

ASSESSING BOTSWANA'S PREPAREDNESS IN DEALING WITH NATURAL DISASTERS

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DEFINITIONS

Natural Disaster - Any event or force of nature that has catastrophic consequences (1)

Disaster – Any event that would disrupt the normal pattern of activities in a given area as a result of interaction between hazard and human population. This results in loss of life, injury, economic and social hardships.

Disaster risk – The potential disaster losses in lives, health status, livelihoods, assets and services which could happen in a specified community

Disaster management – An integrated series of activities and strategies (prevention, mitigation, preparedness, response and recovery) implemented within the context of national development

Disaster mitigation – refers to the plans, strategies and actions taken to reduce the vulnerability of a population to a future disaster threat

Disaster preparedness – refers to the plans and actions taken to ensure an effective response to a disaster that may occur in the future

Emergency response – refers to the actual operations and actions that are taken as soon as a disaster strikes. These are aimed at providing assistance and support to the affected population and area.

Recovery – refers to all the actions that are taken to return the affected population to normal life and to phase in mitigation measures to help with better protection in the future.

ABBREVIATIONS/ SYNONYMS

1. NDMO – National Disaster Management office
2. HIV – Human Immuno Virus
3. AIDS – Acquired Immune Deficiency Syndrome

4. HDI – Human Development Index
5. UN – United Nations
6. UNDP – United Nations Development plan
7. UNISDR – United Nations International Strategy for Disaster Reduction
8. ISDR – International Strategy for Disaster Reduction
9. HFA – Hyogo Framework for Action
10. WCNDR – World Conference on National Disaster Reduction
11. USD – United States Dollar
12. CBPP – Contagious Bovine Pleuro – Pneumonia
13. DRR – Disaster Risk Reduction
14. Sms – Short Message Service

ABSTRACT

Natural disasters have affected Botswana with varying regularity and intensity. The United Nations General Assembly of 2005 (WCNDR) called upon all Governments to establish national platforms or focal points for disaster reduction, encouraging Governments to strengthen platforms where they already existed. In Botswana the National Committee on Disaster management and the National Disaster Management Technical Committee acts as the above platform. Disaster management is coordinated by the National Disaster Management Office (NDMO) which is within the President's Office. At village and district levels, disaster committees report to the NDMO. There is no legal instrument on disaster management in Botswana but the office of the President has overall responsibility for disaster management with disaster committees at all levels. The HFA outlined 5 key priority areas that international countries agreed to adopt to build better resilience of communities to natural disasters. The progress reports show that Botswana is doing well with the country's Disaster management policy providing guidelines for all the sectors and institutional levels to implement disaster preparedness and emergency response. However the lack of budget allocations means that the NDMO is under resourced and lacks the capacity to actively engage private sector community and non – governmental organizations. Where progress has been enormous such as the awareness campaigns and training programmes coordinated by the NDMO throughout the country, there has not been tools and sufficient resources to assess effectiveness. Overall Botswana has built a good foundation that can be continually improved on to build resilience towards natural disasters as well as reducing hazards and vulnerability; ultimately reducing the disaster risks.

INTRODUCTION

Botswana is a land locked country in Southern Africa, sharing borders with South Africa, Zimbabwe, Zambia and Namibia. It is a semi arid country with a sub tropical climate characterized by recurrence of drought and very low rainfalls. Of the land area 0.7% has a tropical wet and dry savanna climate (Northern parts), 98.5 % has a semi arid/steppe climate. The country is relatively flat lying at an average of 900m above sea level. Of the population 99.4% live in a semi arid steppe climate while 0.6% live in arid/ desert climate. Botswana's population is estimated at 2.1 million with a poverty rate of 20.7%, per capita income of \$3 500 and an HDI rank of 119 as at 2013 (2)

Botswana is vulnerable to a range of disasters occurring with varying degrees of intensity and regularity. The disasters encountered are principally droughts, however; there are also veld fires, floods, epidemics, transport and industrial accidents, chemical spills and influx of illegal immigrants (4). The United Nations, in its World Conference on National Disaster Reduction (WCNDR, 2005) reported that the impact of disasters is much more severe on those who are already suffering due to poverty and diseases. This means that African countries, including Botswana, have to channel resources towards building of safer communities and increasing the resilience towards disasters and hence reducing the disaster risk (7).

The level of disaster risk is established by assessing the hazards facing a particular community, in relation to the resilience and vulnerability of those potentially affected. In general, the disaster risk is directly proportional to the hazard and vulnerability, but indirectly proportional to the resilience (see summary in Appendix 1). The planning stage of reducing disaster risk hence works by:

- Reducing the hazard level by either changing its severity or the probability of it ever occurring at all
- Decreasing vulnerability by changing the physical, social, economic or environmental characteristics of the receiving entity
- Building greater resilience against disasters by increasing the capacity of the affected community through increasing physical, social, institutional and economic means as well as collective attributes such as leadership and management (6)

Disasters cause a lot of trauma, sadness, depression and suffering for those who survive them. Not only do people have to deal with losses of the ones they love, but many a times they are displaced from their homes and they lose property. Coupled with the chances that a good number of the survivors do not insure their property, comes the dynamics of some insurance companies not compensating losses due to natural causes, hence the survivors suffer losses that may never or may take long to recover from.

Disaster risk reduction is influenced by a number of factors, such as climate change, economic growth, regional growth and development etc. Botswana realises that a plan to reduce disaster risk cannot be implemented in isolation, hence the National development is carefully designed taking into cognisance international agreements and guidelines. One such agreement is the HYOGO Framework for Action 2005-2015 by the United Nations International Strategy for Disaster Reduction (UNISDR). The UNISDR was established in December 1999 after realising the need that the United Nations (UN) needed to have a department concentrating on reducing disaster risk. In a World Conference on Disaster Reduction that was held on 18 -22 January, 2005 in Kobe, Hyogo, Japan; the Hyogo

Framework for Action 2005 – 2015 ISDR was established. This was a 10 year plan explaining, describing and detailing the requirements from different sectors and actors to reduce disaster losses. The goal was to substantially reduce disaster losses by 2015, through building the resilience of Nations and communities to disasters. The five priorities for action are as follows:

- Ensure that disaster risk reduction is a national and a local priority with a strong Institutional basis for implementation
- Identify, assess and monitor disaster risks and enhance early warnings
- Use knowledge, innovation and education to build a culture of safety and resilience at all levels
- Reduce the underlying risk factors
- Strengthen disaster preparedness for effective response at all levels (8)

DROUGHTS

Botswana is a land locked semi arid country with a sub tropical climate characterized by recurrence of drought and very low rainfalls. Of the land area 0.7% has a tropical wet and dry savanna climate (Northern parts), 98.5 % has a semi arid/steppe climate. Of the population 99.4% live in a semi arid steppe climate while 0.6% live in arid/ desert climate (5).

Agriculture wise the country mainly depends on cattle farming, the economy is driven mainly by an international beef market including South Africa and the European markets. There is very little commercial crop production and most crops are produced for subsistence or for sale locally.

Drought inevitably puts a strain on the scarce water resources resulting in loss of lives for cattle and other reared animals as well as human beings. Since 1981, Botswana has been experiencing countrywide droughts. Between 2002 and 2008, almost a billion pula (approximately one million USD) in over six thousand projects to reduce the effects of drought on the affected populations. The programmes covered primary school feeding and vulnerable group feeding with enrolments of more than two hundred and thirty thousand individuals (6).

FIRES

The largest parts of Botswana are covered by the Kalahari desert, however when you take a closer look at the precipitation figures, the area qualifies more as a semi desert changing into a hilly steppe area in the North(5). During the summer months of October to March, temperatures get very high, even up to 40°C, and even during the night time, temperatures may not fall to below 22°C. Vegetation is mainly savanna, grass, shrub, tree, dry deciduous forests, aquatic grassland (especially in the northern parts of the country) and woodland. The country is prone to fires and recent statistics prove that large areas have been burnt; the 2007 - 2008 fires destroyed approximately 14 million hectares of land, with about 12 million hectares in 2010 and 15 million hectares in 2011 destroyed by bush fires causing loss of lives, wild animals and livestock.

About 16% (58 000 hectares) is national parks and forest reserves, thus Bush fires have to be carefully monitored and planned for as the consequences of such are catastrophic. There is also a risk of structural fires, and these occur mainly in the two largest cities, Gaborone and Francistown.

FLOODS

Due to the relatively poor town planning and drainage, floods occur during the rainy seasons of October to March, however because of a generally low rainfall pattern; these are rarely serious enough to be classified as disasters. However the floods that occurred between 1999 and 2000 are the worst to have occurred in living memory as they affected 23 administrative districts, villages and towns causing loss of life and suffering, and extensive damage to infrastructure. The damaged roads meant that it was difficult to supply food and clean water to affected communities. These floods destroyed five million Pula (more than five hundred thousand United States Dollars) worth of private and public property. Statistics available in the National Disaster Management Office show that thousands of people are affected by storms and floods every year (6).

ANIMAL DISEASES

Botswana is bound by South Africa on the South and South east, Zambia on the narrow strip of North, Zimbabwe in the North east and Namibia in the West. Due to borders that did not have clear lines of demarcation and populations with relatives both side of the borders, movement and hence chances of cross infection between countries is a real danger. In 1995, there was an outbreak of the Contagious Bovine Pleuro –Pneumonia (CBPP) in Ngamiland, this resulted in the eradication of more than three hundred thousand cattle at a cost of more than two hundred and seventy million Pula (over twenty seven million USD) (6). Botswana has since put up laws forbidding unregulated importation of meats/ animals between its neighbours

AIMS/ OBJECTIVES

This project aimed at outlining the nature of disasters that could affect Botswana, highlighting the factors affecting vulnerability.

The project also aimed to show the status of preparedness; highlighting the responsible authorities and measures that are in place to deal with the same.

METHOD

The statistics on natural disasters and their effects were sought for, mainly from the Botswana Central Statistics Office and the National Disaster Management Office.

Information outlining the responsible departments and the strategies they have in place to mitigate and deal with disasters was also obtained

Progress reports on implementation of the Hyogo Framework for Action were obtained from the United Nations

RESULTS

In 1993 the Botswana Government established a National Committee on Disaster Preparedness (NCDP). This followed the United Nations International Decade for reduction of natural Disasters. The NCDP had two main mandates, which were increasing coordination and also improving effectiveness of the management of natural disasters as well ensuring effective cost utilization in management of natural disasters.

However in 1996 the Government formulated a National Policy on Disaster management, after realizing that Botswana was vulnerable to other disasters and not just drought alone. Hence there was need to give equal focus to all disaster management elements (that is prevention, mitigation, preparedness, response and recovery). The Objectives of the policy were as follows:

- Establishing and maintaining systems to deal with all (actual and potential) disasters
- Integrating these systems into normal development activities at local and national levels
- Establishing a set of working definitions and outlining disaster management responsibilities
- Creating a framework that facilitates preparation of plans and legislation for effective implementation and legitimacy of the programmes for disaster management

In 1998, the National Disaster Management Office (NDMO) was established; this was put in the Office of the president having the overall responsibility of Managing disasters. Section 17 of the Constitution of Botswana grants the president powers to declare a state of emergency. This is

complemented by the Emergency Powers Act 22:04 which grant the president powers to make regulations, subject to approval by parliament, when a State of Emergency has been declared.

The NDMO ensures a nationwide state of disaster preparedness and capacity to deal with any eventuality. It also facilitates the integration of disaster management into the policies and programmes of different sectors.

Botswana takes the commitment to the HFA: 2005-2015 UNISDR seriously. And the official progress reports are summarised below (9):

Priority 1 - Ensure that disaster risk reduction is a national and a local priority with a strong Institutional basis for implementation

Table shows the level of progress achieved outlining the successes and the challenges faced in implementing priority 1

Successes	Challenges
Sector strategies and plans available in the form of the National disaster risk management Plan of 2009	No DRR in development plans and strategies at National level
780 000 USD allocated to disaster proofing post disaster reconstruction	No common country assessments
	No climate change policy and strategy 0% allocated from National budget and local Governments and also nothing for standalone DRR investments
	No legislation in place

Priority 2 - Identify, assess and monitor disaster risks and enhance early warnings

Table shows the level of progress achieved outlining the successes and the challenges faced in implementing priority 2

Successes	Challenges
Availability of National multi hazard risk assessment to inform planning and development decisions	There are no agreed national standards for multi hazard risk assessments
Disaster losses are systematically reported, monitored and analysed	There are no programmes and projects addressing trans – boundary issues

Risk prone communities receive timely and understandable warnings of impending hazard events	No action plans addressing trans- boundary issues
Local level preparedness with good communication systems and protocols	
Regional and sub – regional strategies and frameworks as well as monitoring and reporting mechanisms	

Priority 3 - Use knowledge, innovation and education to build a culture of safety and resilience at all levels

Table shows the level of progress achieved outlining the successes and the challenges faced in implementing priority 3

Successes	Challenges
Public education campaign on DRR do reach risk prone communities	There is no National disaster information system that is publicly available
Public education campaigns and availability of information on DRR practices at community level	The DRR is not included in Primary and secondary school curricula, though it does feature in some programmes at University level
	There is no funding, and no research programmes and projects nor studies on economic costs of DRR

Priority 4 - Reduce the underlying risk factors

Table shows the level of progress achieved outlining the successes and the challenges faced in implementing priority 4

Successes	Challenges
Investment in drainage infrastructure in flood prone areas	No investments to reduce the risk of vulnerable urban settlement
There is provision of safe land for low income households and communities	No slope stabilisation in landslide prone areas

There is assessment of impact projects such as dams, irrigation schemes, highways, mining etc on disaster risk	
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Priority 5 - Strengthen disaster preparedness for effective response at all levels

Table shows the level of progress achieved outlining the successes and the challenges faced in implementing priority 5

Successes	Challenges
There is training and mock drills in schools and hospitals for emergency preparedness	There are no policies and programmes for school and hospital safety at local and national levels
There are contingency plans, procedures and resources to deal with major disasters	There are no catastrophe insurance facilities and catastrophe bonds
There are search and rescue teams as well as stockpiles of relief supplies	
There are secure medical facilities with properly outlined triaging criteria	
There is availability of trained human resources	

DISCUSSION

Botswana has managed to lay a solid foundation that can be built upon in a bid to ensure disaster preparedness. Putting the NDMO in the Office of the President means everything can be coordinated by the highest office in the land. Routine progress reports given to show progress in implementing the HFA – UNISDR 2005-2015 show that the country is committed to meeting the requirements and creating a safer and more resilient nation to natural disasters.

The reports show that substantial achievements have been attained, though there are recognized limitations in some key areas most notably financial resources in budget allocations and operational capacities. The NDMO is under resourced and hence lacks the capacity to encourage active participation of other sectors such as the private sector and non – governmental organizations. The other challenge faced is that there is no specific legislation that supports implementation of disaster risk reduction in the country.

In 2008, The Government of Botswana did commission study on hazard vulnerability and risk identification, this went a long way in highlighting the actual and potential disaster threats

throughout the country. However this study only went as far as district and urban levels, and did not incorporate risk data at village and community levels (9).

The NDMO collects data on disaster impacts, with the help of District Management Committees. This data is further analysed by the Central Statistics Organization with the information disseminated throughout the country. However there is still lack of modern data collection and compilation systems



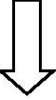





With regards to early warning systems for major disasters, the Meteorological services department works in conjunction with national Disaster Management Office to issue early warnings regularly to the communities. Apart from the main information broadcasters of television, radio and newspapers; mobile phone sms are also used to disseminate early warning information to subscribers of all the three networks (Mascom, Orange and Be- Mobile). The NDMO has also conducted nationwide campaigns on multiple hazards and vulnerability in different communities. District level Officials have also been trained in DRR and Emergency Management planning. However there has been a lack of tools to determine the effectiveness of such awareness campaigns (9).

CONCLUSION

Overall Botswana has built a good foundation that can be continually improved upon to build resilience towards natural disasters as well as reducing hazards and vulnerability; ultimately reducing the disaster risks. A sound post 2015 plan is also needed to consolidate the gains of the past decade, and improvements on funding of the NDMO projects and activities and putting up of legislation to empower and back up their activities will definitely take the country to new heights of disaster preparedness.

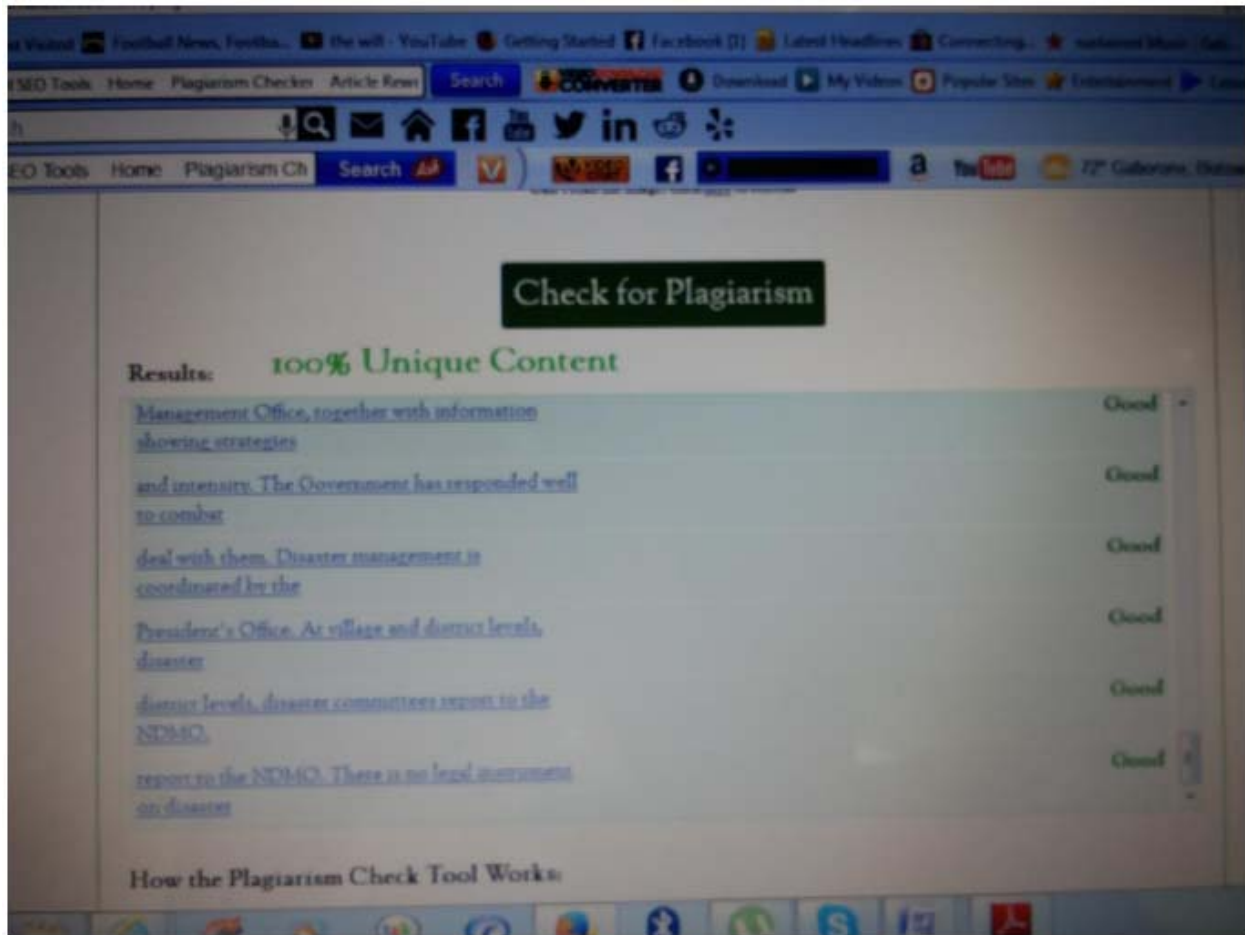
APPENDIX

1. Table showing the relationship between disaster risk, hazard, vulnerability and resilience

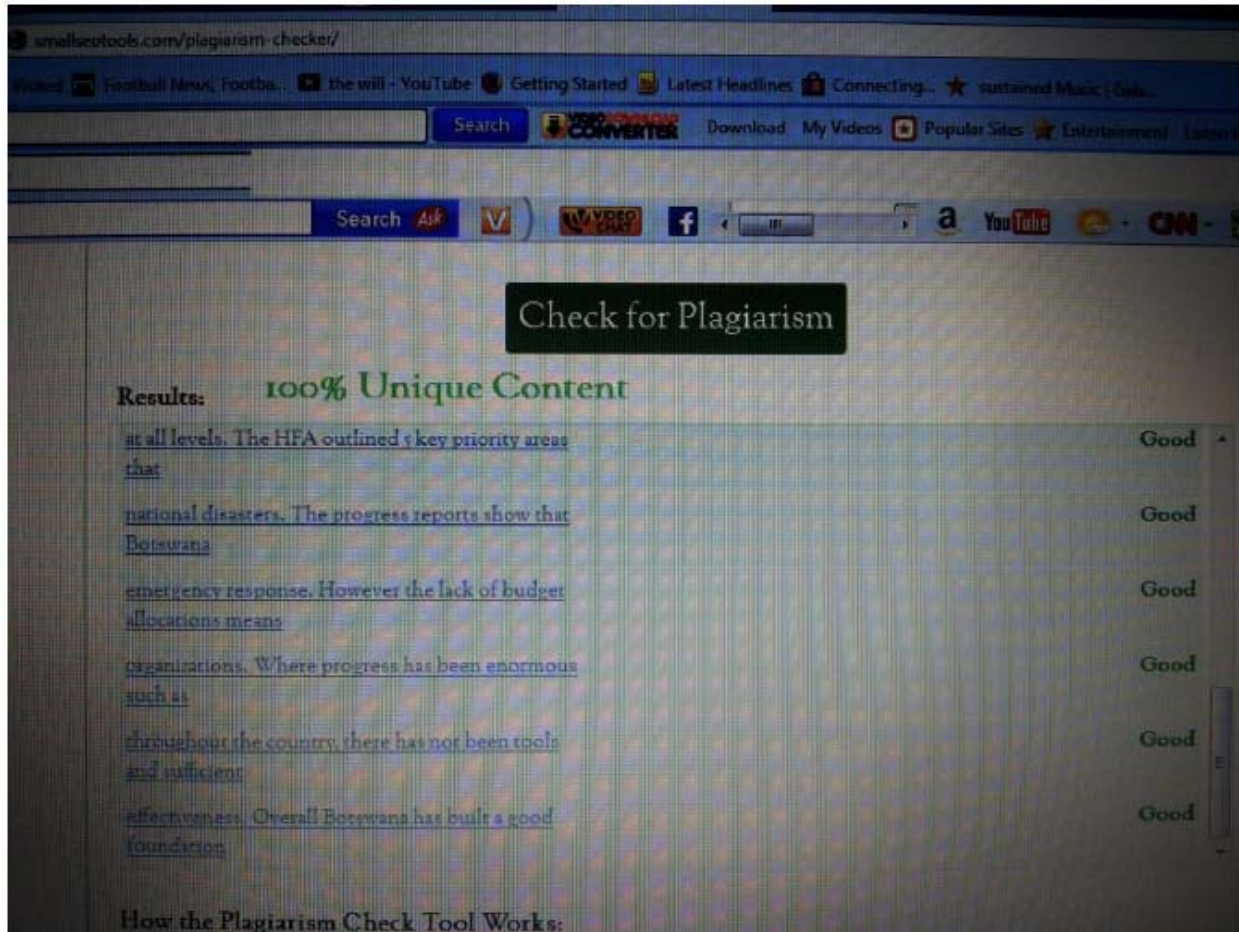
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HAZARD 	VULNERABILITY 	RESILIENCE 	RISK 

Risk = [hazard X vulnerability/resilience]

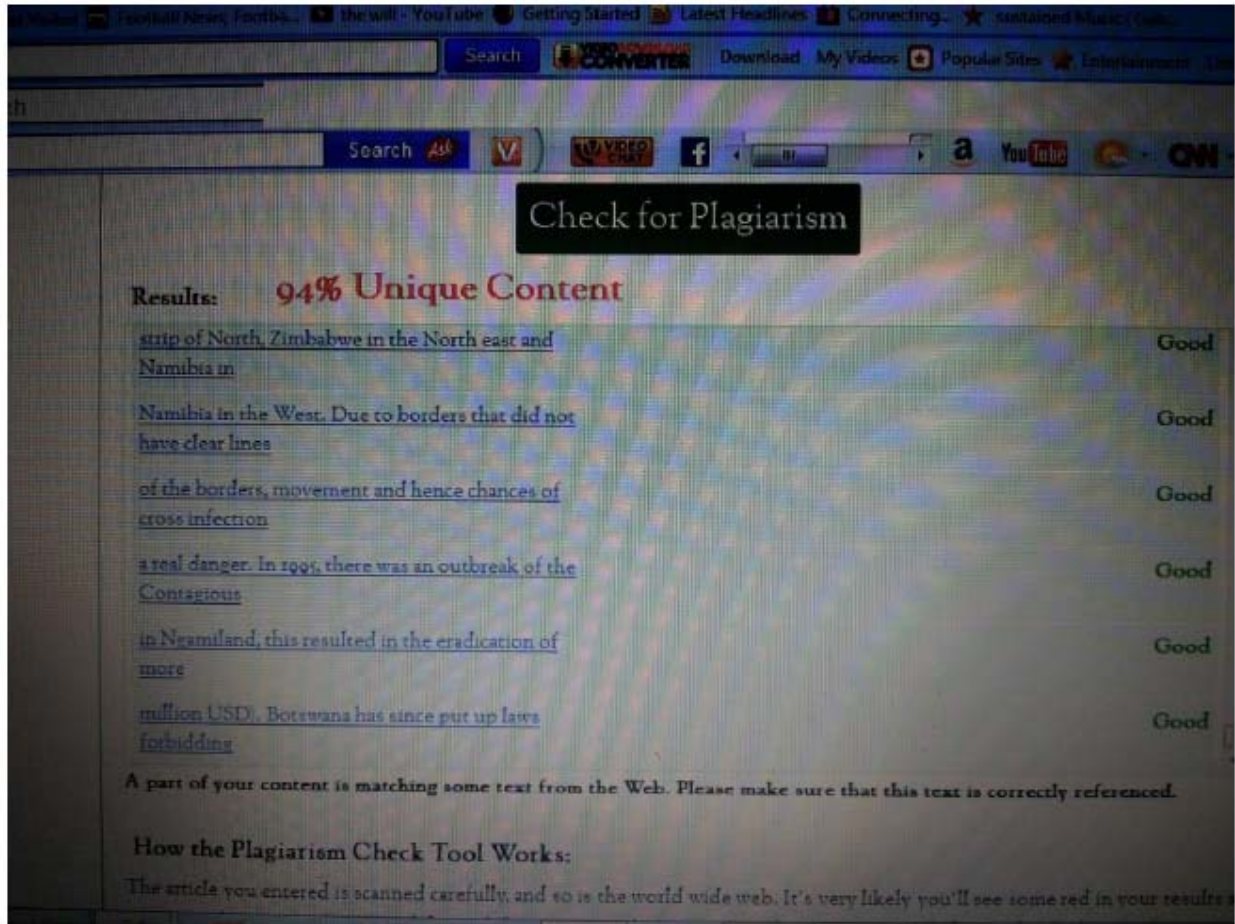
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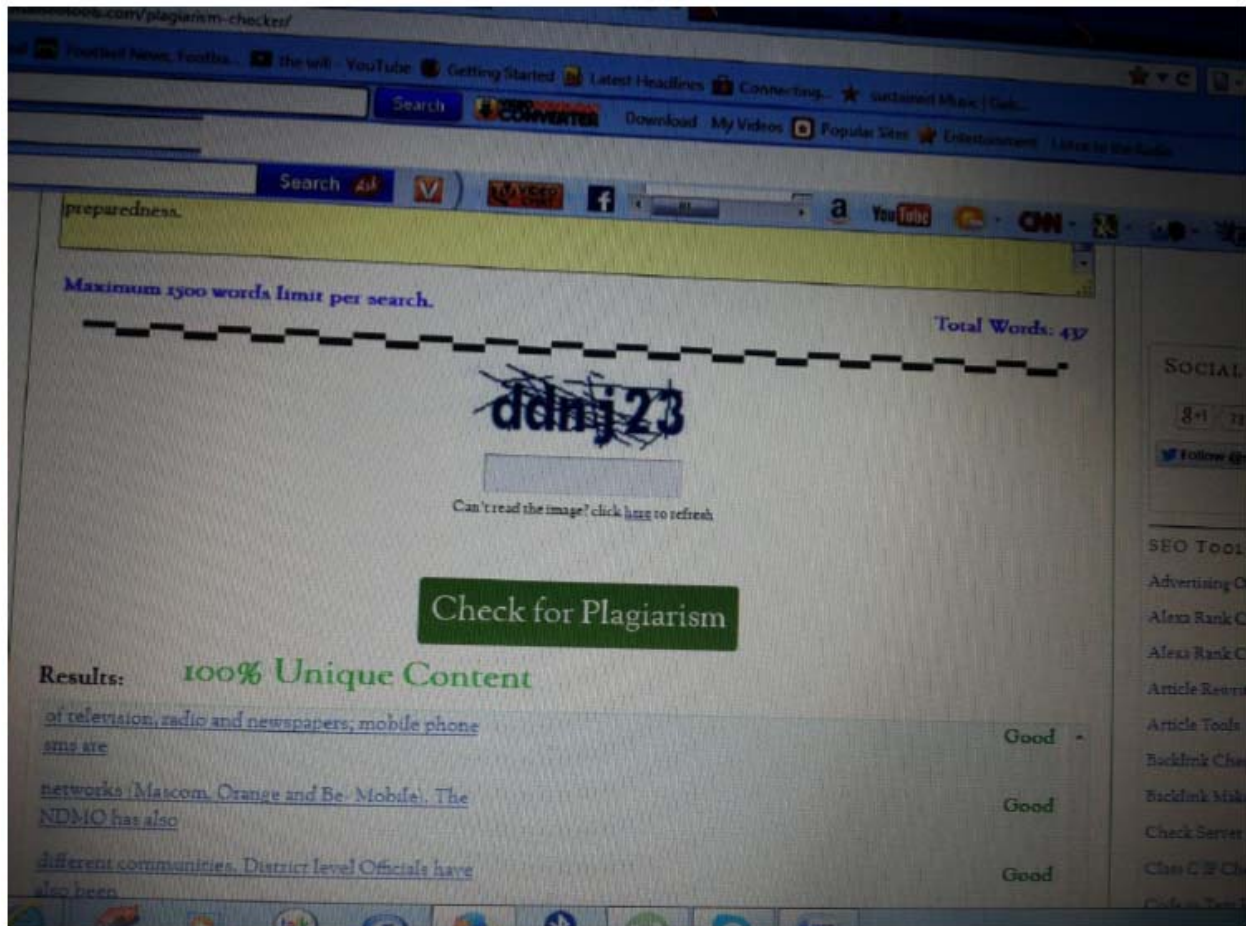
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4. Diagram C Showing picture of the performed self plagiarism check on Introduction



5. Diagram D Showing picture of the performed self plagiarism check on Discussion



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