COCOA SUSTAINABILITY IN GHANA AND IVORY COAST: THE ROLE OF GREEN FINANCING

Research Paper

Muafueshiangha Ibrahim Menkeh, Doctorate Candidate, SSBM Geneva, menkibra@gmail.com

Abstract

The purpose of this study is to evaluate Cocoa sustainability in Ghana and Ivory Coast while employing the mediating role of green financing. For the researcher to achieve this, a simple random sampling technique was adopted in selecting 50 respondents as the sample size from each country (Ghana and Ivory Coast). The researcher collected data from a well-structured questionnaire using an online survey. Data analysis was done using SPSS to produce descriptive statistics and inferential statistics (Independent T-test). The study found significant difference in mean cocoa sustainability response between Ghana and Ivory Coast. It was recommended that favourable existing legal framework and policy needs to be implemented to actuate all value chain actors since higher cocoa productivity often entails higher costs for farmers in both countries.

Keywords: Cocoa Sustainability, green financing, Ghana, Ivory Coast.

1 INTRODUCTION

Cocoa production contributes immensely to not just directly the national coffers as a source of foreign exchange but also creates employment and a sense of purpose to rural folks in southern Ghana and Ivory Coast (Ingram et al., 2017 & Bilson, 2018). The World Cocoa Foundation also allude that, cocoa production provides employment for over five million smallholder farmers in both West – Africa and Latin American cocoa producing countries. The benefits of cocoa production is not limited to its farmers. On a global scale, Reinecke, Manning and Von – Hagen (2012) express that, between 40 and 50 million people worldwide are dependent economically on the cultivation and processing of cocoa.

Cocoa is a globally cherished product due to the chocolate products the cocoa beans are converted into. Center for the Promotion of Imports from developing countries (CBI) (2020) explain that, the largest consumers of chocolate in the world in 2018 were Germany and Switzerland with per – capita consumption of 11 kilogrammes and 9.7 kilogrammes respectively. With such high levels of consumption, the demand for cocoa beans worldwide is raising (CBI).

Despite the benefits that come with cocoa production, its associated undesirable environmental and social consequences are alarming. These consequences have prompted sustainability campaigns on better ways to deal with the consequences before they deepen (Nieburg, 2015; Laven & Boomsma, 2012; Reinecke, Manning and Von – Hagen, 2012).

Despite these positive developments, the grieve concerns over the sustainability of cocoa production due to challenges of poor farmer conditions and incomes, poor technology and agro methods, and environmental degradation among others is increasingly growing loud. Daoui (2018) and Dontenville

(2018) posit that due to aggressive deforestation in search of new cocoa farm lands, it is predicted that Ivory Coast will be without a rainforest by 2034. A similar faith awaits Ghana and most of the major producers of cocoa in the world (Takyi & Amponsah, 2020; Laven & Boomsma, 2012; Teguh & Misnawi 2008). The challenges affecting the sustainability of cocoa production are frightening and the thought of a future loss of employment, income, the vegetation, climate change and the potential loss of delicious cocoa products does not make the situation any easier.

Sustainability of cocoa production has gunned a lot interest among scholars with several research papers produced on and around this topic ((Takyi & Amponsah, 2020; Daoui, 2018; O'Donnell, 2019; Nieburg, 2015; Teguh & Misnawi, 2008). Unfortunately, very few scholars have tried to associate directly the sustainability of cocoa cultivation with the mediating role of green financing in Ghana and Ivory Coast. This deficiency is the gap which this study intends to address.

2 LITERATURE REVIEW

Jha and Bhome (2013) conducted an empirical study on the procedures taken to become green in order to assess bank personnel, associates, and the general public's understanding of green banking issues. They gathered information from 12 bank executives, 50 bank staff, and 50 ordinary clients. Online banking, green loans, energy-saving equipment, green credit cards, solar and wind energy, and mobile banking were all found to be frequently used banking tactics. UNEP (2013) undertook a green economy scoping study in Ghana using largely qualitative research identified three initial sectors that should receive strategic investment to strengthen the transition to a green economy. These sectors were agriculture, forestry and industry. UNEP (2016) reported in a study it conducted on green finance for developing countries in its findings that, the key concerns of developing countries include; integrated approach in addressing environmental, economic and social issues, international promotion of green economy should not come at a cost of the aid to developing countries, the impacts of international developments on developing countries should not be overlooked. The report also advanced specific needs of developing countries as; financial system developments and international knowledge sharing among others.

PAGE (n. d) conducted a green finance study in Ghana using a mixed method approach of desk review, survey, interview/consultation, and stakeholder dialogue and discovered the following barriers to green finance in Ghana: maturity mismatch for green lending affected investments into green sectors, a lack of quality data for investment risk management across all significant green opportunities, lack of clarity on green finance activities, lack of domestic and green investors in Ghana for green finance, SMEs had low collateral value and therefore are unable to access green funds, high non – performing loans, and a none clear policy on green finance in Ghana. The survey also highlighted huge green finance prospects for Ghana's corporate community across all sectors.

On sustainability, Steijn (2016) submits in the study "towards sustainable cocoa production: a mixed assessment of the influence of local governance modes on the farm level impact of private cocoa certification standards in Ghana", that public and private governance institutions in Ghana's cocoa business share similar goals and use similar techniques COCOBOD's strict government are anticipated to boost the adoption and influence of certification standards. COCOBOD, on the other hand, lacked the competence to properly handle the difficulties in Ghana's cocoa business on its own. Therefore increased cooperation to harmonise the efforts of other stakeholders is needed to effectively address the issues. The study employed mixed method analysis with qualitative, quantitative and desk research to obtain data. Semi – structured interviews were conducted with stakeholders for qualitative data. Then quantitative data was collected from certified farmers. Mithofer et al. (2018) in a study on unpacking 'sustainable' cocoa: "do sustainable standards, development projects and policies address producer concerns in Indonesia, Cameroon and Peru?" using analysis based on literature review and key informant interviews found that price volatility, weak farmers organizations and dependence on few buys had poor economics consequence on smallholder farmers. The study further revealed that sustainability standards were unevenly spread with less focus on the farmers.

Ingram, van Rijn, Waarts, and Gilhuis (2018) used Ghana and Ivory Coast as research sites to explore the effects of cocoa sustainability in West Africa. The study included empirical evidence from large – scale, mixed – method research that used a suite of socioeconomic, agronomic, and environmental factors to assess the position of UTZ certified and non – certified farmers in Ghana in 2012 and 2015 and in Ivory Coast in 2013 and 2017. The findings revealed that, on average, outcomes are mixed and, in general, small. However, accredited farmers who received a full package of services saw considerable gains in cocoa yield and income.

The findings suggested that, while partnerships have created new governance arrangements with a greater emphasis on sustainable value chain initiatives that result in a living income and optimize productivity, limiting environmental impacts requires sectoral transformation, continued partnerships, and a variety of other policy instruments to address persistent wicked problems of cocoa production

However, the simplistic understanding of the importance of the phenomenon in the cocoa sector was missing. What is the role of green financing in Cocoa sustainability in Ghana and Ivory Coast?

3 RESEARCH METHODOLOGY

The study adopted a quantitative research approach. This is because quantitative research approach involves quantification and analysis of variables in order to get results; involves generating and utilizing numerical data, and analysing same using specific statistical techniques; and is based on accurate measurements taken with organized and approved data-collection tools (Apuke, 2017). To this end, survey research design was employed to enable the detail explanation of the phenomenon by gathering data in a numerical form.

3.1 Research Settings

The population for this study comprises all cocoa farmers in Ghana and Ivory Coast. As a result, a simple random sampling technique was adopted in selecting 50 respondents as the sample size. 25 each from the countries (Ghana and Ivory Coast)

3.2 Data collection and analysis

The researcher collected data from a well-structured questionnaire via an online survey. Where necessary, the researcher interviewed respondents to ascertain certain valuable information pertinent to the outcome of the study. Data analysis was done using descriptive statistics (frequencies and percentages) and inferential statistics (Independent T-test) with the help of the Statistical Package for Social Sciences (SPSS version 25).

4 RESULTS

Out of 50 questionnaires that were sent, only 47 were administered making 94% of the response rate. 50 respondents were sampled from both countires to represent the entire population.

4.1 Demographics

In Table1 summarizes the demographics of respondedents from Ghana and ivorycoast. Fro m the table it can be seen that male respondents were 20% more than the female respondents. Also the table shows that most of the respondents had worked in the cocoa industry between 11 to 15 years.

GENDER	N	%	EXPERIENCE FARMING COCOA	N	%
Male	30	60.0	Less than 5 years	8	16.0
Female	20	40.0	6-10 years	14	28.0
			11-15 years	21	42.0
			16 years and above	7	14.0

Table 1. Demographic summary.

4.2 Challenges of green financing in the cocoa sector

Table 2. Details challenges of green financing in the cocoa sector in Ghana and Ivory Coast. The overall answer shows that, 'Credit and capital markets risk influences demand for green finance.' 80% and 64% , "lack of clarity is a critical obstacle for investors, companies and banks to identify opportunities for green investing"76% and 44% and "limited number of domestic green investors" 56% and 60% respectively are the main challenges facing both countries.

Challenges	Country	N	%
There is maturity mismatch for green lending caused by the structural asymmetry in financial system.	GH	15	60.0
	IC	14	56.0
limited number of domestic green investors	GH	14	56.0
	IC	15	60.0
limited risk assessment capabilities and understanding by the banks or financial institutions on green financing	GH	18	72.0
	IC	9	36.0
lack of visibility of appropriate policy framework for identifying key funding channels for green activities	GH	15	60.0
	IC	10	40.0
is lack of clarity on what constitutes green finance activities and products	GH	19	76.0
	IC	9	36.0
Credit and capital markets risk influences demand for green finance.	GH	20	80.0
	IC	16	64.0
lack of clarity is a critical obstacle for investors, companies and banks to identify opportunities for green investing	GH	19	76.0
	IC	11	44.0

Table 2. Challenges of green financing face in the cocoa sector.

4.3 Innovations for long-term sustainability of cocoa production

Table 3. Presents possible innovations that can help long term sustainability of cocoa production. Overall, "Unblocking inefficient deadlocks of contestations around ambiguous land and tree tenure terms" 96% respectively, "Production of deforestation free commodities is hampered by lack of land use planning and tenure insecurity"88% and 96% and "Appropriate certification which aims to promote quality and protect farmers interest" 84% and 56% were identified as innovations for long-term sustainability of cocoa production in both countries.

Innovations for sustainable cocoa production	Country	N	%
Training farmers on the new methodologies and approaches	GH	15	60.0

	IC	13	52.0
Appropriate certification which aims to promote quality and protect farmers interest	GH	14	56.0
	IC	21	84.0
Providing farmers with personal protective equipment such as protective clothing, weeding and pruning tools	GH	14	56.0
	IC	18	72.0
must maintain a higher and stable good practice regarding agrochemical use and waste chemical management	GH	15	60.0
	IC	9	36.0
is lack of clarity on what constitutes green finance activities and products	GH	19	76.0
	IC	9	36.0
agro training in conjunction with pesticides results in higher output and sustainability	GH	16	64.0
	IC	18	72.0
Improve soil and water quality for their cocoa production	GH	19	76.0
	IC	12	48.0
Increased access to inputs, fertilizers, and seedlings	GH	19	76.0
	IC	11	44.0
Access to land, favourable producer prices, and sufficient infrastructure	GH	20	80.0
	IC	16	64.0
Unblocking inefficient deadlocks of contestations around ambiguous land and tree tenure terms	GH	24	96.0
	IC	24	96.0
Production of deforestation.-free commodities is hampered by lack of land use planning and tenure insecurity	GH	22	88.0
	IC	24	96.0

Table 3. Innovations for sustainable cocoa production.

4.4 Strategies to stimulate Private Sector and Public Sector investment and engagement in the Cocoa Sector

In Table 4. Respondents affirmed that “Adequate financial capacity of contracting authority”88% and 92%, ‘Stable macroeconomic indicators” 80% and 64%, “Available and mature financial market”80% and 64% and “Favourable existing legal framework and policy” were some strategies that can stimulate private sector and public sector investment and engagement in the cocoa sector in both countries.

Strategies	Country	N	%
Favourable existing economic policies	GH	15	60.0
	IC	13	52.0
Favourable existing legal framework and policy	GH	14	56.0
	IC	21	84.0
Government positive attitude towards private sector investments	GH	14	56.0
	IC	18	72.0
Government should provide guarantees	GH	15	60.0
	IC	9	36.0
Government should provide tax rebate to the private investors in the cocoa sector.	GH	16	64.0
	IC	18	72.0
	GH	19	76.0

Favourable political stability is necessary to stimulate private sector and public sector engagement in the cocoa sector	IC	12	48.0
Positive public ideology towards private sector is necessary to encourage investment	GH	19	76.0
	IC	11	44.0
Available and mature financial market	GH	20	80.0
	IC	16	64.0
Stable macroeconomic indicators	GH	20	80.0
	IC	16	64.0
Adequate financial capacity of contracting authority	GH	22	88.0
	IC	23	92.0

Table 4. Strategies to stimulate private sector and public sector investment and engagement in the cocoa Sector.

4.5 INDEPENDENCE T TEST

In order to analyse the statistical difference in cocoa stability between Ghana and Ivory Coast, we adopt the independent sample t test. The Independent Samples *t* Test compares the means of two independent groups (Ghana and Ivory Coast) in order to determine whether there is statistical evidence (Cocoa Sustainability) that the associated population means are significantly different.

Independent Samples Test										
		Levene's Test for Equality of Variances		**t-test for Equality of Means**						
		F	**Sig.**	**t**	**df**	**Sig. (2-tailed)**	**Mean Difference**	**Std. Error Difference**	**95% Confidence Interval of the Difference**	
									Lower	**Upper**
Sustainability	Equal variances assumed	.999	.323	-9.674	48	.000	-40.52000	4.18840	-48.94134	-32.09866
	Equal variances not assumed			-9.674	46.047	.000	-40.52000	4.18840	-48.95057	-32.08943

Table 5. Independent Sample Test.

The *p*-value of Levene's test is printed as 0.323, which means, $p > 0.05$, so we fail to reject the null of Levene's test and conclude that the variance in cocoa sustainability is not significantly different for both

countries. Also, this p-value informs us that we should look at the "Equal variances assumed" row for the *t* test (and corresponding confidence interval) results.

Since $p < .001$ (in "Equal variances assumed" row) is less than our chosen significance level $\alpha = 0.05$, we can reject the null hypothesis, and conclude that the mean cocoa sustainability for Ghana and Ivory Coast is significantly different. Based on the results, there was a significant difference in mean cocoa sustainability response between Ghana and Ivory Coast (t_{48}= -9.674, $p < .000$).

5 DISCUSSIONS

The aim of the study to evaluate Cocoa sustainability in Ghana and Ivory Coast while employing the role of green financing. The study used a quantitative research approach. The population of the study was 50 respondents (25 each) from both Ghana and Ivory Coast. Findings from the study shows that major challenges affecting green financing in the cocoa sector in Ghana and ivory coast were Credit and capital markets risk influences demand for green finance ,lack of clarity is a critical obstacle for investors, companies and banks to identify opportunities for green investing and limited number of domestic green investors. also the study identified Unblocking inefficient deadlocks of contestations around ambiguous land and tree tenure terms, Production of deforestation free commodities is hampered by lack of land use planning and tenure insecurity and Appropriate certification which aims to promote quality and protect farmers interest.

Adequate financial capacity of contracting authority, Available and mature financial market and Favourable existing legal framework and policy were also identified as strategies that can stimulate private and public sector investments and engagement in the cocoa sector.

In order to analyses the difference in cocoa sustainability between Ghana and Ivory Coast, the study employed an independent t test. From the independent t test output, a p-value(0.000) (in "Equal variances assumed" row) which is less than our chosen significance level $\alpha = 0.05$, hence we rejected the null hypothesis, and concluded that the mean cocoa sustainability for Ghana and Ivory Coast is significantly different. Based on the results, there was a significant difference in mean cocoa sustainability response between Ghana and Ivory Coast (t_{48}= -9.674, $p < .000$).

Hatly, A., et al., (2012), claimed that Cote d'Ivoire has been the world top in cocoa output since 1978 in their study. However, the sustainability of cocoa, as reflected in its market share, has been falling as it competes with other cocoa-producing countries such as Ghana. Ghana and Cote d'Ivoire together produce 58 percent of the world's cocoa. According to this study, Cote d'Ivoire should reposition itself to capitalize on the projected cocoa shortage because a higher price due to scarcity will increase revenue, which will lead to the development of industry supply chain and infrastructure, and an increase in cocoa prices would have been more fully and rapidly transmitted to consumers than a decrease.

A study by Läderach, P. et al., (2013) contradicts the study findings, arguing that there is no difference in cocoa sustainability programs in Ghana and Ivory Coast because cocoa sustainability initiatives began in the mid-2000s and have grown significantly, primarily by focusing on the two main producing countries, Ivory Coast and Ghana, without scaling to other larger producer countries. Furthermore, the report contends that the personnel taught through the cocoa sustainability initiatives were skilled and efficient in order to enhance production.

6 CONCLUSION

In conclusion, the study found a significant difference in cocoa sustainability in Ghana and Ivory Coast. Although there are less funds available for cocoa farmers in both countries, Ivory Coast has the opportunities to develop its cocoa industry and Ghana has the human capacity to grow its cocoa industry. Also findings from the study showed that the system of green financing in the Cocoa sector in Ivory Coast is more structured and ahead of that in Ghana. Comparing Ghana to Ivory Coast, the findings from the study showed that the contribution of Cocoa sustainability in Ivory Coast by green financing

is ahead of that in Ghana. To promote cocoa sustainability in both countries, favourable existing legal framework and policy needs to be implemented to actuate all value chain actors since higher cocoa productivity often entails higher revenue for farmers in both countries.

References

Ambec, S., Cohen, M.A., Elgie, S., & Lanoie, P. (2011). The Porter Hypothesis at 20: Can Environmental Regulation Enhance Innovation and Competitiveness? Retrieved at: https://studylib.net/doc/12879797/

Apuke, O. D. (2017). Quantitative research methods: A synopsis approach. *Kuwait Chapter of Arabian Journal of Business and Management Review*, *33*(5471), 1-8.

Bilson, G. (2018). Economic Sustainability of Cocoa production in Ghana: Western region. Retrieved at: https://www.theseus.fi/handle/10024/150229

Daoui, A. (2018). Cocoa Production in Ivory Coast and the Challenge of Sustainability. Retrieved at: https://www.waystocap.com/blog/cocoa-production-in-ivory-coast-and-the-challenge-of-sustainability/

Dontenville, A. (2018). Towards sustainable cocoa. Retrieved at: https://medium.com/@OECD/towards-sustainable-cocoa-a4ef595c2110

GIZ. (2011). Green Finance – An innovative approach to Fostering Sustainable Economic Development and Adaptation to Climate Change. Retrieved at: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjQx-CXk_buAhVFtHEKHSBCBKkQFjACegQIBhAD&url=https%3A%2F%2Fwww.cbd.int%2Ffinancial%2Fgcf%2Fgiz-greenfinance2011.pdf&usg=AOvVaw1iwytAVB_TsLIoSQjeUULN

Ingram, V., van Rijn, F, Waarts, Y., & Gilhuis, H. (2018). The Impacts of Cocoa Sustainability Initiatives in West Africa. Retrieve at: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwi5zaDOlPbuAhV8UBUIHf6zCykQFjABegQIAhAD&url=https%3A%2F%2Fwww.mdpi.com%2F2071-1050%2F10%2F11%2F4249%2Fpdf&usg=AOvVaw2zE4YdrpNLzy0w255cKNuN

Ingram, V., van Rijn, F., Waarts, Y., Dekkers, M., de Vos, B., Koster, T., Tanoh R., Galo A. (2017). *Towards sustainable cocoa in Côte d'Ivoire. The impacts and contribution of UTZ certification combined with services provided by companies.* (Wageningen Economic Research rapport; No. 2018-041). Wageningen Economic Research. https://doi.org/10.18174/450223

Jha, N.& Bhome, S. (2013). A study of green banking trends in India. *Abhinav International Monthly Refereed Journal of Research in Management & Technology*, 5(2), 127-132.

Läderach, P., Martinez-Valle, A., Schroth, G., & Castro, N. (2013). Predicting the future climatic suitability for cocoa farming of the world's leading producer countries, Ghana and Côte d'Ivoire. *Climatic change*, *119*(3), 841-854.

Laven, A. & Boomsma, M. (2012). *Incentives for sustainable cocoa production in Ghana,* Koninkrijk der Nederland: Royal Tropical Institute. Retrieved at: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiJ856SlfbuAhUVZxUIHW-TDAoQFjABegQIAxAD&url=http%3A%2F%2Fwww.fao.org%2F3%2Fa-at220e.pdf&usg=AOvVaw3-OBGdjzF6N7O5sxBGPBNy

Mithofer, D., Roshetko, J.M., Donovan, J.A., Nathalle, E., Robiglio, V., Wau, D., Sonwa, D.J., & Blare, T. (2018). Unpacking 'sustainable' cocoa: do sustainability standards, development projects and policies address producer concerns in Indonesia, Cameroon and Peru? International Journal of Biodiversity Science, Ecosystem Services & Management. Retrieve at: https://doi.org/10.1080/21513732.2018.1432691

Nieburg, O. (2015). Extreme Poverty Ignored in Sustainable Cocoa Drive, says NGOs. Retrieved at: https://www.confectionerynews.com/Article/2015/03/06/Poverty-in-cocoa-ignored-in-sustainablity-drive-Cocoa-Barometer-2015

O'Donenll, K. (2019). Improving the Sustainabitlity of cocoa growth in West Africa. Retrieved at: https://www.worldcocoafoundation.org/blog/improving-the-sustainability-of-cocoa-grown-in-west-africa/

Steijn, C. (2016). Towards sustainable cocoa production: a mixed method assessment of the influence of local governance mode on the farm level impact of private cocoa certification standards in Ghana. Retrieved at: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwi2kcvJlvbuAhUEsXEKHbTWDsMQFjABegQIAxAD&url=https%3A%2F%2Fdspace.library.uu.nl%2Fbitstream%2Fhandle%2F1874%2F337181%2FSteijn%25205572940%2520master%2520thesis%2520final.pdf%3Fsequence%3D2%26isAllowed%3Dy&usg=AOvVaw35eW9A4MEE7MQqFzAqk9DJ

Stoian, D. (2017). Moving towards a sustainable cocoa sector in Ghana. Retrievd at: https://www.bioversityinternational.org/news/detail/moving-towards-a-sustainable-cocoa-sector-in-ghana/

Takyi, S. A., & Amponsah, O. (2020). Ghana's Cocoa Production relies on the environment, which needs better protection. Retrieved at: https://theconversation.com/ghanas-cocoa-production-relies-on-the-environment-which-needs-better-protection-134557

Teguh, W., & Misnawi. (2008). The world scenario of cocoa production and consumption. Indonesian Coffee and Cocoa Research Institute. Retrieved at: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwirgoq7l_buAhX_SxUIHZ8EAfoQFjAAegQIAxAD&url=https%3A%2F%2Fciteseerx.ist.psu.edu%2Fviewdoc%2Fdownload%3Fdoi%3D10.1.1.455.5736%26rep%3Drep1%26type%3Dpdf&usg=AOvVaw1S0mJ3-B3WoDLEK0kRbnoQ

United Nation Environmental Programme. (2010). Green economy, developing countries success stories. Retrieved at: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjBlLL0l_buAhUKXRUIHRDuDJQQFjAAegQIAhAD&url=https%3A%2F%2Fwww.minambiente.it%2Fsites%2Fdefault%2Ffiles%2Farchivio%2Fallegati%2Frio_20%2Funep_developing_countries_success_stories_eng.pdf&usg=AOvVaw0kjpx0kt1AEZ7XHN6fbDSA

United Nation Environmental Programme. (2013). Green economy scoping study Ghana. Retrieved at: https://wedocs.unep.org/handle/20.500.11822/25910

United Nations Environment Programme. (2016). Green Finance for Developing Countries Needs, Concerns and Innovations. Retrieved at: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjN6LHAmPbuAhW4RhUIHaqGB-IQFjACegQIAxAD&url=https%3A%2F%2Fwww.ifc.org%2Fwps%2Fwcm%2Fconnect%2Fee178340-c364-4c1c-9306-a37a68f809d0%2FGreen_Finance_for_Developing_Countries.pdf%3FMOD%3DAJPERES%26CVID%3DlnBtbPL&usg=AOvVaw2oLKuNIEjeLWtAB0loRr4v

Van der Ploeg, R., & Withagen, C. (2012). Green growth, green paradox and the global economic crisis. Environ Innoy Soc Transit 2012:116 – 9. Retrieved at: https://www.sciencedirect.com/science/article/abs/pii/S2210422412000573

Wieters, K. M. (2016). Advantages of online methods in planning research: Capturing walking habits in different built environments. *Sage Open, 6*(3), 1-11.