



Environmental Management Agency (EMA)

FIRE ASSESSMENT REPORT 2013

EMA - PROTECTING THE ENVIRONMENT

Contents

Forword	2
1.0 Introduction	4
2.0 Fire Risk Prediction	4
2.1 Causes of fire	5
3.0 Area Affected by fires	6
4.0 Environment Education and Awareness	9
4.1 National Fire Week	10
5.2 Fires and distance from Mineral Panning Site	10
5.0 Impacts of fires	13
6.0 Law Enforcement	17
7.0 EMA interventions for fire reduction	18
7.1 New extension methodologies: Study Circles	18
7.2 Hay Baling	23

Foreword



Fire plays a crucial role in balancing savannah ecosystems and has been used for centuries to clear land and for tick control. Veld fires become a problem when used carelessly. This causes a lot of damage to our economy, the environment and human lives are lost.

In the year 2013 4 lives were lost to veld fires compared to 16 lives in 2012. While this is a great reduction, no one should die as a result of fires, hence my ministry's is embarking on a "Zero Fire Deaths Campaign" for 2014. Property over US\$180 060 was gutted by fires negatively affecting our economy.

The property included farm equipment, agricultural produce, livestock and household property. A total of 1,179,274 hectares were lost to fires compared to 1,320,325 hectares in 2012. This marks a 10.68% reduction. These fires resulted from a total of 1,981 fire incidences.

The 10.68% hectrage reduction is attributed to various initiatives implemented by the Ministry of Environment Water and Climate and its various departments namely the Environmental Management Agency, Forestry Commission, Allied Timber Holdings as well as the Parks and Wildlife Management Authority. The Ministry has continued to partner with Friends of the Environment, Mukuvisi Woodlands and other stakeholders in fire management. Initiatives such as fire awareness campaigns, fire week commemorations, road shows, radio and television programmes, print media articles, study circles, hay bailing and fireguard demonstrations have been implemented to raise awareness on fire related issues. A total of 16 934 people were reached out through 16 fire week commemorations held nationwide. The Environmental Management Agency worked tirelessly with various key stakeholders; the ZRP and the judiciary, Environmental sub committees (ESC), a thousand, one hundred traditional leaders and more than a thousand fire fighting teams were trained to put out fire fighting teams .

“As clearly spelt out in ZIMASSET fire management is a key focus area for the government, for a healthy environment to support agricultural production. I urge all property owners to have adequate fire suppression measures and to construct standard fire guards as required by law. Do not be found on the wrong side of the law, play your part.”

Minister of Environment, Water and Climate

Hon Saviour Kasukuwere (MP)

1.0 Introduction

Veld fires have over time caused unprecedented damage to Zimbabwe's natural resources and the environment. They have caused destruction to property and loss of life around the country while destroying forests and animal habitats. Veld fires are prevalent between June and November due to the conducive weather conditions which are strong winds, high temperatures and arid conditions. During this period the fuel load is dry and more susceptible to fires.

In 2013, a total of 1,179,274 hectares of veld were burnt by fires compared to 1,320,325 hectares in 2012. This translates to 10.68 % decrease in area burnt from 2012. The reduction may be attributed to increased awareness in communities on the dangers of fires. These fires resulted from 1981 fire incidents and gutted down property worth over US\$180,060.

The target for reduction of fires for the year 2013 was 10%. In the next 5 years, the target set for reduction is 40%. Being a savannah ecosystem, the country prone to fires. The use of fires cannot be completely eliminated because they are used as a farm management tool to control ticks and bush encroachment. The legal provisions should be followed when using fires as a farm provisions. In any case do not start an open fire that you cannot put out.

2.0 Fire Risk Prediction

Fire prediction provides the basis upon which annual fire pre-suppression activities and management processes are implemented. The Agency used the fire-monitoring station to predict the fire risk using vegetation and previous fire prevalence. The results indicated that 65 % of the country was in the high and extreme risk category while 23% was medium risk and 12 % was in the low risk, Figure 1 refers. Three (3) provinces of Manicaland, Mashonaland West and Mashonaland Central were in the high fire risk zone due to the high biomass and previous veld fire trends. There was a positive correlation between the prediction and the actual occurrence of veld fires in 2013. Efforts to reduce fires were therefore concentrated in the identified high risk areas namely; Goromonzi, Hurungwe, Makoni and Mazoe Districts

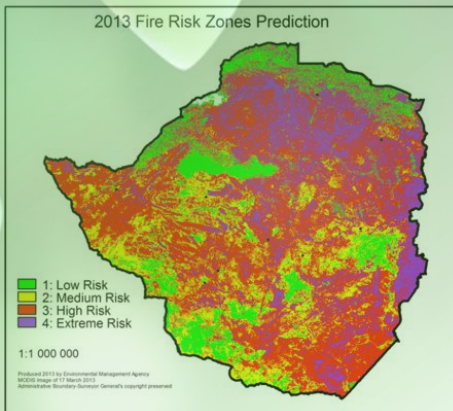


Figure 1 Fire Risk Prediction for 2013

2.1 Causes of Fires

Fire was mostly caused by anthropogenic factors illustrated Table 1. The highest cause of fires was land clearing accounting for 26% of the incidences followed by hunting with 11%. The majority of the fires 45.81% of the incidence remain unaccounted for as people do not reveal the causes for fear of prosecution.

Table 1: Causes of fire incidence in 2013

Cause of Fire	Percentage
Land clearing	26.58%
Hunting	11.2%
Fireguard construction	2.98%
Children playing with fire	2.18%
Arson	1.81%
Waste burning	1.45%
Gold Panners	1.82%
Electric faults and tyre bursts	1.45%
Tree felling using fire	1.09%
Cigarette smokers	1.81%
Poor management of ashes	1.81%
Unknown	45.82%
Total	100

3.0 Area Affected by fires

A total of 1,179,274 hectares of land were burnt by fires in 2013. The most affected provinces were Mashonaland West (475,244ha), Mashonaland Central (206,318ha) and Mashonaland East (176,207ha). Contrary to the general declining trend in fire prevalence, the three Mashonaland Provinces realised an increase in area burnt. These are hotspots where the Agency will upscale fire management activities for the protection of the environment. A breakdown of the statistics is shown in Table 2.

Table 2: Area Burnt Per Province in Hectares

PROVINCE	PROVINCIAL AREA	AREA BURNT		% PROVINCE BURNT	
		2012	2013	2012	2013
Masvingo	5 668 514	60 980	18 911,97	1%	0.33%
Manicaland	3 610 262	37 767	37 136,57	1%	1.03%
Mash West	5 775 153	304 925	475 244,91	5%	8.23%
Mash East	3 234 476	114 907	176 507,10	4%	5.46%
Mash Central	2 828 463	85 508	206 318,62	3%	7.29%
Mat North	7 489 677	282 434	125 952,03	3%	1.68%
Mat South	5 414 666	49 566	38 465,89	1%	0.71%
Midlands	4 919 691	107 232	90 192,37	1%	1.82%

In line with the 2013 fire prediction, the most affected areas were in the central, north and north-eastern parts of the country as shown in Figure 3. These areas receive high rain

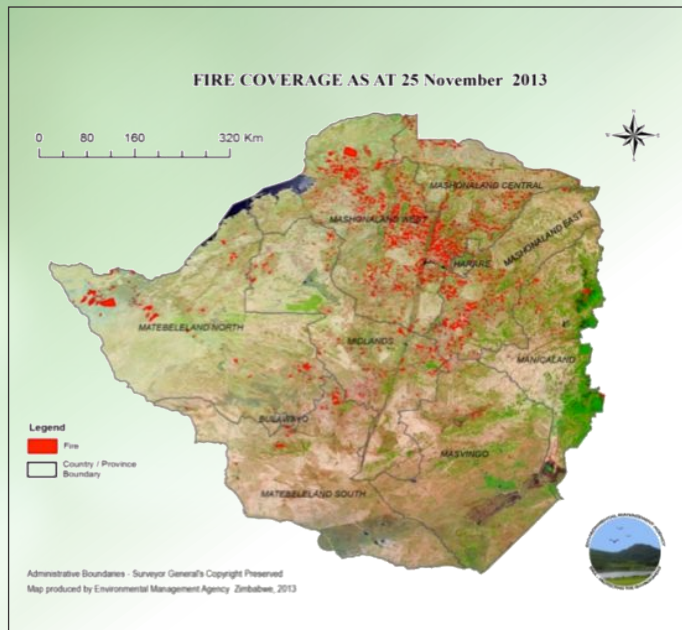


Figure 3: Spatial distribution of burnt areas

3.1. Fires and Land use

The majority of the fires in the country were recorded in former large scale commercial farming areas accounting for more than 50% of the area burnt. In 2014, the Agency will target these farmers so that by constructing standard fireguards. The traditional leadership gap in commercial farming areas also contributes to the increase in fires as some property owners have attitude to fire management programmes.” National Parks and Safari Areas continue to have more fires mostly due to poaching of wildlife in such areas (Figure 4).

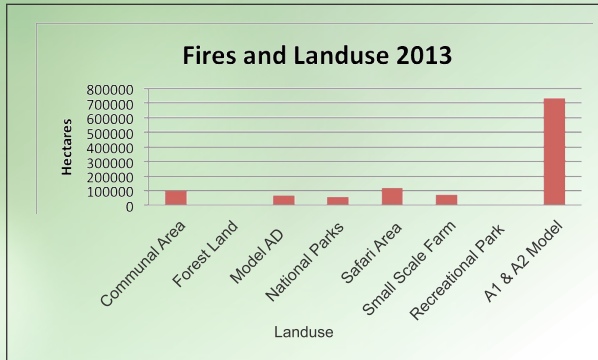


Figure 4 Fires and land use affected

3.2 Fire monitoring

The Agency monitored fire incidences using the real time and alerted various stakeholders such as the Forestry Commission, Agritex, ZRP, Zimbabwe National Parks and Wildlife Authority, farm owners, to attend to the fires in their areas. Daily fire alerts were generated and sent by email (firenews@ema.co.zw) and in some cases stakeholders were notified by phone. The weekly trends of fire incidences and area burnt as sent out in fire alerts are shown in Figure 5.

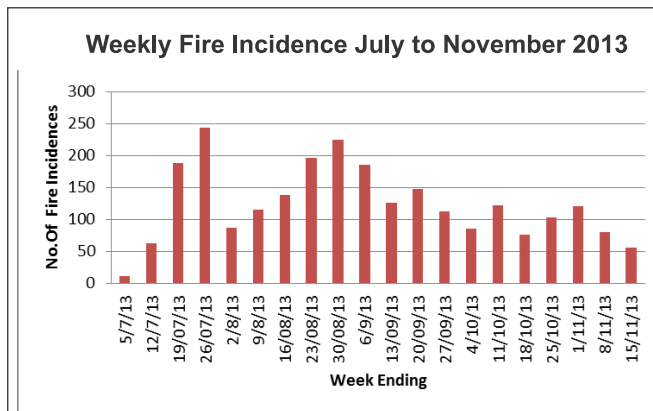


Figure 5: Weekly Fire Incidence July to November 2013

The highest number of fire incidences were recorded in the month of August because the vegetation was drier and more combustible. The high winds that usually occur in August intensified or fuelled the spread of fires hindered control of fires.

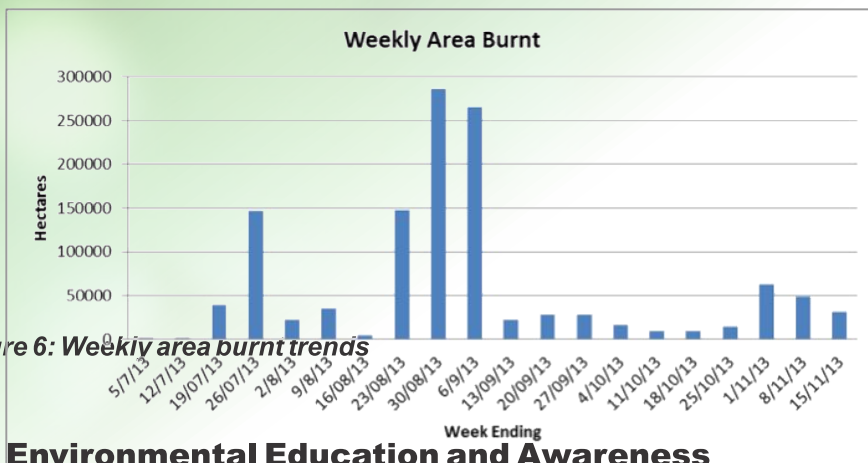


Figure 6: Weekly area burnt trends

4.0 Environmental Education and Awareness

The national fire week was commemorated on the 17th of May 2013 at Vuti Secondary School in Hurungwe, Mashonaland West under the theme "**Save the Environment—Prevent Veld Fires.**" The event attracted 1, 043 people and a total of 16, 934 people attended fire launches throughout the country. Despite the high attendance and number of commemorations, Mashonaland Central and East recorded an increase in fire incidences. This could mean that other strategies should be employed in these areas. Table 3 shows the number of people who attended the National Fire Week commemorations by province.

Table 3: Statistics on National Fire Awareness Campaigns 2013

PROVINCE	NO. OF COMMEMORATIONS	AUDIENCE
Manicaland	3	5 277
Mat South	2	1 007
Mat North	2	1 783
Mash West	1	603
Mash Central	3	3 727
Mash East	4	2 456
Masvingo	2	461
Midlands	1	1 620
TOTAL	18	16 934

4.1 National Fire Week

The National Fire Week is commemorated every second week of May each year. Its purpose is to spread awareness on the effects of veld fires, educate the public on veld fire prevention and management. It was launched in 2009, every year it and runs on a particular theme. In 2013 it ran under the theme *“Save the Environment-Prevent Veld Fires.”*

5.0 Fires and Distance from the Road Network Relationships

Data analysis for 2013 fires was done to determine the type of relationships that exist between fire incidences and distance from the road for August, October and November. The same study areas used in the 2011 and 2012 fire season analysis applied for this year.

Fire incidences data used was obtained from the fire station and FIRMS - Information for Resource Management System website. In the analysis roads for each province were buffered at the following intervals 2,4,6,8 and 10 kilometres away from the road. The provinces analysed are Mashonaland West, Mashonaland East, and Manicaland. In all the cases fire incidences significantly decreased with increase in distance from the road.

In the month of August data analysis revealed that in Mashonaland West fires relationship with distance from the road was 96 % with a confidence of ($p=0.04$), Mashonaland east was 88% with a confidence of ($p=0.05$) while Manicaland had the least yet significant relationship of fire incidences and distance from the road at 70%, *Figure 6-8 refers*. Weekly fire statistics burnt reveals that August had the highest amount of hectarage lost to fires.

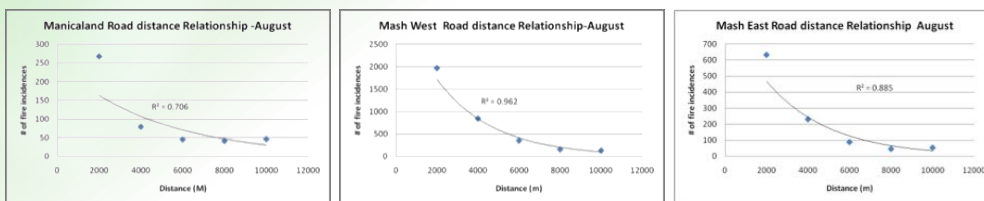
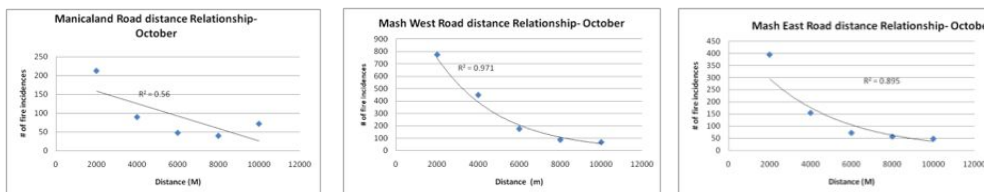


Figure 6-8: Relationship of fire and distance from the road in August

In the month of October distance analysis of fire incidences was also done for Mashonaland West, Mashonaland East and Manicaland provinces. Data analysis results indicate that in Mashonaland West province distance from the road statistically significantly ($p=0.04, r=0.97$) affect fire incidences as illustrated in figure 9-11.



The month of November had more fire incidences near the road network in Mashonaland West, Mashonaland East and Manicaland Provinces. Mashonaland West Province fire incidences can be explained by distance from the road 98% of the times. A negative correlation exists between the number of fire incidences and distances from the road. In other words more fire incidents were noted near the road network and their number decreases with increase in distance from the road in all the cases, Figure 12-14 refers. The results indicate that in 2013 there were more fires near the road network. This fact also goes hand in hand with the increased area burnt by fires. Mashonaland West had consistently a higher percentage of fires near the road in August, October and November. Strategies will be put in place in 2014 to ensure a reduction in road side fires.

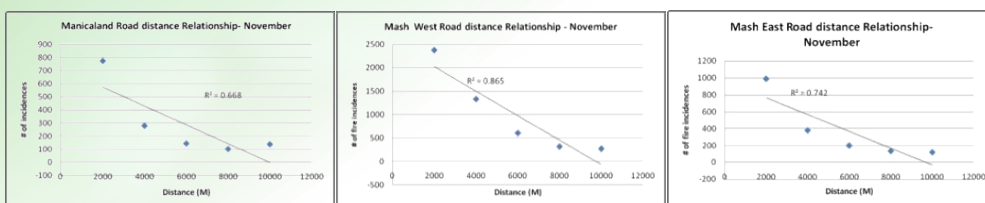
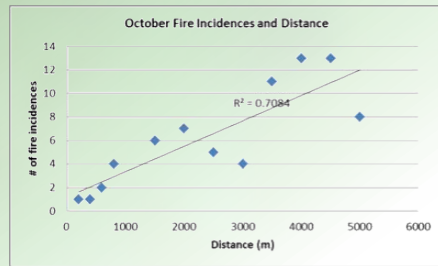
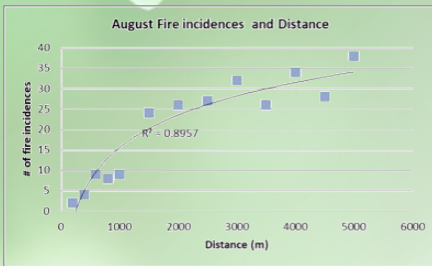


Figure 12-14 Relationship of fire and distance from the road in November

5.2 Fires and distance from mineral panning sites

The high number of fire incidences recorded near mining areas led to a study on the relationship between distance from the Great Dyke and the number of fire incidences. The great dyke was buffered at the following distances in metres (200, 400, 600, 800, 1000, 1500, 3000, 3500, 4000, 4500, and 5000). The analysis was done for the month of August and October during the fire season. The results indicate an increase in the number of fire incidences with distance from the green belt. In October the decrease in fire incidences could be explained by increase in distance from the road 70% of the times as shown in Fig 15 and 16 below.



5.0 Impacts of fires

In 2013, the country lost 4 lives to veld fires from Mashonaland East and Manicaland provinces. This is a marked decrease compared to 16 lives lost to fires in 2012. Table 4 gives a summary of the veld fire deaths.

Table 4: Veldt fire related deaths

DISTRICT	WARD	VILLAGE/ FARM	NAME OF DECEASED	GENDER	AGE	DATE OF DEATH	CAUSE OF DEATH
Mash East Hwedza	Makwarimba	Tungwarara Village	Mutengiwa Kudakwashe	Male	3 years	16.09.13	Smoke inhalation
Mash East Goromonzi	14	Delpport farm	Kabvumbi Tangisai	Male	34 years	08.09.13	Smoke inhalation
Mash East Chikomba	8	Stanrust farm	Mhlanga Kudakwashe Davison	Male	60 years	07.10.13	Injuries
Manicaland Mutare		Vumba	Dzadoi Kahondo	Male	70 years	25.09.13	Smoke inhalation

5.1 Property Affected by fires

Fires continued to negatively affect the economy and the environment. Various property items ranging from farm implements, household property, plantations and agricultural produce to the value of over US\$180,060.8 were ravaged by fires. This is a reduction from 2012 where US\$479,723.00 worth of property was destroyed.

Table 5: Property lost to fires

Item	Place	Item/Quantity	Value US\$
Plantations	Chikomba-Singlethorne farm	6 Tobacco seedbed 1 ha banana plantation 20 ha citrus	114,850
	Hurungwe, Ungwa village	4 tobacco seedbeds	
	Zvimba- Aurora farm	7 tobacco seedbeds	
	Mutare – Muzavazi Farm	31ha Eucalyptus	
	Makoni – Muzavazi and Crofton Farms	79,5ha eucalyptus	
	Chirumanzu-Fairfields	20 ha eucalyptus	
	Crofton farm	10 ha eucalyptus	
	Chikomba-Philipdale farm	1 tobacco seedbed	
	Chikomba Darnkik farm	2 tobacco seedbeds	
	Chipinge-Avantuur Farm	5 ha of tea Estate	

Table 5: Property lost to fires

	Bindura-Azkara	4 tobacco seed beds	
	Mazowe-Henderson Research	1 ha gum plantation	
	Marondera-Seven Miles	12 tobacco seedbeds	
	Nyanga-Troutbeck	8 ha pine trees	
	Midlands-Copper Queen	400 ha mango orchard	
	Midlands-Watte Company	31 ha gum plantation	
Property	Masvingo–Mupanambe village	3 houses, 4 huts and household property	55,972.75
	Mazowe- Kwayedza Farm	6 huts, clothes and kitchen utensils and household property	
	Bindura- Withington Farm	3 huts, clothes and kitchen utensils	
	Chegutu-, Mukute, Lismore and Pax farms	2 huts and household property	
	Hwange- Rungora Farm	7 huts	
	Chikomba-	14 gardens, 4 huts, 2 bath shelters, household property	
	Ward 7, Rietfontein Area	fencing poles,	
	Mt Darwin2	huts, 2 granary, household property	
		2x500 litres plastic water tanks	

Table 5: Property lost to fires

	Bindura- Withington Farm	6 brick molders and 2 wooden doors ,	
	Muzarabani- Shades, acres	ZESA switchbox,	
	Chipuriro Farms	1 trailer	
	Muzarabani-Mutute farm	1 hut,clothes,kitchen utensils and blankets	
	Makoni-Crofton Farm	2 huts, kitchen utensils and blankets	
	Chipinge-New Castle farm	2 huts, kitchen utensils, clothes	
	Shamva-Kaziro	1 hut and 1 door	
	Mutare-Vumba	Chapter 1 leisure center	
Agricultural Produce, Agriculture Equipment, Livestock	Chikomba-Wilderbeest Farm	Planter	9,238
		200m drip pipes and 10 sprinklers	
		5 goats	
	Hwange – Rungora Farm	6 bags of fertilizer	
	Mt Darwin	2 bags Soya beans	
	Bindura- Chinhenga Farm	2 tonnes of maize,300 tobacco clippers, 10bags of fertilizer	
	Chikomba-Ncanstastic Farm	1 hut and household property	
Total			US\$180060.8

Prevent Fires: Construct 9 metres by 9metres fire guards on either side of the boundary

6.0 Law enforcement

Enforcement of fire legislation was implemented in 2013. Before the fire season began 1 002 fire orders were issued to property owners to put in place adequate fire suppression measures. This was followed by 181 tickets and opening of dockets for fire related offences during the fire season. The judiciary has been pivotal in prosecuting fire-related crimes by giving custodial sentences to perpetrators. Mashonaland East was the most effective in this regard as evidenced by 13 cases all of which were suspended sentences. (Table 6).

Table 6: Fire related prosecutions

Province	No of Order	No of Tickets	Fines Assessed \$	Amount Paid	Dockets Opened	Court Cases finalised	Court Outcome/ Comments
Midlands	87	30	1, 850	870	4	2	Two court cases were also heard by traditional leaders
Mash Central	154	8	1, 360	671	53	3	US\$300 fine, US\$100 fine, US\$100
Mash West	76	13	1, 900	510	8	3	-\$150 each or 90 days imprisonment 30 hours community service
Masvingo	87	40	2 ,000	740	2	Nil	Not finalised because culprits could not be found

Table 6: Fire related prosecutions

Mat North	43	3	400	100	3	3	Suspect fined \$300 or 5 months imprisonment
Manicaland	90	38	2, 565	1, 254	22	4	
Mash East	359	31	4, 030	1, 817	19	13	All sentences (average 6 months to 2 years wholly suspended for 5 years)
Mat South	106	18	8, 200	100	Nil	Nil	Nil
Total	1002	181	22305	6, 062	111	28	

7.0 EMA interventions for fire reduction

7.1 New extension methodologies: Study Circles

The Agency employed a bottom up approach in 2013 so as to curb fires and their impacts. Various fire prone wards were selected for study circles where communities came up with solutions and plans to curb the fire problem in their respective areas. Table 7 gives the areas where study circles were held and their impact .

Table 7: Case study: Areas of where study circles were introduced

District	Number of study circles	Impact
Chikomba	11	Mobilized community to construct 80 km of fireguards
Marondera	6	Mobilized community to construct 10 km of fire guards.
Goromonzi	10	Mobilized community to construct 40 km of fire guards
Hwedza	18	Mobilized community and construct 87 km of fire guards
Mzingwane Ward 5,19,14	3	Fire management
Insiza Ward 22 ,17 and ward 18	4	Focal person continued to form 6 more study circles
Matobo Ward 24,18 and 25	3	Fire management
Muzarabani Ward 13 and 11	2	40% reduction in fire incidences, established firefighting teams in each village
Mazowe Ward 32	1	Fire management

Gutu Ward 1, 7, 32	3	Generally there is a reduction of fire incidences and area burnt for the 4 wards where the training was done. -34 km fireguard constructed
Hurungwe Wards 7,4 and10	3	A 23 kilometres fireguard constructed
Makoni	2	Community members dug ash pits and constructed 15 km fire guards
Chimanimani	1	Formulated a Fire management plan



Plates 1&2: Crofton study circle teaming up to construct fireguards along the highway where most fires start.

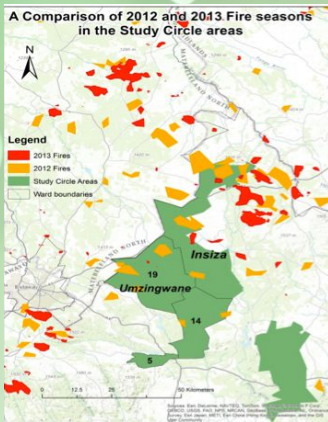


Plate 3 Positive Impact of study circles in Mzingwane and Insiza

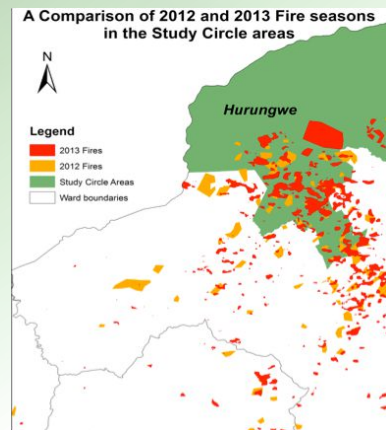


Plate 4: No Impact of study circles in Hurungwe

In Insiza, Umzingwane and Chirumhanzu, fire incidence reduced by 72% .This can be attributed to study circles. However, in Mashonaland Central, Mashonaland West and Mashonaland East the impact of study circles is yet to be realised. This could be due to inherent traditional norms that take longer to influence.

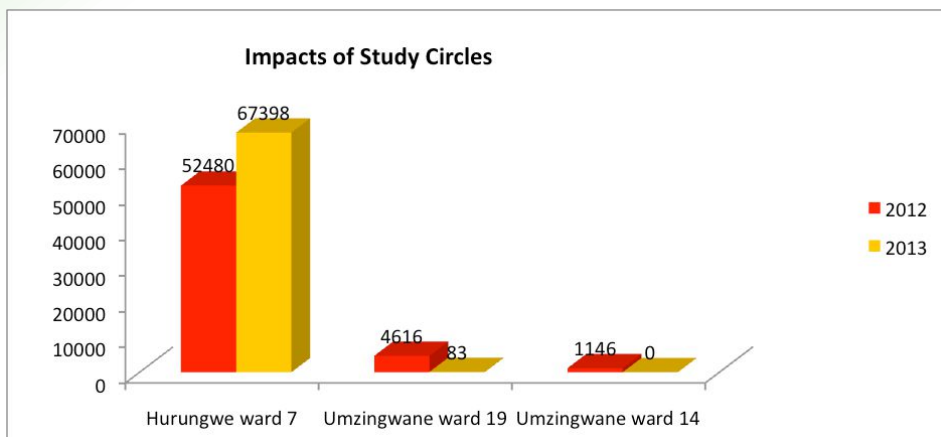


Plate 5: Comparison of 2012 and 2013

7.2 Training capacity building capacitated

The Agency trained various strategic and key stakeholders in fire management such as law enforcers, village heads, sub committees and fire fighters. The trained stakeholders participated in the prevention, extinguishing and management of veld fires. A total of 3, 168 stakeholders were trained in fire management (Table 8).

Table 8: Stakeholder Sensitisation

Province	Traditional leaders	ZRP, judiciary	Subcommittees	Fire fighting
Manicaland	442	47	8	12
Mash East	57	-	46	-
Masvingo	191	43	29	65
Mat North	177	29	239	97
Midlands	104	54	30	146
Mat South	77	19	99	538
Mash Central	-	32	14	5
Mash West	101	57	270	140
Total	1149	281	735	1003



Plates 5 &6: shows village heads under training in Mutasa District

7.2 Hay baling

The hay baling project was implemented to reduce the amount of biomass susceptible to fires and convert the natural resources to cash. A total of 5,188 bales worth \$6,790 (Table 9) were made. The bales were not sold but used by farmers whose grazing areas were affected by veld fires.

Table 9: Summary of the Hay Baling Project

PROVINCE	NUMBER OF BALES	VALUE OF BALES
Midlands	1,180	\$900
Mash central	160	\$320
Mash west	245	\$490
Masvingo	150	\$300
Mat North	700	\$1,050
Manicaland	461	\$922

Mat South	1,062	\$1,872
Mash East	1,230	\$936
Total	5,188	\$6,790

7.3 Fireguard construction

A total of 36 fireguard construction projects were implemented resulting in a 798.5km length of fireguards being constructed countrywide. At least 1,993 families who were not part of the project areas also replicated the fireguard project in their farms. To date, there have been 13 fire incidences in the project areas, 23 of the sites did not experience fires. All the 13 fires experienced were put out by the project fire fighting teams (Table 10). The fireguards project protected over 9000 hectares of land from fires

Table 10: Fireguard Implementation Projects

PROVINCE	PROJECT NAME	LENGTH OF FIREGUARD	NUMBER OF FAMILIES THE THAT REPLICATED	NUMBER OF FIRES IN PROJECT SITE
Mash Central	The Rivers Farm Mazowe District	10km	30	0
	Ward 18 And 19 Mt Darwin	8.5km	100	1
	Simona Farm Bindura	5km	98	1
Midlands	Ward 15 Somabhula, Daisyfied Farm Gweru District	11km	12	0
	Woodrich Farm Kwekwe District, Ward 30	5km	20	1

Mash West	Chegutu	4.9km		
	Hurungwe	3.5 km		
	Zvimba	1.5 km		
Masvingo	Muirlands Farm Gutu	12.3km	82	1
	Vredensburg Farm Masvingo	5.8km	36	0
	Heathcort Farm	4.2km	12	0
	Denholme Farm Gutu	12.3km	18	0
Mat North	Rivers Bank Farm Bubi	48km	9	0
	Woodlands Hwange	45km	120	3
	Mhlalanyoni Ward 28 Lupane	15km	28	0
	Inyokeni Village Umguzi	50km	279	1
	Phawu Ward Nkayi	173.5km	80	0
Mash East	Bristol Farm Hwedza	9.1 km	86	0
	Gilstone Farm Seke	15km	100	0
	Proton Farm Goromonzi	57.3km		0

	Wildbeest Farm Chikomba	10km	27	0
	Seacombe Chikomba	45km		0
Mat South	Izimbili Umzingwane	12km	97	0
	Greenland Insiza	20km	30	0
	Lochard Insiza	30km	249	0
	Ensangu Insiza	35km	301	2
	Insiza			
	Haygrange Mangwe	26km	32	0
Manicaland	ZimFao Chipinge	15.5km	21	0
	Chikukwa Chimanimani	23km	34	0
	Claremont Nyanga	25.8km	16	1
	Mhandara Makoni	115km	10	0
	Beescrow Nyanga	60km	10	1
	Meiron Nyanga	20km	8	0

Prevent Fires: Construct 9 metres by 9metres fire guards on either side of the boundary

	L'amour Dairy Farm Mutasa	75km	15	0
	Inyashuti Community Plantation Mutasa	7km	25	1
	Chidazembe Community Plantation Mutasa	1.7km	8	0
Total		847.9km	1,993	13



Plate 8: A eucalyptus woodlot that was razed by veld fire in 2012 at Bristol farm, Seke District



Plate 9: The same woodlot at Bristol farm in 2013 in Hwedza district experienced no fires after 9.1km fire guard was constructed

Before



After



Plate 10 & 11 Fireguards constructed at Brick Hills farm in Nyanga

8.0 Recommendations

- Following the success realised in the new extension methodology in Masvingo and Midlands provinces it is recommended that the methodologies be used intensively in the three Mashonaland provinces to combat fires.
- From the concerns raised by farmers, there is need to reconsider the regulated fire season and prohibit fires throughout the year unless the farmers have notified the relevant people such as the community and the police and been authorised to burn.
- Interventions should start early to allow for full engagement of communities.

9.0 Conclusions

The Agency managed to slightly surpass its target to reduce the area affected by fires by 10% in 2012. With the establishment of the new section responsible for fires and ecosystems management on a full time basis, it is anticipated that fire incidences as well as the hectareage affected by fires will continue to decline. Community fire management at present appears to yield results as the pilot wards trained early realised positive results.

Annex 1 Fire prevention in pictures



A standard fire guard constructed at the Fire project in Woodrich farm of ward 30 in Kwekwe district. The fireguard stretch is 5 Km



Raking of grass during the hay bailing project in Somabhula area of Gweru district



The baling of grass at the Hay project along the Gweru - Bulawayo road in Somabula – Gweru

7.0 Facts and Tips

1. Safety

This element should be considered when suppressing a fire in case of a fire outbreak.

Never cross an area where there is a fire. Wind speed might increase resulting in increased fire intensity. Always check carefully the wind direction in order to establish the escape direction. School children and the elderly are vulnerable to veld fires and should never attempt to pass through an area where there is a fire.

Counter firing can be used only when one's life or property is in danger of loss or injury from an approaching fire. This involves starting another fire so that when the two fires meet there is no fuel load, hence the fire extinguishes. Reasonable care should be taken to ensure that fire does not spread beyond the limits necessary to secure the person from such loss or injury.

2. School Children

1. In the event that school children come across fire, they are advised to do the following:

- First quickly report the incident to any nearby adult person
- Children should not attempt to cross over fire, "crossing over fire may result in fatalities;"
- Children should not try to extinguish a veld fire on their own;
- Children should not try to climb trees in the direction of a veld fire rather they should move away from the veld fire.
- If they are on their way home and they come across a fire, they should return to school and if they are on their way to school, they should return home.

3. Bus passengers

Travelling can at times be done during odd hours in cold weather. These conditions drive passengers to make fires at the bus stop for warmth. Travellers are encouraged to

do the following before leaving:

- Make sure they completely extinguish the fire before leaving;
- Make sure all the glowing splints are completely extinguished using water or sand;
- Cigarette smokers should ensure that they don't throw lit stubs on the ground;
- It is a statutory requirement that no fire should be started outside residential premises during the period 31 July – 31 October.
- People are encouraged to put on warm clothes because history has shown that many road fires are left unattended.

4. Bee smokers

This is one of the ways through which hunters can cause fires. Bee smokers are advised to:

- Use other methods of extracting honey without using a fire or smoke e.g. they can use man-made bee hives.
- Seek advice from Forestry Commission on the use of man –made bee hives for honey extraction.

5. Motorists

These vehicle users are reminded to:

- Put out cigarette stubs and use ashtrays to prevent veld fires
- Assist in fire fighting and always travel with a fire extinguisher;
- Service car electrical system to avoid starting accidental fires

6. Traditional leaders

These leaders should:

- Have fire fighting teams to put out uncontrolled veld fires in their areas.
- Carry out fire awareness campaigns throughout the fire season
- Use cultural ways of punishing veld fire perpetrators.

7. Rural District Councils

Local authorities should be responsible for areas under their jurisdiction and ensure that they:

- Establish environmental committees to oversee environmental issues;
- Establish environmental sub –committees which are chaired by ward councillors;
- Appoint environmental monitors in wards with assistance from EMA;
- Ensure that there are fire fighting committees in all wards;
- Report all veld fire incidences within 7 working days.

8. Farmers/ Property owners

These stakeholders are also reminded to:

- Construct standard fireguards which are at least 9m wide on either side of boundaries and internal fire guards which should be at least 9m wide. Fireguards can be constructed by ploughing using ox-drawn ploughs or tractors, disking, hoeing. Always inspect your fireguards to make sure that they are free from combustible material. Fireguards are important because they break fire by removing the fuel load from the fire triangle.
- Ensure that fire fighting equipment is in place, bowsers/knapsack sprayers filled with water during the fire season.
- Report all fire incidences to the nearest ZRP or EMA offices within 7 working days.



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