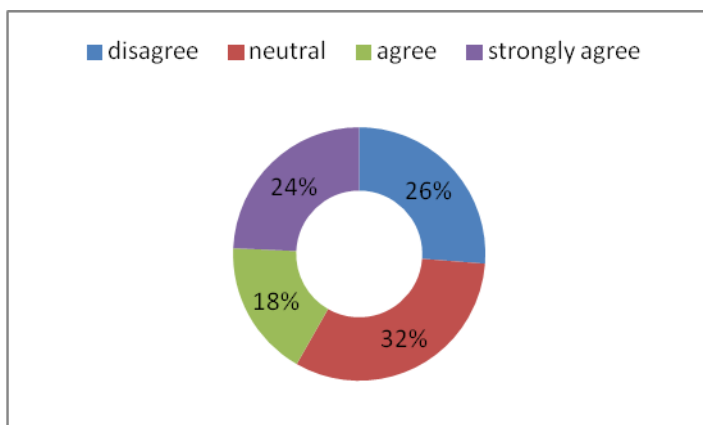
**Figure 6. Perceptions about public policies support for green initiatives**

*Source: Survey Data (2015)*

Green entrepreneurs are optimistic and driven by the desire to see a positive effect on the natural environment and economic sustainability and also consciously aim at ensuring a more sustainable future (Gibbs and O'Neill, 2015). These researchers further state that green entrepreneurs often struggle to survive, due to an unstable commitment from the public sector, whose support is easily withdrawn in response to frequent changes in politics and the efforts of lobbyist groups. The study found out that 43% of the respondents were neutral regarding their knowledge of public policies' support for green initiatives. Thus, majority of the respondents preferred to be neutral. In South Africa, there are a number of existing policy documents, such as the New Growth Path, the Industrial Policy Action Plan (IPAP), the

green paper on a climate change response strategy, the long-term mitigation strategy, the Integrated Resource Plan (IRP) 2010, the Medium Term Strategic Framework (MTSF) and the deliberations of the green economy summit, which identified the need for flagship programmes to demonstrate green economic activity. In addition, the Department of Environmental Affairs and the Development Bank of South Africa have funded some green projects since 2011.

Therefore, the strategic intent to support green entrepreneurs by the government is evident. The issue might be the implementation of the policies and the strategies. Also, the small number of green entrepreneurs, who have been able to receive the funding may account for the hesitation by the significant proportion of respondents preferring to be neutral. The Development Bank of Southern Africa (DBSA) contends that substantial policy reform is required if South Africa is to realize its vision of a green economy (Development Bank of Southern Africa, 2011). This lead the researcher to probe further by investigating whether there was access to information. Figure 7 highlights the extent of access to information by green entrepreneurs.

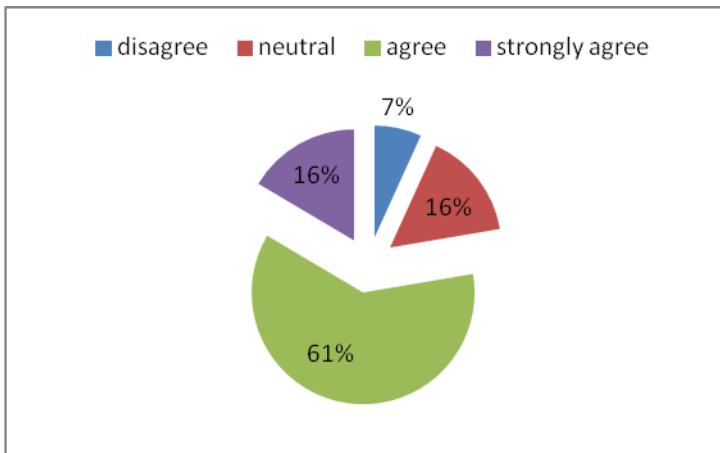


**Figure 7. Determining access to information on Green entrepreneurship activities**

*Source: Survey data (2015)*

Again, the majority of respondents were neutral, with 26% disagreeing and 18% agreeing. Meaning and understanding, as well as how one thinks about phenomena, is essential as this influences human actions. The DBSA (2011) emphasizes that greening the economy requires a certain level of innovation and risk taking. However, decision-makers, especially at local level, are

often conservative in their approach to policy and spending. Therefore, for green entrepreneurs to take risks, there is a need to have access to information and examine their options. Studies on green entrepreneurs available in the public domain often focus on individual entrepreneurs, neglecting wider economic and social contexts within which they operate. Sustainability transitions theories offer a potentially valuable means of understanding the role of businesses in engendering a green economy (Gibbs and O' Neil, 2014). Figure 8 reveals the extent to which green entrepreneurs can recognize the opportunity.



**Figure 8. Determining the extent of taking advantage of the opportunities**

*Source: Survey Data (2015)*

Green is taken to mean green either by the nature of the product (for example renewable energy), or substantially green policies and practices within their business (Kirkwood and Walton, 2015). 16% of the green entrepreneurs strongly agreed that they can easily recognise the green business opportunity while 61% agree. An interesting observation from the study was of not-for-profit organisation that had been promoting peace initiatives all along, but in the last two years has introduced another component to their projects. i.e. recycling and environmental awareness, thus taking advantage of the funding opportunities available in this area. Interesting and innovative ideas abound, but the challenge with budding entrepreneurs is to bring innovations to societies. Green entrepreneurs attempt new business opportunities and undertake ventures, which usually involve a very high risk. The outcome of these business ventures is often unpredictable (Farnelli et al., 2011).

## 4.1 Factors affecting green entrepreneurship activities in South Africa

While green entrepreneurship activities are being promoted in this era as South Africa transits towards a green economy, the greatest challenge is in identifying traits of green entrepreneurship. Numerous factors were raised by the green entrepreneurs interviewed for the study. Below is an extract of some of the activities and the issue raised by one organization interviewed:

*“They sell organic vegetables. They received training from development bank on waste management. In 2013, they were trained in Cuba in organic farming. The company works with local collectors but the challenge is that there is no space of garbage as Municipalities are not delivering. They work with community’s households about 1050. There is no access to information. There is a need to raise awareness. Corruption in government tenders. Lack of information among the communities,”* Duncan Village (2015).

Another organization interviewed revealed that green entrepreneurship is a subjective term. This particular organization had been in business for a long time, engaged in conservation and vegetation surveys. However, their concern was that support was not available unless if you have someone supporting you. Green is becoming popular, but it has interesting dynamics coming up. Table 3 below indicates some of the influential factors that are influencing green entrepreneurship activities.

**Table 3. Mean ranking of factors influencing green entrepreneurship activities in South Africa N= (103)**

<b>Factor</b>	<b>Percentage</b>	<b>Mean ranking</b>	<b>Standard deviation</b>
Opportunities	61	4.01	1,170
Incentives	15	3,83	1.160
Public policy and /or strategies	11	3.60	0.865
Access to finance	7	3.20	1.200
Institutions	4	2.43	1.205
Green education/training	2	2.87	0.90

**Source: Survey Data (2015)**

Table 3 indicated that availability of opportunities to go green with a mean rank of 4.01 was one of the most influencing factors on green entrepreneurship activities. This was followed by incentives (3.83), then public policy (3.60), access to finance (3.20), green education (2.87) and lastly institutions (2.43). The reason why 61% of the respondents ticked opportunities as the reason for going green or implementing sustainable entrepreneurship practices could be attributed to the number of programmes and initiatives that have been unveiled in the country in the last five years. Initiatives encouraging entrepreneurs who address both socio-economic and environmental challenges in SA are becoming more common place. The most recent of these is a massive R300-million fund by risk financier Business Partners Limited (PBL) in January 2016.

A SEED –UNEP (2015) report established that some of the challenges that were hindering green entrepreneurship activities in South Africa are few incentives for following green production and procurement practices and also training and learning of green practices manifest predominantly in-house, while community learning is a spillover effect. Mwakambira (2013), in his study, established that entrepreneur motivation had the greatest influence on green entrepreneurship practices in Kenya. According to survey done by local financial institutions regarding access to finance, the percentage of SMEs seeking bank finance now stands at 91% and only 7% targeted private investors (Mungadze, 2015). The Nedbank Small Business Index (NSBI) for the last quarter of 2014 has showed an improvement in the ease of obtaining finance, which it said was at a record high (Mungadze, 2015).

The next section discusses some of the observations regarding the types of entrepreneurs that were interviewed.

### *Survivalist or opportunists?*

Availability of opportunities was found to be one of the major factors influencing green entrepreneurship activities in the country. This was further crystallized with in-depth interviews, where respondents stressed that they had taken advantage of the opportunities that were being unveiled. This raised the question then whether these organizations were survivalists or opportunists, which have taken advantages of the opportunities of going green. Walley and Taylor (2002) proposed four typology of entrepreneurs, the four ‘ideal types’ of green entrepreneurs: innovative opportunists, visionary champions, ethical mavericks and adhoc enviropreneur. The ‘visionary champion’ type is consistent with Thompson’s ‘sea-change’

paradigm, in that this type of green entrepreneur is one who embraces a transformative, sustainability orientation. Innovasit-opportunist is one who has been influenced mainly by hard structural drivers, such as regulation. The ‘ethical maverick’ type of green entrepreneur is characterized by a sustainability orientation and soft structural influences.

In other words, the most significant influences on the business formation have been friends, networks and past experiences, rather than visions of changing the world. With sustainability, value-driven motivation, these people might tend to set up alternative-style businesses on the fringes of society. The ‘ad hoc enviropreneur’—is a kind of accidental green entrepreneur. The motivation of such people is financial, not value-driven and they are influenced mostly by personal networks, family and friends.

The next section discusses some of the limitations of green entrepreneurship activities in the country.



**Figure 9. Limitations of Green Entrepreneurship activities in South Africa**

**Source: Author**

## 4.2 Emergent themes/constructs

### 4.2.1 How green is green?

When it comes to green entrepreneurship activities, the most pressing issue is how to distinguish unambiguously relevant activities within “green” sectors of activities occurring in the rest of the economy (OECD, 2011). From the study, one of the respondents expressed the opinion that there was nothing green about his technology, except that the reduction in transport cost and the travelling. This was quite intriguing to the researcher, prompting the question: How green is green? How do you measure green entrepreneurship activities? Alternatively, what are the traits of green entrepreneurs? Kirkwood and Walton (2014) conducted a study to outline the motivations for starting the business; the key green aspects of the product or service that the green entrepreneurs produce or sell, as well the degree of greening the organizations. Their study indicated that motivations for green entrepreneurs were diverse, though a green entrepreneur is one with determination to make the world a better place. In this instance, this desire often exceeds the profit motive. The expression ‘green’ is used in both a relative and absolute sense of the word. Therefore, a green business could refer to one that has been set up on a green basis, or one that has become relatively green. Greenness can also refer either to the product, or to the process. The term ‘greening’ is used as a kind of symbol for ‘moving towards environmental or ecological sustainability’ (Gibbs and O’Neil, 2015).

From the study, it emerged that there are at least two types of green entrepreneurs: One that did not start out with environmental concerns, but became innovative along the way for either marketing, funding advantage or because of ethical concerns. On the other hand, there are those that embraced green activities from their inception, with a vision to transform the market in which they operate in.

### 4.2.2 Green entrepreneurship/social entrepreneurship

One of the respondents interviewed argued that green entrepreneurship is more of a vague term, or a buzz word, which is complex and means many things to different people. The respondent said she believed in social entrepreneurship, as it was more sustainable: “*business needs to understand that we need to have a positive impact to the society we live in. Green Entrepreneurship is great, but we need to understand people and the plan*”. She had been positively conscious of procurement process even before the

concept became famous. Her business was expanding and selling online. She had agents in Kenya and on the ground in townships areas.

Çigdem and Arun (2015) opined that the dynamics of a budding green entrepreneurship can be different in the emerging markets because the nature of the society and relations of business are different. As a result of these differences, green entrepreneurship also has distinguished dimensions and specific motivations. Therefore, the definition of green entrepreneur should also be distinguished from green social entrepreneur's community. A green entrepreneur can be either making a business "green" or simply entering a "green business". In other words, green entrepreneurship seeks for ecological sustainability, while green social entrepreneur's community, in their definition, considers the relationship between economy, ecology and society towards a sustainable approach. Two main roles are suggested for green social entrepreneur's community: first, as a part of economy, which changes the structure of economy to more sustainable manner, and another, as norm creator in society. The second role acts as a holder for development (Zahedi and Otterpohl, 2015). These roles were more pronounced among the SEED award winners, as the social aspect was more distinctive, when compared to the other two facets of a green economy, which are environmental and economic.



## **5.0 Conclusion and Policy Recommendation**

South Africa has put some policies and strategies to support and promote green entrepreneurship activities. Entrepreneurs have touted these as the strong signals towards the economic development. The concept of green entrepreneurship has been defined as the creation of new products, services or organizations to meet market opportunities. South Africa, in the past five years, has witnessed green entrepreneurs mushrooming across the country. However, there are some factors affecting the continued development of green entrepreneurship activities in the country.

The study sought to investigate and critically analyse the factors influencing green entrepreneurship activities in South Africa. It established that some green entrepreneurship activities have been started. Significantly, two types of green entrepreneurs exist: the ones that were started as a green business from inception and those that have adopted innovations along the way, taking advantage of funding and marketing opportunities. The term green entrepreneurship proved to be subjective and more of buzz word to some, with some preferring to call themselves social entrepreneurs.

Factors, such as lack of finance, institutional barriers, external competition, and lack of environmental and social awareness among citizen and decision makers proved to be some of the issues affecting green entrepreneurship activities in the country. The study's findings are limited by its exploratory, quantitative nature and small nature. It is, therefore, recommended that the results be treated with care and further research be carried out with a larger sample. The paper recommends that there is the need to increase awareness on green entrepreneurship and to connect these entrepreneurs to knowledge. The local ecosystem of firms, institutions and organizations constitute key actors for the execution of strategies that better link the different stakeholders at the local level.

## 6.0 References

Abu-Saifan, S. (2012). Social Entrepreneurship: definitions and boundaries. *Technology Innovation Management Review*. Available online: [http://timreview.ca/sites/default/files/article\\_PDF/GrootDankbaar\\_TIMReview\\_December2014.pdf](http://timreview.ca/sites/default/files/article_PDF/GrootDankbaar_TIMReview_December2014.pdf) [Accessed 22 June 2016].

Arend, R. and Bromiley, P. (2009). Assessing the dynamic capabilities view: Spare change, everyone? *Strategic Organization*, 7(1): 75-90.

Ayyagari, M., Beck, T. and Demirguc-Kunt, A. (2003). *Small and Medium Enterprises across the Globe: A New Database*. World Bank Policy Research Working Paper 3127. Washington: World Bank.

Bibri, S.E. (2013). *The Potential Catalytic role of Green Entrepreneurship technological eco-innovations and Ecopreneurs Acts in the structural transformation of a Low-carbon or Green Economy. A foucaudian Discursive Approach*. Thesis submitted for completion of Master of Science in Entrepreneurship, New Venture Creation. Department of Business Administration. School of Economics and Management. LUNDI University Sweden.

Booyens, I. (2011). Are small, medium-and micro-sized enterprises engines of innovation? The reality in South Africa. *Science and Public Policy*, 38(1), 67–78.

Carroll, A.B. and Buchholtz, A.K. (2010). *Business and Society, Ethics and Stakeholder Management*, South Western Publishing, Cinna., Ohio

Chiloane-Tsoka.E., Mabiza-ma-Mabiza and Mbohwa.C. (2014). Green economy and SMEs in South Africa. How green are South African SMEs. *Academic Journal of interdisciplinary studies*. Vol 3(6) MCSER publishing, Italy

Çigdem, V. and Korhan, A. (2016). What color is the green entrepreneurship in Turkey? *Journal of Entrepreneurship in Emerging Economies*, Vol. 8 Is 1 pp. 25 - 44 Permanent link to this document: <http://dx.doi.org/10.1108/JEEE-07-2015-0042>.

Development Bank of Southern Africa. (2011). *Programmes in support of transitioning South Africa to a green economy*. Development Planning

Division Working Paper series no 24. Development Bank of Southern Africa Limited.

Elzen, B., Geels, F. and Green, K. (Ed.). (2004). System innovation and the transition to sustainability. Theory, evidence and policy. Cheltenham, Edward Elgar.

Farinelli, F, Bottini, M, Akkoyunlu, S and Aerni, P.(2011). Green entrepreneurship: the Missing Link towards a Greener Economy, ATDF Journal, vol. 8, no. 3/4, pp. 42–48.

Geels, F. (2004). From sectoral systems of innovation to socio-technical systems: Insights about dynamics and change from sociology and institutional theory. *Research Policy* 33(6/7): 897- 920.

Gibbs, D. and O’Neill, K. (2014). Rethinking sociotechnical transitions and green entrepreneurship: the potential for transformative change in the green building sector. *Environment and Planning a* 46(5) ,1088 – 1107.

Gibbs, D. and O’Neill, K. (2015). Green Entrepreneurship: Building a Green Economy? – Evidence from the UK. In *Social and Sustainable Enterprise: Changing the Nature of Business*. Published online: 08 Mar 2015; 75-96. *Contemporary Issues in Entrepreneurship Research, Volume 2*, 75–96. Available Online: [http://dx.doi.org/10.1108/S2040-7246\(2012\)0000002008](http://dx.doi.org/10.1108/S2040-7246(2012)0000002008). [Accessed 10 July 2015]

Groot, A. and Dankbaar, B. (2014). Does social innovation require social entrepreneurship? *Technology Innovation Management Review*. Available online: [http://timreview.ca/sites/default/files/article\\_PDF/GrootDankbaar\\_TIMReview\\_December2014.pdf](http://timreview.ca/sites/default/files/article_PDF/GrootDankbaar_TIMReview_December2014.pdf) [Accessed 22 June 2016].

Fetola. (2016).An overview and analysis of results from the 2013 Fetola SME Growth Survey November Available online:[http://www.fetola.co.za/wpcontent/uploads/2015/07/JustAddGreen\\_Brochure\\_Update\\_Small.pdf](http://www.fetola.co.za/wpcontent/uploads/2015/07/JustAddGreen_Brochure_Update_Small.pdf) [Accessed 17 April 2016]

Herrington, M., Kew, J. and Kew, P. (2009). Tracking entrepreneurship in South Africa: A GEM perspective: Global Entrepreneurship Monitor. Country report.

Holt, D. (2011). Where are they now? Tracking the longitudinal evolution of environmental businesses from the 1990s. *Business strategy and the environment*, Vol 20 pp 238-250. Available online:<http://www.bdlive.co.za/business/2015/05/03/smes-access-to-finance-improves-survey-finds> [Accessed 27 January 2016].

International Labour Organization- ILO. (2015). *Green entrepreneurship creating green jobs through sustainable development*. ILO.

Kirkwood, J and Walton, S. (2015). How green is green? Ecopreneurs are balancing environmental concerns and business goals. *Australian Journal of Environmental Management*, 21:1, 37-51. DOI:10.1080/14486563.2014.880384.

Lekhanya, L.M. (2014). The Level of awareness of green marketing and its managerial implications amongst selected South African manufacturing Small, Medium and Micro Enterprises (SMMEs) in KwaZulu—Natal. *Journal of Economics & Behavioral Studies*, Vol. 6 Issue 8, 625.

Mungadze, S. (2015). SA's emerging entrepreneurs 'among the best in the world. Available online: <http://www.bdlive.co.za/business/2015/05/15/sas-emerging-entrepreneurs-among-the-best-in-the-world> [Accessed 20 March 2016].

Mwakambirwa, B. (2013). *Green Entrepreneurial Practises among small and medium enterprises in Mombasa County, Kenya*. A Master Thesis. The University of Nairobi.

Ndubisi, N.O., Moreover, R. and Nair, S.R. (2009). Green Entrepreneurship (GE) and green value added (GVA): A conceptual framework", *International Journal of Entrepreneurship & Innovation*, Vol 20 13, Number 1, Pages 21-24, 2009.

Nikolaou, E.I., Ierapetritis, D. and Tsagarakis, K.P. (2011). An evaluation of the prospects of green entrepreneurship development using a SWOT analysis. *International Journal of Sustainable Development and World Ecology*. Vol 18, No1 .1-16.

Organisation for Economic Corporation Development- OECD. (2010). *SMEs and Green Growth: Promoting sustainable manufacturing and eco-innovation in small firms. Lessons from the global crisis and the way forward to job creation and growth*. OECD Working Party on SMEs and Entrepreneurship (WPSMEE). Paris 17-18 November 2010. Issue Paper 3.

OECD. (2011). Measuring Green Entrepreneurship, in Entrepreneurship at a Glance 2011, OECD Publishing. Available online at <http://dx.doi.org/10.1781/9789264097711-4en>

Pandrani, M.D. and Ferguson, D. (2014). Enabling factors of Green Entrepreneurship: A case study of organic Agriculture produce in the Sindh and Balochistan provinces of Pakistan. *Entrepreneurial learning* 181-191

Parrish, B.D. and Foxon, T.J. (2009). Sustainability entrepreneurship and equitable transitions to a low-carbon economy. *Green Management International*, vol. 55, pp. 47-62.

Parrish, B.D. and Foxon, T.J. (2009). Sustainability Entrepreneurship and Equitable Transitions to a Low-Carbon Economy. *Green Management International*, Number 55, Pages 47-62, 2009

Schaltegger, S. (2002). A framework for eco-preneurship: leading pioneers and environmental man-agers to eco-preneurship. *Greener Management International*, vol. 38, pp.45-58.

Shepherd, D.A. and Patzelt, H. (2011). The New Field of Sustainable Entrepreneurship: Studying Entrepreneurial Action Linking What Is to Be Sustained With What Is to Be Developed", *Entrepreneurship: Theory & Practice*, Volume 35, Number 1, Pages 137-163, 2011

Smith, M and Brown, E. (2015). Green building supply. <http://www.iira.org/wp-content/uploads/2014/08/Green-Entrepreneurs-Joel-Hirshberg-Green-Building-Supply.pdf>

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and micro foundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13): 1319- 1350.

Teece, D., Pisano, G., and Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7): 509-533.

United Nations Environmental Programme-UNEP (2011). Towards a Green economy. Pathways to sustainable development and poverty reduction. Available online at [www.unep.org/green\\_economy](http://www.unep.org/green_economy). Accessed 11/03/2015. ISBN 978-92-801-3143-9.

Vink, N. (2001). Small farmers in South Africa. A Survey. *Agrekon* 40(2)130-186.

Walley, E.E. and Taylor, D.W. (2002). *Opportunists, champions and Mavericks? A typology of green entrepreneurs*. Greenleaf publishing.

Zahedi, A. and Otterpohl, R. (2015). Towards Sustainable Development by Creation of Green Social Entrepreneur's Communities. *Procedia CIRP* 26 (2015) 196– 201 Science Direct 12th Global Conference on Sustainable Manufacturing.

## UNU-INRA Contact

United Nations University Institute for Natural Resources in Africa  
(UNU-INRA)  
Second Floor, International House,  
Annie Jiajge Road, University of Ghana, Legon  
Accra, Ghana

Private Mail Bag,  
Kotoka International Airport, Accra, Ghana

**Tel:** +233-302- 213850. Ext. 6318

**Email:** [inra@unu.edu](mailto:inra@unu.edu)

**Website:** [www.inra.unu.edu](http://www.inra.unu.edu)



MATE MASIE

“What I hear, I  
keep”-Symbol of  
wisdom, knowledge  
and understanding.



NEA ONNIMNO SUA  
A, OHU

“He who does not know  
can know from learning,  
-Symbol of life-long  
education and continued  
quest for knowledge.



NYANSAPO

“Wisdom knot” – Symbol of  
wisdom, ingenuity, intelligence  
and patience.

ISBN: 978-9988-633-18-9



9 789988 633189