



2010

2010 FIRE REPORT



1.0 Introduction

In as much as fires play the vital role of in biocycle of Zimbabwe's natural resources, they also have devastating effects on the ecosystem. Fires are the oldest and fastest method of clearing land for agricultural use, used by communities all over the country. They also cause a much needed natural disturbance to the ecosystem which then prompts natural regeneration. The floor space is cleared for fauna that prefers more open land space for habitat or survival. But bush fires are also a threat to forests and woodlands of Zimbabwe, causing destruction to both flora, fauna, human lives and property. This results in a massive decline in both the quality and quantity of forest and woodland resources in the nation. This report, therefore, gives an account of the fire incidences that occurred and intervention measures made by the Agency nationally during the fire season which runs from the beginning of July to October 2010.

2.0 Causes of uncontrolled fires in Zimbabwe

Besides the fact that Zimbabwe has a conducive climate which includes a long dry season spell, and that the miombo woodlands provide high fuel loads, human activity is the major cause of fire. About 40% of the nation's natural forest and woodlands are in the communal area, in which most of the country's population resides. On the domestic scene, flames are used for cooking, lighting and warming, while for livelihoods, uncontrolled fires are used as a hunting technique, and even for illegal gold panning. Another reason for fires in public areas can be attributed to the land use practices and system for livelihood sustenance. Most land use systems in Zimbabwe are susceptible to wild and man made fires, which have devastating effects (*Figure 1*): burning was to clear the forests and make way for agricultural land, for the management of grazing pastures, activities like honey gathering, and maintaining open grasslands.



Figure 1. The devastating effects of a fire on a citrus plantation in Igava, Mashonaland East

Zimbabwe's uncontrolled fires in 2010 were a result of:

- 1) Failure to control a lit fire;
- 2) Honey gathering;
- 3) Clearing a field for agricultural purposes. This was most prevalent in the Mashonaland West province;
- 4) Dropping ashes and failing to extinguish the fire;
- 5) Lighting a fire during construction of a fire guard;
- 6) The lack of fire guards/ suppression measures;
- 7) Fire from the friction of the railway and the train;
- 8) Deliberate lighting of forest in order to dry the trees so that they are easier to cut for firewood and
- 9) Cattle rustlers, for instance in Matabeleland North, would deliberately set pastures ablaze in order to get the communities to sell their beasts. This was so because the carrying capacity of available pastures had been exceeded, so this would be done in the name of sustainability.

Earlier on in the year the Agency, using Geographical information Systems technology through satellite imaging, had come up with a fire prediction based on vegetation that was

there on the 11 of March 2010 as shown in *Figure 2*. This model predicted the extreme risk of fires to be in Mashonaland West. This positively correlates with the fire incidences recorded on the 31st of October.

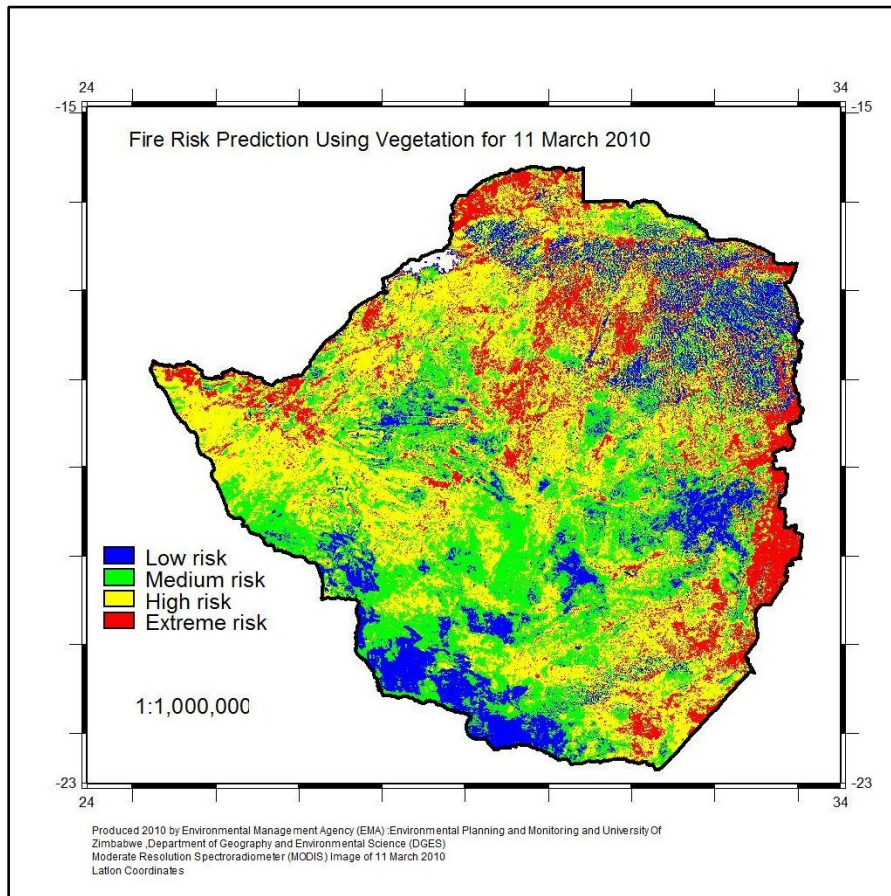


Figure 2 *Fire Risk Modelling*

The Fire risk Model predicted that 41.4% percent of the country was in High risk of fires and 16.4 percent of the country was in extreme risk as illustrated in *Figure 3*.

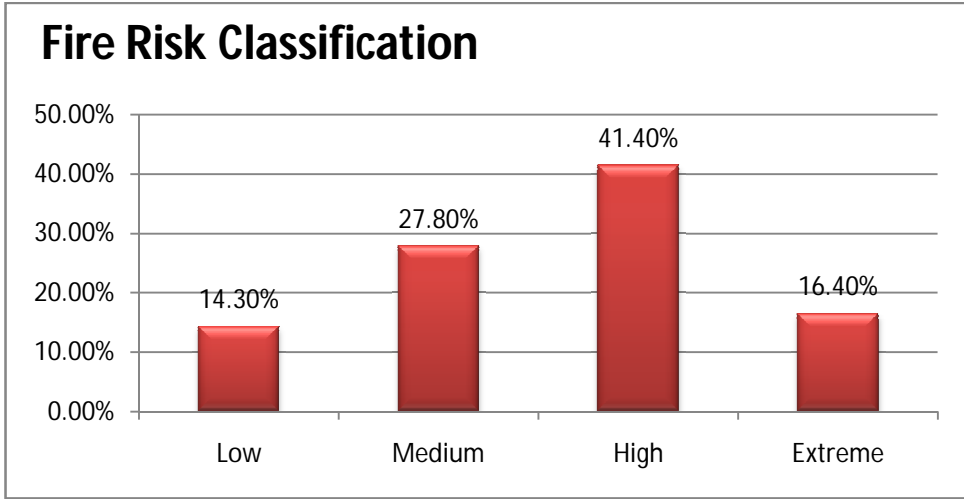


Figure 3: Fire Risk Classification for Zimbabwe in 2010

3.0 Fire Incidences for 2010

As of the 31st of October 2010, a total of 9361 fire incidences had been experienced countrywide (see figure 4) since the 1st of July 2010. Mashonaland West province had the highest number of fire incidences followed by Masvingo and Mashonaland East. This is because these provinces had a lot of biomass during the fire season. The numbers of incidences were also very high because fire guards were not in place in the appropriate places to prevent the spread of fires.

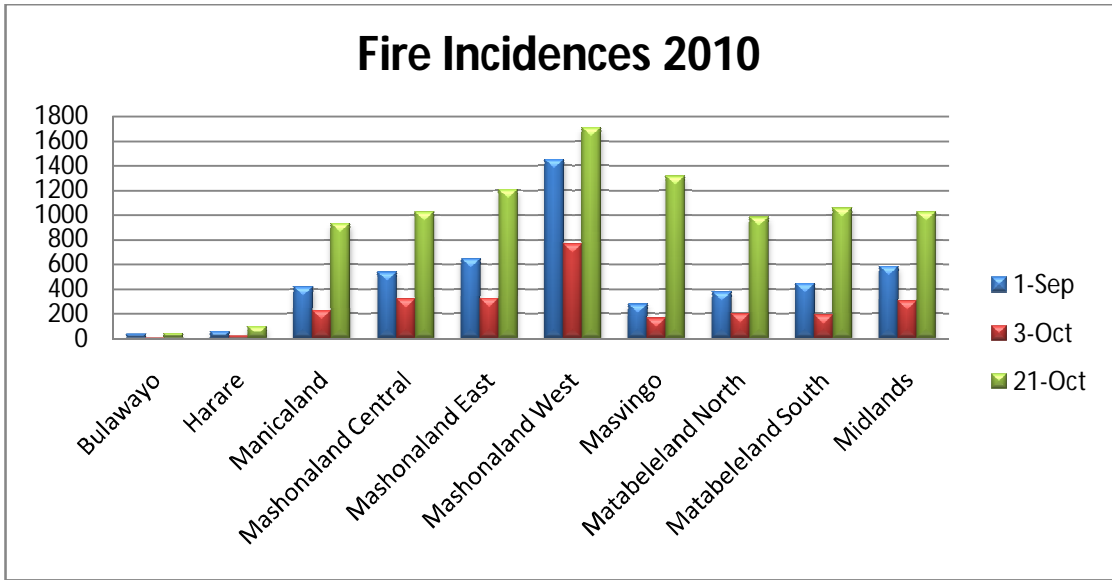


Figure 4: Fire incidences recorded per province

The least number of fire incidences were in the urban areas of Bulawayo and Harare. This is because there is much less land to burn and the populace is not that much reliant on fires for

warmth and domestic use as in the rural areas. The average fire incidences were 936 per province for the period under review. The highest number of fire incidences was recorded in Mashonaland West, with the least (excluding Bulawayo and Harare urban) being Manicaland. This can be attributed to the fact that the highest number of fire committees was trained in Masvingo and the local leadership and community were out in full force to address fire related issues.

4.0 Impacts of the 2010 fire incidences

Fires cause heavy financial losses and damage to humans, flora and fauna. Fires destroy grazing pastures contributing to loss of production in the livestock sector, which leads to poverty as many rural communities are pastoral farmers. The frequency of fires in an area results in severe land degradation, which leads to poor harvests, causing famine, and starvation, malnutrition and eventually disease. This section gives an account of the impacts of the 2010 fire season in Zimbabwe.

4.1 Hectares Lost

By 31 October 2010, the total hectareage lost was 1152413.1070 ha, which was 21.2% higher than the 950905.215 ha lost in 2009. The opposite would have been expected considering the awareness campaigns that were invested in by EMA and all other concerned organisations. The larger hectareage lost to fires in 2010 could be attributed to:

1. More negligence on the part of the communities for instance people leaving fires unattended in homes while children sleep, or at bus stops after waiting for a bus early in the morning or late at night.
2. The 2010 biomass this year was a lot more than that of last year and therefore provided more fuel load.
3. It may also be that the number of intentional fire starting incidences was on the increase this year. For instance, some individuals wanted to settle long standing disputes, by burning the other's pasture to scare them off since their livestock would be greatly affected.

Figures 5 below graphically compare the area of Zimbabwe which was burnt in the year 2009 and 2010.

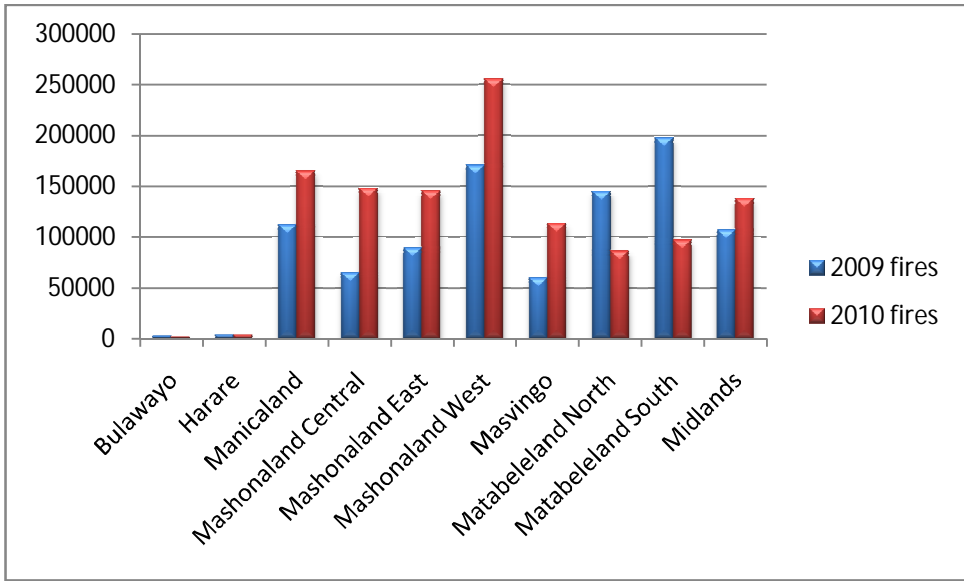


Figure 5: Comparison between 2009 and 2010 Statistics

From the graph above, Bulawayo, Harare, Manicaland, Matabeleland North and Matabeleland South provinces lost less hectareage to the fires in 2010 as compared to their 2009 statistics.

In terms of areal extent, Mashonaland West was burnt the most 255320.566hectares of land were affected. The least affected, excluding the two urban provinces of Bulawayo and Harare was Matabeleland North, which lost 85849.304 hectares. The average Hectareage burnt per province was 115241 hectares for 2010 while provincial average was 95091 hectares for 2009.



Figure 6. Bare land, exposed soil, struggling shrubbery in Ruzawi,Marondera.

The greatest fire impact was recorded in Hurungwe with a total of 72864.0070hectares lost to fires. Kariba urban recorded the least hectarage lost to fires throughout the country of 6.6620 hectares. 2009 most affected district was Gwanda with 72 273ha burnt and the least affected was Norton with 98ha burnt. The average Hectarage lost per district, was 19 869for 2010 and 13 393ha for 2009.

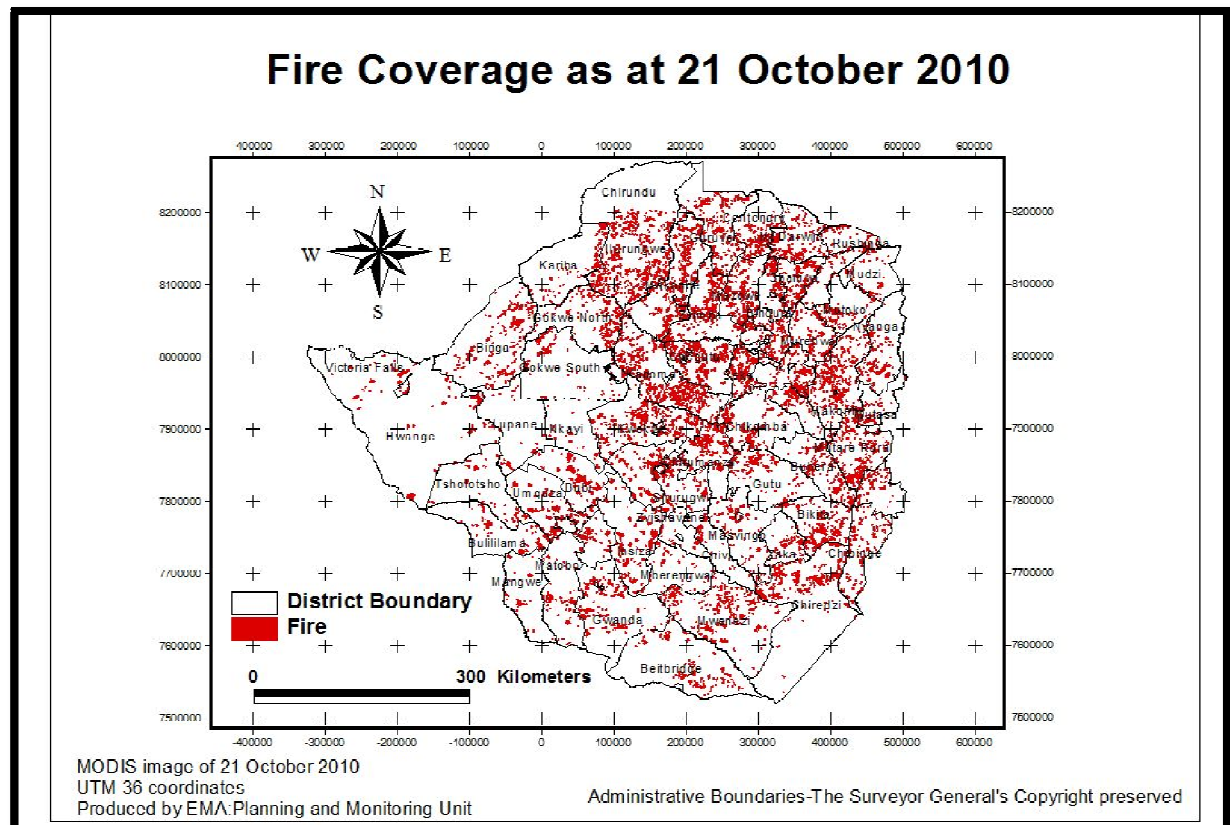


Figure 7 Fire coverage as at 21 October 2010 (due to cloud coverage clear satellite images for fire coverage on the 31st of October could not be obtained.)

4.2 LIVES LOST

Nationwide 21 deaths were recorded. The highest number of fatalities, was recorded in Mashonaland Central where 7 lives were lost of which 4 were claimed at once. The 4, a woman with her 3 daughters were burnt to death at Zanadu Farm, Concession, in the Mazowe District. A 2 year old boy, and another of 2years 3months were also burnt to death after a fire was deliberately started in Chipinge on the 4th of October. A 5year old was burnt to death at Hylewn Farm in the Hurungwe District, an incident which left 22 families homeless. In Karoi

a 70year old woman was also burnt to death. A total of 10 victims of veldt fires were hospitalised during the 2010 fire season.

4.3 INFRASTRUCTURE LOST

Various types of infrastructure were damaged in the country, These include forestry plantations in Manicaland, citrus orchards in Mashonaland Central and Mashonaland West whose total was valued at US \$338 500, seed maize, and Zimbabwe Electricity Supply Authority (ZESA) poles were also burnt .This was valued at about US \$205 000.00.included in this cost are Matopos National Museum which was gutted down by fires and Matopos Motel. A total of 20 elephants at Debshan farm in Shangani, Insiza District. In Chipinge 600 chickens and a small Pine Plantation were completely destroyed. In Honde valley, after a fire crossed over into Zimbabwe from Mozambique, 2000ha of natural forest, 12 huts, 4 goats and US\$ 7000 worth of property were destroyed. 3 donkeys, 15 herd of cattle and 61 huts were also gutted down by fire nationwide.

5.0 INTERVENTIONS BY THE AGENCY

In 2010,the Agency embarked on an extensive campaign of veldt fire suppression and management. The national campaign was launched by the Minister of Environment and Natural Resources Management, Honourable F.D Nhema on the 14th of May 2010 in Insiza district of Matabeleland South. This was followed by Provincial and District fire awareness launches. A total of 470 awareness campaigns were held during the period under review with the Minister being the guest of honour on 30 occasions.



Figure 8. The Minister addresses nutritional garden project committee on fire management in Rushinga.

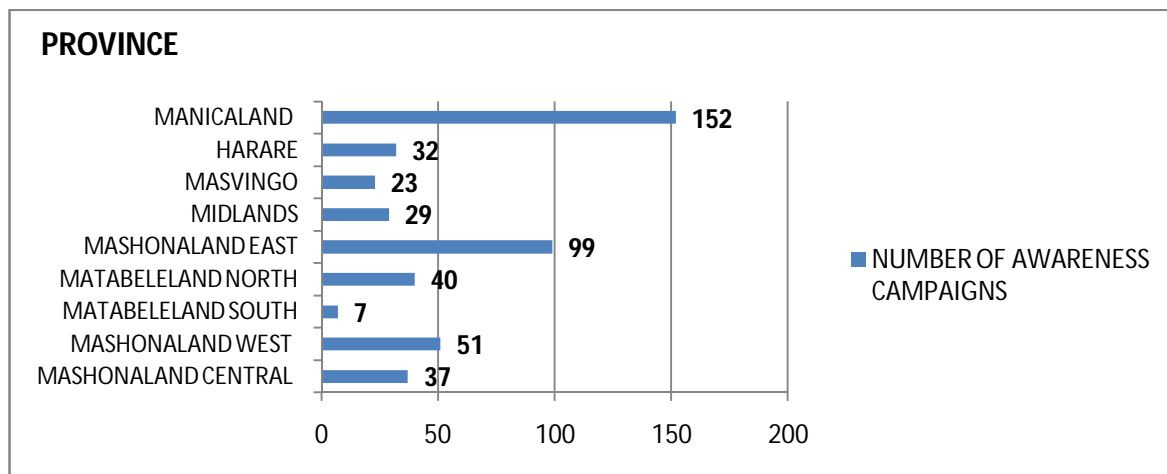


Figure 9. Number of Fire Awareness Campaigns by Province.

172 fire communities were trained at district level and Masvingo had the highest number, with 30 committees being trained (*Figure 10 and 11*) while Matebeleland South had 4, the least number of trainings.

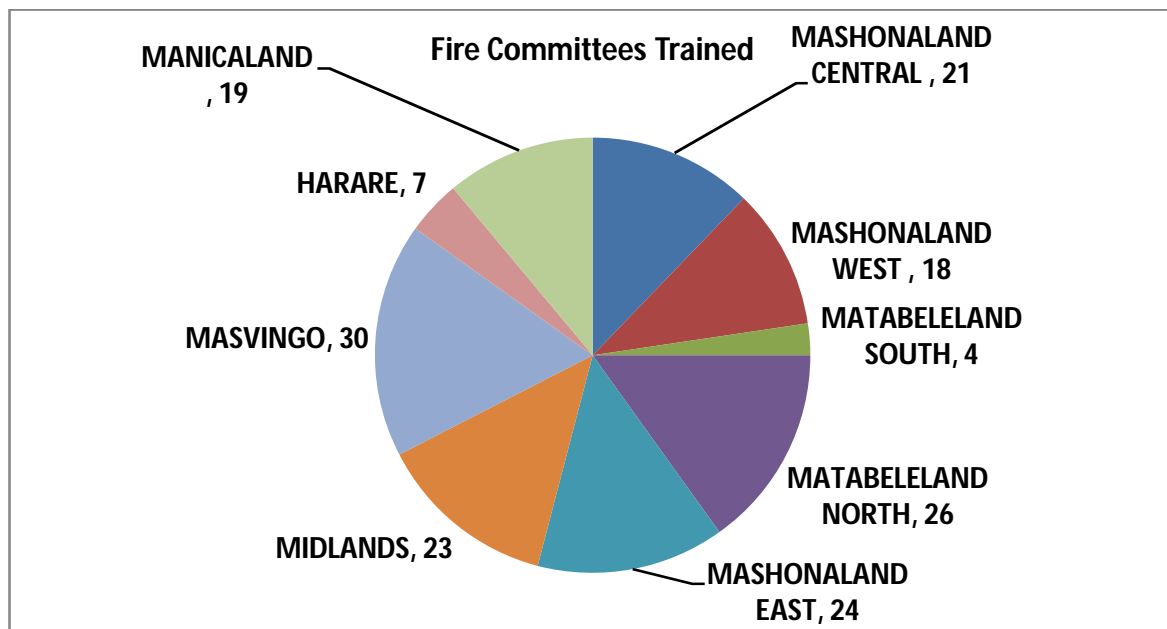


Figure 10. Number of fire committees trained by province.



Figure 11: Community fire fighting team puts out a fire in Gutu.

The general impact of these campaigns was increased awareness by the general public on veld fire prevention measures. This was noticed by the level of participation and answers given by the community during the Minister's quiz shows (*Figure 12*).



Figure 12. Women participating in the Minister's Quiz Show in Chikomba district.

Significantly, cooperation and communication by trained fire committees and environmental monitors has improved as indicated by their reports through text messages (*Table 1*).

Province	Number of text messages
Mashonaland West	6
Masvingo	4
Manicaland	6
Midlands	12
TOTAL	28

Table 1. Number of texts received by provinces.

School debates were also held throughout the country involving eighty (80) schools. The topic for discussion was *“Environmental education and awareness, not law enforcement and penalties is the answer to the reduction of uncontrolled / forest fires in Zimbabwe”*. The provincial winning schools converged for the Southern and Northern regional competition and Luveve High and Convent Girls High emerged winners for the Southern region competition, while St Faith High School and Goromonzi High emerged victors for the northern region competition.



Figure 13. Proceedings at a Schools Debate competition at the Ministry Board Room.

The finals were held at Girls High School. Goromonzi High school scooped the first prize from the affirmative side while Dominican Covent took the first prize from the non-affirmative side. Both wining schools walked away with book vouchers worth US\$400 courtesy of the British Council. Goromonzi got a floating trophy while Dominican Covent got a floating shield

Participating schools did not only show a lot of interest in such environmental debates but also produced well researched presentations evidenced by quotations on veld fire issues from the newspapers like, Herald, Sunday Mail, Kwaedza and Manica Post.

The Agency intensified operations to investigate fire management measures and fire incidences. A total 750 orders were served to land owners before the fire season to construct fireguards. This was meant to reduce the total hectarage lost to fires. Manicaland served the highest number of orders 250. Land owners without adequate fire suppression measures were prosecuted. In total 470 tickets were issued. Mashonaland West issued the highest number of tickets which came to 198, followed by Mashonaland central at 79, with Matebeleland North issuing 41 tickets. Other provinces issued less than 20 tickets each. The Agency also prosecuted institutions which did not have adequate fire suppression measures.

The Agency worked closely with other institutions which include local authorities, Zimbabwe Republic Police (ZRP), Forestry Commission, Courts, and other government departments and structures in managing veld fires. There was increased cooperation between ZRP and EMA with regards to environmental law enforcement. This cooperation was reflected by a total of 140 fire related cases being handled by ZRP, magistrates and 29 by traditional courts. ZRP, Forestry commission also aided in educating communities on veldfires management. Constituency leaders were encouraged to inform populace about veld fire management including suppression measures and fire fighting techniques. Fire guard construction demonstrations were done so as to capacitating fire committees and communities.

6.0 Challenges

Some key stakeholders are not instrumental in strengthening existing National plans and programs for forest management, inventory and monitoring. Laws are very difficult to enforce, especially in the communal areas because the land use practices and system for livelihood sustenance. Susceptibility is due to the fact there is need to clear the forests and make way for agricultural land, for the management of grazing pastures and maintaining open grasslands, and activities like honey gathering which are a source of livelihoods. Fire is also a savannah ecosystem management technique (Figure 13).



Figure 13. A hungry fire ravages through a savannah forest in Kadoma

7.0 OPPORTUNITIES

- There is need for a great amount of research into fire management for the ecosystem to be sustainably handled.
- Measures need to be taken to integrate mapping and knowledge, that is scientific and traditional knowledge systems, which strengthen monitoring and assessment.
- Protected areas need continuous maintenance.

- The Capacity of communities and all other stakeholders' needs to be increased, and partnerships should be created and strengthened with neighbouring countries. The latter would have come in handy when a fire occurred in October and crossed onto the Zimbabwean side from Mozambique. If the "No man's Land" had been fire guarded, the fire might have died down and not burnt 12 huts, 4 goats, \$US 7000 worth of property and burnt 2000ha in Honde valley.
- Strengthening the rule of Forest law and governance by encouraging information sharing, improving participation in international fora and international agreements, will go a long way in ensuring the sustainable development and ecosystem management of the nation.
- Institutionalising the responsibility for burning within communities, would be advantageous as more restrained and accountable patterns of fire emerge because of a sense of ownership.
- The use of remote sensing in monitoring fires improves data handling and analysis. Geographical Information Systems can analyse fire data and trends in relation to land use, forest cover, forest type, climate and weather, soil types and any other data sets to assist in the development of strategies for management of fires.

8.0 RECOMENDATIONS

1. It is proposed that in order for environmental law to be taken more seriously courts should pass deterrent and punitive judgments.
2. It is proposed that competition for committees with the best fire fighting and suppression techniques be held and awards be given as a way of encouraging others to follow suit.
3. Capacitate our officers to respond to fire incidences promptly, possibly by air with assistance from police.
4. Trained fire fighting committees should be capacitated by providing them with fire fighting equipment.
5. More Environmental Monitors should be identified for each ward, trained and adequately resourced to ensure effective communication.

9.0 Conclusion

Education and awareness on how to suppress and fight fires has been ongoing over the years, but what needs to be emphasised more are the devastating impacts of fires; not just the loss of property, but the impact on the ecosystem for future generations: how fires accelerate land degradation, soil erosion and thereby reduce land productivity. With Zimbabwe's recurring droughts and climate change the situation may become rather desperate in terms of livelihoods sustenance if the communities do not begin adapting to climate change by reducing the use of fires for land clearing. Stakeholder participation should improve by having them taking an active role, especially the local authorities and traditional leaders. At the moment there are few reports of fire cases tried by traditional leaders. Private sector participation should also improve as they can use new initiatives and promotions of the wide range of roles played by forests so as to restore, sustainably consume and even establish natural forests.