



DEPARTMENT OF WATER AFFAIRS AND FORESTRY



# **PLACEMENT OF THE FIRE FUNCTION: CUSTODIANSHIP OF SOUTH AFRICA'S NATIONAL VELD AND FOREST FIRE ACT**

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## **FINAL REPORT**

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## EXECUTIVE SUMMARY

*The Department of Water Affairs and Forestry (DWAF), as current administrator of the National Veld and Forest Fire Act, has a concern that this function is not properly placed in its jurisdiction, as it is now.*

*It requested a study to investigate the options for the future administration of the Act, taking into account all relevant policy, institutional, local, economic and environmental factors, and those relevant to the management of the prevention and combating of veldfires in all spheres, including the community sphere. It required different models of the alternative systems to be assessed, according to agreed criteria, and a recommendation for the preferred option, after adequate consultation.*

*This document is a report on the situation regarding implementation of the National Veld and Forest Fire Act in South Africa, the options for its future administration, and the considerations that apply to these options. It includes a framework for further implementation of the Act. It covers the following topics:*

- veldfire risk in South Africa and the costs and benefits of improved risk management: risks are currently at a level that threatens rural development; an estimated total government contribution of about R90 million per annum, in all spheres, to integrated veldfire management will evidently deliver benefits that greatly outweigh this cost, and effectively leverage the estimated R900 million currently spent by owners, both private and public, in veldfire management*
- veldfires, ecology and natural resources in South Africa, which provides the natural-history context to the study and sets out the requirements for integrating ecology, natural resources, and risk management; it also provides the environmental principles to be followed by the custodian of the Act in further developing and implementing its framework strategy*
- an outline of the administrative history of veldfire management in South Africa, which helps us understand the imprint of history on current policies and institutions*
- a definition of the term "fire function" which demarcates the role and core functions of the custodian of the Act*
- the impact of the Constitution of 1996 and new policies and laws*
- the role of Working on Fire and Ukuvuka Firestop*
- detailed analysis of the fire function and linked on-the-ground veldfire management functions, including a stipulation of the distribution of roles and responsibilities among relevant institutions*
- progress in the implementation of the National Veld and Forest Fire Act and related statutes, including aspects of relevant institutional development*
- alternatives for the future administration of the fire function and the criteria to consider in making a decision*
- options for the custodianship, criteria and requirements for choice and success, and a framework strategy for implementation.*

*The Act is not legislation for the emergency management of wildfires, but rather a statute that introduces certain legal instruments which enable and promote integrated veldfire management. These integrate natural resources management with emergency management, i.e. it is about environmental management.*

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*The Act is being implemented within a policy environment that has changed fundamentally during the last 10 years, and is still dynamic. The Disaster Management Act sets up a new system for anticipatory, coordinated and integrated management of disasters in all sectors, proper cooperative government in the field as a whole, and a coherent framework within which veldfire management (and other disaster sectors) can fit. It places sectoral responsibilities upon relevant sectors, however, rather than transferring these to an all-encompassing disaster management function. Further, it draws disaster management into natural resources and environmental management, a step mirrored in provisions within the National Environmental Management Act.*

*The broad field of policy in which the Act falls has been further transformed by progress arising from South Africa's commitments to key global conventions, i.e. the Convention on Biodiversity, and the Convention on the Combating of Desertification. These commitments are progressively mainstreaming biodiversity management and sustainable land management into all policy fields. Likewise, transformation of agriculture policy creates a new arena within which veldfire management must be practised*

*Furthermore, the "fire function" to be assigned does not include on-the-ground management of veldfires, which is the responsibility of owners, Fire Protection Associations, and local fire services. Rather, it is about the policy, enabling, leadership and regulatory functions that national government must retain.*

*It is vitally necessary in the public interest to assure that a policy of integrated veldfire management is promoted as the foundation for the implementation of the Act. Experience elsewhere, as well as historically in South Africa, shows that an unbalanced policy has high direct and indirect costs. This arises especially where there is undue emphasis on fire response and suppression at the cost of proper integrated veldfire management as part of ecosystems management. I.e. the broad lesson is that if you do not sustain an integrated fire management policy you pay high prices in environmental degradation, fire management, and asset loss. For this reason, the fire function as defined should not be fragmented.*

*The question of the best custodian for the National Veld and Forest Fire Act is dominated by the fact that the current level of management of veldfires in South Africa is not adequate to the overall level of veldfire risk. This is such that it jeopardises rural development. Government's duty of care requires a decision that promotes rapid improvement in management of this risk.*

*This study shows that the benefits of government's role in improved integrated veldfire management greatly outweigh the costs, given the economic savings and the public goods that would come from improved safety, better sustainability in rural development, and enhanced productivity of ecosystem benefits.*

*Optional administrative arrangements are as follows:*

- A. THE DEPARTMENT OF WATER AFFAIRS AND FORESTRY
- B. THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND TOURISM
- C. THE DEPARTMENT OF AGRICULTURE
- D. THE DEPARTMENT OF PROVINCIAL AND LOCAL GOVERNMENT: NEW ENTITY
- E. THE DEPARTMENT OF PROVINCIAL AND LOCAL GOVERNMENT: NATIONAL DISASTER MANAGEMENT CENTRE
- F. REPEAL THE NATIONAL VELD AND FOREST FIRE ACT
- G. ASSIGN ADMINISTRATION OF DIFFERENT CHAPTERS OF THE ACT TO DIFFERENT AGENCIES.

*These last two options are rejected, since they will aggravate current levels of risk and fragment the fire function.*

*Some parties consulted also proposed that the fire function should be assigned to an independent agent, acting on behalf of all national Departments with an interest in the fire function. This option is*

*not recommended now, on the grounds that it is the chosen custodian that must consider it once custodianship has been settled. The custodian needs itself to decide which aspects of its function may and should be agentised. Assignment and delegation of functions in terms of the Act must be done by the Minister and the Director General, and in the light of the fact that certain elements of the function would certainly remain the responsibility of the Minister and the custodian Department.*

*Among the options available for locating the fire function, none offers a perfect fit.*

*The two options involving the Department of Provincial and Local Government are not to be recommended, since assigning the fire function to that Department would interfere with its role and mission to develop and promote a system of integrated government, and to develop and promote systems and structures of effective governance, particularly at the local sphere. Thus, its mandate is cross-sectoral, across all sectors, and focuses on systems and structures. Assignment of a sectoral function would undermine this mandate. In addition, in both these cases, the fire function would become isolated from the necessary supportive institutional competence, knowledge and information needed for a successful integrated veldfire management policy.*

*The option of custodianship within the National Disaster Management Centre would also involve high risk of disruption to current implementation of the Disaster Management Act and a loss of mission focus. Rather, the custodianship needs to interface with disaster management just as other line custodianships do, e.g. in flood, drought, and food security management. It is not a valid argument to say that for effective integrated veldfire management to be achieved, the National Disaster Management Centre must administer the National Veld and Forest Fire Act together with the Disaster Management Act.*

*The argument from some stakeholders, that the National Veld and Forest Fire Act is in conflict with the Fire Brigade Services Act and therefore must be administered in tandem by the same entity that administer the latter Act, i.e. the Department of Provincial and Local Government, is not valid. Perceived conflict must be managed by the custodian in the same way as all other relevant cooperative government issues must be managed.*

*Of the three remaining options, i.e. Water Affairs and Forestry, Environmental Affairs and Tourism, and Agriculture, each provides a reasonable fit, but the latter two entities are not more competent than DWAF to implement the Act and both face severe capacity challenges. Transfer of the function in either case would certainly disrupt implementation.*

*The option of retaining the function within DWAF is the best available, especially because it entails least disruption of the ongoing progress in the implementation of the Act and thus is the one that would assure most rapid progress in addressing the unacceptable levels of veldfire risk that are current in South Africa today.*

*Though there is no national Department that is a perfect fit for the cross-sectoral fire function, it is also true that the Forestry function in DWAF provides a good fit.*

*This is because:*

- the Department has built a good track record in the implementation of the Act*
  - there is strong motivation for government to address the wildfire risk in the forest sector: nearly all of the R30 bn asset base of the forest and forest products industry is located within the zones of high to extreme wildfire risk, and the entire forest-products value chain is vulnerable to the hazard of wildfires; the newly restructured forest assets have suffered especially severely in the last round of wildfires; in addition, emergent growers and enterprises, which the Department seeks to promote, are especially vulnerable to wildfires and almost certainly not sustainable without improved wildfire risk management*
  - the Department's sphere of interest with respect to natural forests and woodlands, the former all in the zones of high to extreme risk, and more than 20 million hectares of the latter in the same zones, is also exposed to substantial veldfire risk, both in terms of commodities and of the supply of ecosystems goods and services; wildfires are a contributory cause of degradation of these resources, which are a vital part of the livelihoods of thousands of poor rural households*
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- *as detailed in the report, of the alternatives, the Department houses the best body of competence in integrated veldfire management, which since it is distributed within the Department beyond the fire function, constitutes a substantial asset to support the function; the supporting body of knowledge and information within the Department is also strong.*

*Retaining the fire function within the Forestry function in this Department would mean that it would address the functional area much as it does the Key Functional Area of Water Services, albeit on a smaller scale. The option does however raise questions about current paradigm and strategy for Forestry, as well as its location. These issues are beyond the scope of this report, but clearly a review would be needed.*

*This report provides financing and strategic guidelines for the further work of implementing the provisions of the Act. The custodian will need to ensure that this information is employed as a basis for its strategy and budget.*

*The question of the future of Working for Fire is nettlesome to many. It is a programme that has delivered rapid beneficial results in fire suppression, and created skills and employment. It should, as its business plan indicates, be restructured as a public-private partnership as soon as possible. This will convert it to a business-based service provider to owners, Fire Protection Associations and municipalities. The balance of activities in the business plan of Working for Fire would then revert to the custodian.*

*The information derived from this study is the basis for an outline strategy for further implementation of the Act, which is included in the report together with an indicative financing plan.*

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## 1 BACKGROUND AND INTRODUCTION

1. The Department of Water Affairs and Forestry (DWAF), as administrator of the National Veld and Forest Fire Act (the Act), has a concern that this function is not properly placed as it is in its current jurisdiction.
  2. It recognises that alternative administrative arrangements may have advantages, and is concerned that the options for locating the administration of this Act should be properly assessed as a basis for a decision on the future placement of this function. It requires further that, should it continue as custodian, assignment of this function should be properly justified, to enable it to implement and resource an effective strategy.
  3. It requested a study to investigate the options for the future administration of the Act, specifically the institutional placement of the "fire function", taking into account all relevant policy, institutional, local, economic and environmental factors, and those relevant to the management of the prevention and combating of veldfires in all spheres, including the community sphere. It required different models of the alternative systems to be assessed, according to agreed criteria, and a recommendation for the preferred option, after adequate consultation.
  4. Appendix A contains the contractual terms of reference in full. Aspects of execution of the project to note are:
    - analysis of all relevant statutes and relevant policy documents yielded a data base of instruments, institutions and their stated roles and purposes, which formed the basis for the description of institutions, roles and responsibilities contained in this report
    - there were 57 interviews (the contract called for 40), involving over 100 people, from institutions ranging from community to national authorities, in the Provinces of Free State, Eastern Cape, KwaZulu-Natal, Mpumalanga, Gauteng, and Western Cape, as well as at the national level; no interviews were possible with the national Department of Agriculture and Department of Environmental Affairs and Tourism, and though the members of the consultants' team are familiar with their policies, statutes, strategies and state of institutional development, the Department will need to follow up by consulting these bodies as well
    - workshops and the national focus group session were held during April and May 2004
    - the scientific literature and collective scientific knowledge of the consultants' team as well as that of Professors William Bond of the University of Cape Town and Winston Trollope of Fort Hare University formed the basis for a report on the environmental landscape, from which derived Section 3 and parts of Section 2, below
    - the lessons from international experience (section 10 below) area drawn from a report by Metis Associates, consultants with experience in fire management systems in Australia and Indonesia, who were assisted by a colleague in Canada
    - information on candidate custodians was supplemented by analysis of the contents of the strategies of each candidate Department
    - throughout, information received was sifted to identify facts, issues and concerns that are relevant to the recommendation on custodianship and strategy; there was much other information relating to details of implementation that is of value to the custodian later, but not addressed in this report.
  5. This document is the final report on this investigation.
  6. It covers the following topics:
    - veldfire risk in South Africa and the costs and benefits of improved risk management
    - an account of veldfires and the environment in South Africa
    - an outline of the administrative history of veldfire management in South Africa
    - a definition of the term "fire function"
    - the impact of the Constitution of 1996 and new policies and laws
    - partnerships in veldfire management
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- detailed analysis of the fire function and linked on-the-ground veldfire management functions and the distribution of roles and responsibilities
- progress in the implementation of the National Veld and Forest Fire Act
- the situation and experience in overseas countries
- options, criteria, and implementation, including options for the custodian, criteria for choice, a framework strategy and road map for implementation, and options ranked by criteria.

## **2 VELDFIRE RISK IN SOUTH AFRICA AND THE COSTS AND BENEFITS OF IMPROVED RISK MANAGEMENT**

7. Veldfire risk has two dimensions: wildfire risk, and the risks attached to inappropriate veldfire regimes.
8. Together, these currently constitute a major risk to rural development in South Africa. Economic costs alone probably amount to billions of Rand annually. Plausible estimates of the additional costs that would be incurred to put veldfire management on a sound footing indicate that government needs to add about R90 million per year to the current R900 million spent by owners to significantly reduce veldfire risk. The ratio between cost and benefits for such an investment is very beneficial.
9. Managing this risk profile is however made difficult by the uncertainties during political and social transition, and it will take a few more years before the situation has stabilised. Political, social, economic and environmental change during the past decade or more has created a constantly evolving and sometimes uncertain operating environment for fire management, which is still fluid. Thus, the different spheres of government are still in the process of deploying new policy and law, and developing the capacity to do so. Ordinary citizens, enterprises and corporations are still learning the new policy frameworks, and often waiting for clarity on many issues. Law enforcement is often inhibited by a still inadequate capacity to do what is needed, as well as lack of knowledge, information and proper procedure for veldfire incidents.
10. In addition, most institutions and experts report an erosion of natural-resource-management capacity stretching back to about 1987, which has contributed to an overall degradation of the state of natural resources and veldfire management in the country and is often seen as major contributor to the current risk picture. (See also Section 4, below.)
11. This report addresses these issues in Section 11.3, which outlines a framework strategy and roadmap for further implementation of the Act.
12. The excellent scientific ecological information on fire and historical sources on fire consequence forms the basis for a classification of fire-ecology environments in South Africa, and from this, a classification of veldfire risk.

### **2.1 WILDFIRE RISK**

13. Table 1 summarises the extent of each wildfire risk class in the country. A relatively small fraction is exposed to low risk.
  14. In the regions of extreme and high risk, 57% of South Africa, the consequences of wildfires are often major or catastrophic. Every year, for at least the past 10 years, the country has been plagued by disastrous wildfires in one place or another. Sometimes there have been several in a single year.
  15. The fires in the Western Cape in January 2000, and the recent catastrophes in the Kruger National Park and elsewhere on the Highveld and the Eastern seaboard, are some examples.
  16. The fires on the Mpumalanga escarpment in August 2003 caused an estimated R3 to R4 billion of damage to the forest and forest products industries alone.
  17. Wildfires cause human death and injury every year. People are left destitute, having lost their homes and livelihoods. The rural poor are most vulnerable, and are left without resources time and time again.
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Table 1. The fire-ecology types, fire risk levels in each, and their area in South Africa.

Fire-ecology type	Veldfire risk level	Area, square km	Per cent of total land area	Risk category: per cent of total land area (risk categories from low to extreme as indicated)
Moist Woodland	Extreme	132698	10.47	29.36
Sour Grassland	Extreme	239230	18.88	
Arid Woodland	High	211952	16.73	27.29
Fynbos	High	41752	3.30	
Sweet Grassland	High	92023	7.26	
Coastal Grassland	Medium	26273	2.07	11.01
Grassy Nama Karoo	Medium	77786	6.14	
Renosterveld	Medium	35371	2.79	
Forest	Low	10903	0.86	32.35
Nama Karoo	Low	180056	14.21	
Sparse Arid Woodland	Low	58390	4.61	
Succulent Karoo	Low	122593	9.68	
Thicket	Low	37857	2.99	
<b>Total</b>		<b>1266883</b>	<b>100.00</b>	<b>100.00</b>

18. In the metropolises and other populated regions, human health is degraded by the untimely and unwanted release of smoke with other pollutants into the local airsheds. For example, the Table Mountain National Park has to conduct prescribed burns in the proximity of a city and in doing this, reconcile pollution control with biodiversity requirements.
19. Environmental assets are often damaged by wildfires. The most costly damages are (a) actual or potential loss of biodiversity owing to inappropriate veldfire regimes (b) progressive spread of alien invasive plants owing to untimely fires and (c) progressive degradation of catchments and water resources. Maintenance of most of South Africa's ecosystems and the ecosystem goods and services they provide depends on the control of wildfires and the judicious use of prescribed burning.
20. Rural development, weakened by South Africa's history, is threatened in many places by the undermining effect of wildfires (a) directly, as outlined above, and (b) indirectly, for example by the currently reported prohibitive increases in the costs of fire insurance, and the effects of these risks on availability of credit and investment.
21. Poor rural households are especially vulnerable, and this major social risk has begun to receive proper attention only since democracy in 1994.
22. The wildfire risk has increased progressively in many areas, owing to several factors. The first factor is urbanisation, the spread of peri-urban areas and the extension of the urban interface. The second is increasing investment in rural assets in many areas – infrastructure, industrial forests and ecotourism resorts are examples. In addition, current rural depopulation and in parts the consolidation of farms to reach economic scale in an open trading environment, means that fewer people are available to manage fires. There are also frequent reports of people who exploit the

uncertainties of transition criminally through arson. The development of ecotourism and sub-division of farms on the margins of major protected areas such as World Heritage sites, with absentee landowners, has worsened the situation and provided unexpected challenges to fire managers. This problem is aggravated at least in some places, like the Cape Peninsula, by land speculation, with owners who rely for financial returns on escalating land prices and not on current income and who are therefore reluctant to spend money on fire management.

## **2.2 THE RISK OF INAPPROPRIATE FIRE REGIMES**

23. Fire is a natural ecological factor in South Africa and those ecosystems that are exposed to veldfire are adapted to fire. Our developed rural environment no longer allows natural fire regimes, so that some form of management through prescribed burning is needed to simulate nature, or to achieve other management goals (see Section 3 below).
24. However, ecologically appropriate prescribed burning is often diverted by factors such as lack of skills and capacity in land management institutions (owners or agencies), lack of knowledge and information, or fear of the law. Inappropriate prescribed burning, or weak or absent veldfire management, and thus inappropriate veldfire regimes, can have substantial environmental impacts. Examples of these impacts are (a) bush encroachment, and (b) invasions by alien plants, both of which have severe consequences in terms of biodiversity, land productivity, and water resources. The regions of high and extreme wildfire risk are all especially prone to these environmental consequences of inappropriate veldfire regime.
25. Thus, if integrated veldfire management does not maintain a veldfire regime appropriate to the environment in which it is practised, the environmental risks can be great. Worse, inappropriate veldfire regimes can lead to intractable wildfire management problems, as our own experience has shown, and as has been starkly illustrated by the recent disastrous fires in the American West and in Eastern Australia (see also Section 3 below).

## **2.3 COSTS AND BENEFITS OF EFFECTIVE INTEGRATED VELDFIRE MANAGEMENT**

26. This is the extremely risky context within which the system for managing veldfires in South Africa must be improved and deployed. The costs of these risks are not known, but insofar as they can be costed, they amount to several billion Rand per year in direct damage and in the loss of environmental services, such as water yield from catchments. There is unacceptable loss of human life, severe injury among many, and loss of shelter and livelihoods.
  27. Effective veldfire management would not eliminate all these costs, but can certainly avoid many disasters and mitigate the costs of others, as well as sustaining environmental quality and productivity. The benefit must exceed several hundred millions, probably billions, of Rand annually,
  28. Owners who manage land to acceptable standards of practice spend a necessary amount on fire management every year, as part of the cost of sustainable resource management. In well-managed plantation forests, this amounts to about R100 per hectare per year of afforested land, or about R75 per ha per year for the whole forest estate (including direct costs as well as insurance and contributions to service providers such as FFA and KZN FPA). For South Africa as a whole, this would amount to about R150 million per year. Pasture managers and managers of protected areas in the high and extreme risk regions will be spending about R5 to R20 per ha per year, i.e. assuming R10 per ha, about R700 million per year. In the medium risk region this would be much lower, i.e. about R14 million per year, assuming R1 per ha per year. Thus, owners are spending around R800 to R900 million per year on veldfire management currently.
  29. A plausible estimate for government's contribution to improved integrated veldfire management is about R90 to R100 million per year, including about R10 million by the custodian, R60 million in transfers to local government, and R20 million in fees to Working on Fire in the form of a public-private partnership (see below for details). This is a relatively small increment on the current public expenditure (given the Department of Water Affairs Expenditure, Working on Fire, and local government expenditures), and a small fraction of the costs of on-the-ground veldfire management.
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30. Clearly, benefits of government's role in improved integrated veldfire management greatly outweigh the costs, given the economic savings and the public good that would come from improved safety, better sustainability in rural development, and enhanced productivity of ecosystem benefits.

### **3 VELDFIRES, ECOLOGY AND NATURAL RESOURCES IN SOUTH AFRICA**

31. This Section provides the natural-history context to the study and sets out the requirements for integrating ecology, natural resources, and risk management; it also provides the environmental principles to be followed by the custodian in further developing and implementing its framework strategy.
32. It is important to note that the conclusions from this part of the study support and underline the Principles adopted by the International Wildland Fire Summit, held in Sydney, Australia on 8 October 2003, and to which South Africa was party.
33. Fire is a natural phenomenon in most terrestrial environments in South Africa and has been used by people to manage vegetation for millennia, mostly to facilitate hunting or grazing for livestock.
34. The combination of the period between successive fires, the time of year when fires typically occur, their size and the intensity (energy output) of fires in a given vegetation type is called its fire regime.
35. Fires occur if there are: (a) a dry and hot season or period, (b) a source of ignition and (c) sufficient, dry plant material (fuel) to sustain a fire and allow it to spread. These conditions occur in most years in the higher rainfall grassland and savanna or woodland regions, which characterise the eastern part of the country and the highveld. In the interior the lower and less predictable rainfall results in slower grass fuel accumulation and in the arid western interior dense grass and herb growth only occurs after an exceptionally wet season or a sequence of such seasons.
36. The result is that the fire regime varies gradually, from east to west, from one of frequent fires to fires only after wet growing seasons to occasional fires only after sufficient fuel has accumulated.
37. The shrubby fynbos and renosterveld vegetation of the southwestern and southern coastal and adjacent regions requires a number of years to accumulate enough fuel to burn.
38. The natural environments of South Africa classify into thirteen different fire-ecology types, i.e. groups of ecosystems within each of which the fire regime is relatively uniform, as is ecological response to fire (see Table 1). Fire is rare or absent in five of these, i.e. Forest, Nama Karoo, Sparse Arid Woodland, Succulent Karoo, and Thicket. Fires are frequent in the remaining types, i.e. across nearly 70% of South Africa.
39. There are important aspects of fire and ecology in South Africa that determine the ecologically-based risk associated with inappropriate veldfire regimes, as well as wildfire risk.
40. These are:
- the degree of fire dependence in a given vegetation type,
  - the relationship between fire dependence and both bush encroachment and the invasion of natural vegetation by alien invasive plants, and
  - the inherent relationship between climate, vegetation, fire regime, and the nature of the natural-resource assets that can be cultivated in any given region, hence asset exposure to fire risk.
41. The vegetation of South Africa has two broad classes: fire-dependent types (FD) and climate-dependent types (CD). The structure of the vegetation in fire-dependent vegetation is not limited by climatic conditions; without fire, the structure changes. Fire-dependent vegetation requires fires to maintain its biodiversity and would become dominated by woody plant species if fires were excluded. By contrast, the structure of climate-dependent vegetation is controlled by climate, mainly rainfall, and fires are not required to maintain biodiversity. In broad terms the FD and CD types can be related to the currently recognised biomes.
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42. Fire-dependent types include fynbos, grassy eastern Nama Karoo and areas of the grassland and savanna biomes with more than about 650 mm per of rainfall. Climate-dependent types include the arid regions of the grassland and savanna biomes, the Succulent Karoo, most of the Nama Karoo and most of the Thicket biome. The CD Forest biome lies almost entirely in the high rainfall part of the country. It occurs in patches within FD vegetation types but forests do not require fire to maintain their biodiversity. The FD types in the grassland and savanna biomes are mainly dominated by sour grasses and the CD types by sweet grasses. Sour grasses dominate the grassy eastern Nama Karoo even though the climate is arid. The Thicket biome can be broadly divided into two groups: those forms characterised by a high cover or diversity of succulent species (mainly in low rainfall areas) and harmed by fires (CD), and those forms with low succulent cover and diversity and more grasses (FD). The FD types require high intensity fires to prevent them becoming closed stands of woody species.
  43. From this we see that there is a close correlation between the categories fire-dependent, and climate-dependent on the one hand, and sour- and sweet-grass vegetation on the other. The distinction between "sour" and "sweet" grasses is important in the fire-ecology types where grasses are the main fuel. "Sour" grass cover typically occurs in high-rainfall (> 600-700 mm per year), in high-lying and in cool areas. It is characterised by grass species that grow very rapidly, produce coarse grazing and lose their nutritional value when they become dormant. This cover predominates in fire-dependent types. Sweet-grass species predominate in climate-dependent types, in areas with lower and less reliable rainfall (<600 mm) and produce a pasture that retains much of its nutritional value when the grasses become dormant.
  44. The exceptions to this broad pattern of fire dependence and grass type are in the southwest of the country, in the Renosterveld and Fynbos fire-ecology types. Here, fire dependence is not associated with grass type.
  45. Managers employ prescribed burning in at least eight of the thirteen fire-ecology types, for purposes of natural resources and biodiversity management. There are different prescriptions for burning in each fire-ecology type.
  46. The distinction between sour and sweet grassveld is very important in prescribed burning. Sour grasses generally require frequent and regular fire that removes the unpalatable grass left behind by the grazing animals, which would otherwise inhibit grass regeneration and growth, and thus admit denser shrub and tree populations. Sweet grasses do not require fire for their maintenance. The fuel loads in sweet grasses should be managed by maintaining stocking rates that will keep the fuel loads too low for fires except, perhaps, under exceptional conditions.
  47. Curing is an important feature of grasslands and woodlands. Green grasses have high moisture content and will not burn very easily even though temperatures are high and the air is dry. The fine leaves of grasses dry out rapidly once they have been killed by frost or dry conditions and provide the fuel needed to sustain a fire. Curing can occur within a week of the first frost in sour grassveld, or over a period of weeks in warmer areas where the growing season is controlled by soil moisture availability, i.e. usually in sweet grassveld.
  48. Bush encroachment is problematically related to fire and grazing in woodlands, some types of grassland, grassy fynbos and Grassy Nama Karoo. In these types there are strong interactions between fires, grazing, rainfall and the balance between woody and herbaceous plants. Replacement of the diverse herbivore fauna with domestic livestock removes the browsing animals that reduced woody plant growth and broke off or knocked down trees. The continued grazing suppresses grasses, reducing fuel loads and leading to low intensity fires, which generally results in woody plant recruitment and bush encroachment. These effects occur more rapidly in Moist Woodlands than in the drier woodland fire-ecology types because wet years appear to be needed for successful recruitment of woody plants. High-intensity head fires are needed to kill small woody plants and reduce the density and competitiveness of woody plants. In moist environments these fires need to be frequent but not necessarily annual but in drier environments they can be prescribed at longer intervals depending on an assessment of the need to reduce tree densities.
  49. There is good evidence that global change is measurably affecting South African vegetation. For example, elevated atmospheric carbon dioxide promotes woody plant growth thus promoting bush
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encroachment. Such changes will interact with fire to complicate the way we manage our ecosystems.

50. Thus, in summary, integrated veldfire management requires knowledge of fire ecology and the environmental variation across South Africa that determines a marked variation in the role of fire in ecosystems. Good local ecological knowledge is needed for the design of appropriate veldfire management strategies. Compliance with biodiversity and natural resource management policies, as well as effective management of wildfire risk, is dependent on appropriate veldfire management strategies.
51. It is vitally necessary to assure that a policy of integrated veldfire management, as defined in Section 5 below, is promoted as the foundation for the implementation of the Act. Experience elsewhere, as well as historically in South Africa, shows that an unbalanced policy has high direct and indirect costs. This arises especially where there is undue emphasis on emergency response and suppression at the cost of proper integrated veldfire management as part of ecosystems management. The most graphic illustration is the American West, where the "Smokey Bear" approach (i.e. the fire suppression policy) has (a) caused neglect of forest and range management, and hence resulted in fuel build-up and thus highly aggravated fire risk, both wildfire and environmental and (b) the emphasis on suppression has caused excessive investment in suppression capacity and technology, and thus a large service-provider industry with a vested interest in suppression, which it now lobbies and defends and (c) government funding tied to this service and hence difficulty in reallocating funds to integrated fire management, hence government is stuck in suppression mode (see, for example, FAO, "Global forest fire assessment 1990-2000" and "Another costly war that America can never win? Without a radical rethink, America's forest fires will only get worse"; The Economist, 15 August 2002). As a result, costs of integrated fire management, real or potential, have increased excessively and unnecessarily. I.e. the broad lesson is that if you do not sustain an integrated fire management policy you pay high prices in environmental degradation, fire management, and asset loss. Again, this lesson is captured in the Principles adopted by the International Wildland Fire Summit.

#### **4 AN OUTLINE OF THE ADMINISTRATIVE HISTORY OF VELDFIRE MANAGEMENT IN SOUTH AFRICA**

52. South Africa has a long history in the administration of veldfire management, reflecting the pervasive and growing risk that veldfires constitute.
  53. Prior to and during the time of written law, tribal custom regulated the use of and protection from fire. This continues in some areas today still.
  54. Very soon after settlement of the Cape, Governor Jan van Riebeeck issued "placaats" or edicts that were aimed at controlling veldfires.
  55. The first statute that provided for veldfire control was the Forest and Herbage Act of 1858 of the Cape Colony, motivated by the evident need to protect indigenous forests and mountain catchments. This was superseded by the Forest Act of 1888, which provided for the prevention and combating of veldfires. A series of forest and related statutes followed. Requirements for firebreaks date back to the last quarter of the nineteenth century. The Natal Act of 1895 required firebreaks 30 feet wide on either side of the common boundaries in about 40 districts.
  56. Other statutes followed, for the Colonies of the Cape and Natal and the Republics of the Orange Free State and Transvaal, which were eventually consolidated in the Union Forest Act of 1913.
  57. Later, from the mid-1940's onward, administration of the management of veldfires became progressively fragmented. In 1946 the Soil Conservation Act (later replaced with the Conservation of Agricultural Resources Act - CARA) incorporated from the forest law the provisions for veldfires with respect to natural resources and agricultural resources in general, while the forest law retained fire provisions for forest protection. Further fragmentation arose later through the disparate statutes that arose as a result of "Bantustan" legislation.
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58. These statutes (in the then Republic) institutionalised veldfire administration through Fire Control Committees in terms of the Forest Act of 1984, and Soil Conservation Committees in terms of the Soil Conservation Act of 1946 and its successor, the Conservation of Agricultural Resources Act of 1983. The former were intended to protect forest resources, and the latter, agricultural resources. Close coordination between statutes emerged with time and is reflected in the current jointly agreed provisions and procedures in the guidelines for Regulation 12 in CARA, for example, in KwaZulu-Natal and the Western Cape.
  59. Control over the use of fire in the open air was exercised through fire prohibition periods in the former case (and these periods though mostly seasonal also extended to the whole year) or regulations designed to protect pastures in the latter.
  60. Within protected areas, the South African National Parks, State Forest managers and provincial conservation agencies have for decades used prescribed fire to manage ecosystems for ecological purposes, as well as for precaution against wildfires.
  61. Promulgation of the Mountain Catchment Areas Act in 1970 led to integrated management of veld on State Forests and adjoining private land, to protect catchment values. This involved veldfire management programmes that included prescribed burning.
  62. An important event in veldfire management was the devolution of large areas of State Forest and the function of mountain catchment management from the national government (Department of Water Affairs and Forestry) to provincial nature conservation departments in 1987. Until then, DWAF had pursued an active programme of invasive plant control integrated with prescribed burning. At about the same time, management of commercial forest plantations in the then Republic passed to a semi-business unit under a trading account, then to SAFCOL, and recently to private companies under lease (the latter including commercially viable plantations in the former homelands). The forest function in government was thus fundamentally transformed, and now focuses on policy and regulation.
  63. Formulation of new forest policy in the White Paper on Sustainable Forest Development of 1996 set a requirement for forest law reform. Given the new Constitution and overall policy environment, government took the course of separating provisions relevant to veldfire management from the forest law, thus leading to the writing of the National Veld and Forest Fire Act of 1998.
  64. This Act was written with wide consultation, including with stakeholders from the fields of agriculture, conservation, disaster management, environment, fire and emergency services, forestry, and others. It was written in the knowledge of the contents of CARA, the then developing National Environmental Management Act, the work of the team developing the Green Paper on disaster management, the emerging constitutional role of local government, and the contents of the Fire Brigade Services Act. It contains provisions that address the linkages to all these fields. It is a statute that enables community-based fire management while introducing new supporting instruments, enforces minimum standards without imposing the details of these, and links emergency management with resources management. The drafters took account of international experience, for example of the policies, statutes, and technologies in Australia.
  65. An important development is the Disaster Management Act, which sets up a new system for anticipatory, coordinated and integrated management of disasters in all sectors, proper cooperative government in the field as a whole, and a coherent framework within which veldfire management (and other disaster sectors) can fit. It places sectoral responsibilities upon relevant sectors, however, rather than transferring these to an all-encompassing disaster management function. Further, it draws disaster management into natural resources and environmental management, a step mirrored in provisions within the National Environmental Management Act.
  66. Since then, the broad field of policy in which the Act falls has been further transformed by progress arising from South Africa's commitments to key global conventions, i.e. the Convention on Biodiversity, and the Convention on the Combating of Desertification. These commitments are progressively mainstreaming biodiversity management and sustainable land management into all policy fields. Likewise, transformation of agriculture policy creates a new arena within which veldfire management must be practised.
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67. Equally profound in its impact is the new role for local government, discussed in greater detail below (see sections 6.2.4 and 8.2.1).
68. Thus, any modern custodian of the fire function encounters the imprint of this history in almost every situation where the Act needs implementation, even in the former homelands. In many cases, existing institutional frameworks are available to transform and build upon, and local best-practice policies, rules and precedents form the elements of new arrangements.
69. One important aspect of this history has been the long and continued linkage between fire protection, veldfire management, and forestry. This has been because forests, both natural and planted, are not only located in the high- and extreme-risk fire-ecology types and are vulnerable to fires in the surrounding grassland and woodland, but also are concentrated patches of contrastingly high biodiversity and asset value. This linkage has fed through to training and education, where forestry programmes have historically provided quality training in integrated veldfire management on a resource-management foundation.

## 5 A DEFINITION OF THE TERM “FIRE FUNCTION”

70. To understand what the “fire function” is that is to be placed with an institution we need to define the term more closely.
  71. The Act is not legislation for the emergency management of wildfires, but rather a statute that introduces certain legal instruments that enable and promote integrated veldfire management. These integrate natural resources management with emergency management, i.e. the Act is about environmental management.
  72. Integrated veldfire management is the systematic management of veldfires by the combination of ecological fire management and management of the wildfire risk cycle. This includes:
    - ecological veldfire management, mainly prescribed burning, which is used to
      - maintain ecological functioning and biodiversity of the relevant fire-ecology type by imitating the natural fire regime
      - maintain or develop the understorey and ground-layer cover for soil and water conservation
      - reduce fuel loads to facilitate wildfire management, mainly fire prevention and suppression
      - burn off unpalatable material which provides poor quality fodder or hinders regrowth
      - control encroachment of undesirable and alien plant species
      - stimulate out-of-season growth to provide fodder in the off-season, and
    - the wildfire risk management cycle, i.e. prevention, preparedness, response and recovery in anticipation of and in the event of wildfires.
  73. Integrated veldfire management is an on-the-ground function and is entirely the duty and responsibility of owners (as defined in the Act) and Fire Protection Associations, with the support of municipal fire services and disaster management, depending on the level of escalation of a wildfire episode. The “fire function” does not include this on-the-ground integrated veldfire management.
  74. In this field, the role of national government, i.e. the “fire function” is to provide the regulatory and support environment for cost-effective integrated veldfire management. The regulatory and support functions arise, in this context, from the Act (but there are co-governing support functions from the Disaster Management Act, the Conservation of Agricultural Resources Act, and other instruments – see later). These support functions constitute the fire function as defined for this investigation, and include:
    - development and implementation of policy and legislation, and the facilitation, leadership and communication required to create the climate of awareness to support this
    - institutional development and capacity building
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- monitoring, evaluation and improvement
- research, development and innovation, and
- enforcement.

75. It is this set of support functions that is at issue in the question about the placement of the function, but answering the question requires clarity on all institutional arrangements regarding integrated fire management.
76. Section 8 below contains further details about these functions.

## **6 THE IMPACT OF THE CONSTITUTION OF 1996 AND NEW POLICIES AND LAWS**

### **6.1 THE CONSTITUTION AND VELDFIRE MANAGEMENT**

77. The Constitution of 1996 impacts profoundly on the system for management of veldfires in several ways:
- the guarantee in the Bill of Rights of the right to a safe and healthy environment, as well as the right to have the environment protected through reasonable legislative and other measures
  - the requirement for cooperative government and the assignment of roles and responsibilities to different spheres of government, especially:
    - the establishment of “wall-to-wall” municipalities; whereas previously, municipalities served town and urban communities (though Regional Services Councils provided some rural services in the former Republic, including some fire service capacity in some parts) now they serve rural communities too
    - the assignment of the primary role of development agent to local government
    - the assignment of fire services to local government
  - the requirement for cooperative government means that any State body, in any sphere, or its agent, must take account of all relevant policies, statutes and strategies of other state bodies in developing and implementing veldfire management.

### **6.2 STATUTES DIRECTLY AFFECTING VELDFIRE MANAGEMENT**

#### **6.2.1 The National Veld and Forest Fire Act No 101 of 1998**

78. This Act replaces the relevant provisions in the old Forest Act regarding veldfire management, and introduces some important innovations that fill the gaps between diverse statutes affecting veldfire management:
- it applies to fires in vegetation in the countryside in general
  - Chapter 2 provides for voluntary Fire Protection Associations (FPAs) of local owners of land (including communal land) for collective veldfire management, and their empowerment through registration and the recognition of their Fire Protection Officers, and sets out their duties and responsibilities; these FPAs are linked to municipal fire services, through the requirement that the officer in the municipality empowered by the Fire Brigade Services Act should be the Fire Protection Officer for the FPA, if able to fill this role; this is a formal system of community-based fire management
  - this Chapter also provides for the formation of Umbrella Fire Protection Associations for a number of Fire Protection Associations; an umbrella association may exercise powers under the Act or perform duties in terms of the Act on behalf of a FPA if the Minister agrees
  - the regulations supporting Chapter 2, especially regarding the duties of FPAs, set out a standard approach to veldfire risk management and expand on the ecological and environmental requirements of the Act
  - Chapter 3 introduces the National Fire Danger Rating System, an early warning system and fire-control support system for the country as a whole, but resolved to local scale within 42 danger
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rating regions

- Chapter 4 sets mandatory requirement for boundary firebreaks in areas of veldfire risk, and Chapter 5 sets minimum standards for readiness for fires, and for fire fighting
- Chapter 6 provides for stringent enforcement measures.

79. The Act provides explicitly for compliance with environmental requirements, as well as for management of risk to life and property.
80. Most parties welcome the Act for its good purpose and principles and its valuable contribution to veldfire management.
81. The Act is not an emergency services law. It links natural resource management by property owners collectively or individually to the integrated veldfire management system: ecological fire management, fire prevention, preparedness, and response, and as such is a piece of environmental management legislation.

### **6.2.2 The Disaster Management Act No 57 of 2002**

82. The Disaster Management Act establishes a National Disaster Management Centre, with the objective to promote an integrated and coordinated system of disaster management, with special emphasis on prevention and mitigation, by organs of state in different spheres, statutory functionaries, and other role-players involved in disaster management and communities. Other relevant duties and requirements are that it:
- must operate within the national disaster management framework
  - guide disaster management plans and strategies
  - manage the coordination and management of national disasters.
83. The Act requires sectoral Departments to develop strategies and plans for disaster management within their spheres of competence.
84. The National Centre is mirrored by Provincial and Local Centres, whose purpose and function are similar to those of the National Centre, but with the obvious difference of geographical scope. They are required to develop disaster management frameworks, as well as strategies and plans, on the same lines as those of the National Centre, and consistent with the national disaster management framework.
85. Note that “disaster management” means a continuous and integrated multi-sectoral, multi-disciplinary process of planning and implementation of measures aimed at:
- a. preventing or reducing the risk of disasters
  - b. mitigating the severity or consequence of disasters
  - c. emergency preparedness
  - d. a rapid and effective response to disasters; and
  - e. post-disaster recovery and rehabilitation.
86. The national disaster management framework, which the Minister will prescribe as a set of regulations, is a key instrument relevant to veldfire management, in that it will, among other things:
- a. provide a transparent, coherent and inclusive policy on disaster management appropriate for the Republic as a whole and
  - b. set out an overall approach to measures that reduce the vulnerability of disaster-prone areas, communities and households, i.e. essentially a risk assessment and management framework.
87. The Department of Provincial and Local Government, which administers the Disaster Management Act, has not yet deployed the Act fully. A key step is to formulate the national disaster management framework, which will give consistency to the deployment of the disaster management function. Without this there is for example no consistency in the assessment of veldfire risk in each municipality.
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88. In the mean time, provinces and district municipalities are in different stages in the deployment of disaster management, some quite far advanced. In certain regions, a close working relationship between disaster management, fire services and the Department of Water Affairs and Forestry has been established and has led to substantial progress in the early steps for the institutionalisation of veldfire management, especially stimulating and guiding the formation of FPAs. However, the situation overall varies, from districts where disaster management strategy and coordination is in progress, to others, with high fire risk, where there is little or no action. From interviews and a scan of several IDPs (e.g. Amathole, Endumeni, Ixopo, Jozini, KwaSani, Umuziwabantu) it is clear that though some municipalities have progressed toward integrated coordinated disaster management, most have not, and intend to address this in the next IDP round. Some have disaster management plans, but focus on emergency response. This together with the work needed on the national disaster management framework indicates the very large effort that is needed in the next few years to place the situation on the footing required by the Disaster Management Act.

### **6.2.3 The Conservation of Agricultural Resources Act No 43 of 1983 (CARA)**

89. The key instrument of CARA, which is administered by the National Department of Agriculture in conjunction with the equivalent provincial departments, is the regulation that provides for veld burning guidelines, designed to maintain pastures and protect agricultural resources. Landowners must comply with these Guidelines, and those intending to use fire outside these prescriptions require a permit from the provincial agriculture authority.
90. Linked to this is the newly launched Comprehensive Agricultural Support Programme (CASP), focused on the poor, the hungry, the beneficiaries of the Programme for Land Redistribution and Agricultural Development (LRAD), and the public insofar as its members enter the sectors linked to agriculture. It provides substantial funding for "sunrise" financing and technical support. The invigoration of farmers' structures and linked entities that will arise from this will be an important facilitator of improved rural resources management in general, including veldfire management.
91. CARA is due to be replaced by what is now the draft Sustainable Use of Agricultural Resources Bill. This statute will among other things provide for Land Care Committees, the analogue of Soil Conservation Committees, which will be important institutions in veldfire management.

### **6.2.4 The Municipal Systems Act No. 32 of 2000**

92. This Act places several duties upon municipalities. Those immediately relevant to veldfire management are:
- to promote and undertake development in the community and
  - to promote a safe and healthy environment in the municipality, as well as to
  - contribute to the realisation of Constitutional rights to property, housing, health care, food, water and social security, and education.
93. It sets out the duty of the municipality to encourage community involvement and consult the community on services, as well as to develop a culture of community participation, and gives the right to the community to contribute to decision-making by the municipality, among other things.
94. It sets out the requirement for Integrated Development Plans (IDPs), the principal strategic planning instrument of the municipality, which is also the prerequisite for municipal budgets. The IDP must contain a spatial development framework, to be replaced by the land use framework in terms of the Land Use Management Bill. It must contain a disaster management plan.
95. Regulations under this Act require Strategic Environmental Assessments for spatial development frameworks.
96. The IDP Guide Pack requires environmental analysis, with environmental problems and risks identified as outputs, to be addressed in the disaster management plan or appropriate projects.
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### **6.2.5 The Fire Brigade Services Act of 1987**

97. The Fire Brigade Services Act provides for the establishment, co-ordination and standardisation of fire brigade services. Local authorities are allowed to establish and maintain a fire brigade service for the following different purposes:
- a. preventing the outbreak or spread of a fire;
  - b. fighting or extinguishing a fire;
  - c. the protection of life or property against a fire or other threatening danger;
  - d. the rescue of life or property from a fire or other danger;
  - e. subject to the provisions of the Health Act, the rendering of an ambulance service as an integral part of the fire brigade service;
  - f. the performance of any function connected with any of the matters referred to in paragraphs (a) to (e).
98. Each fire brigade service must only be employed inside the area of jurisdiction of the local authority concerned, unless the local authority is requested or in terms of a co-operation agreement has agreed to perform those services outside its area.
99. The powers of members of a service set out in section 8 of the Act are typically emergency management powers that may be exercised when a fire has occurred. Detailed provisions are also set out in section 9 dealing with the salvaging of movable property.
100. This Act confers broad powers in order to protect life and property, but does not deal with environmental protection imperatives, nor does it directly address risk reduction or fire prevention.
101. Section 12 deals with entering into mutual co-operation agreements between controlling authorities, in terms of which the parties co-operate on agreed conditions. A controlling authority may also enter into an agreement with other persons in terms of which the controlling authority undertakes to make available its service to that person, or in terms of which that person undertakes to make available material or equipment to the controlling authority.
102. This Act enables local authorities, after consultation with the Board, to make by-laws or regulations for its area of jurisdiction regarding any matter which that local authority deems necessary or expedient to the effective employment of its service.
103. It establishes the Fire Brigade Board, which falls under the auspices of the Department of Provincial and Local Government. The Board has not been active for some time, but has now recently been re-established. The Board has resolved to review this Act.
104. With the new Constitution, and the passage of the Municipal Structures Act, the scope of fire services extended from the towns and cities, to the entire countryside.

### **6.3 OTHER STATUTES THAT DETERMINE THE STRATEGY FOR AND STANDARDS OF VELDFIRE MANAGEMENT**

105. Boxes 3, 4 and 5 outline provisions in additional statutes where the administrator of the National Veld and Forest Fire Act will need to apply its mind.
106. In addition, the Communal Property Rights Bill, which provides for communal title deed and establishes committees for the administration of land owned by a community, will affect the manner in which such communities engage with FPAs, and will facilitate community membership of FPAs.

### **6.4 LITIGATION IN THE NEW STATUTORY ENVIRONMENT**

107. In at least two municipalities, landowners are currently suing the municipal government for fire damages, on the grounds that the municipalities concerned were aware of the risk and did not take reasonable steps to manage the risk. Whatever the outcome of these cases, a situation that results in excessive litigation is undesirable.
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108. Government has a duty of care with respect to veldfire management, given its statutory role and being aware of the risks and their remedies. Government needs to guide all parties so that unnecessary litigation is avoided, and does not inhibit integrated veldfire management.

## **7 WORKING ON FIRE AND UKUVUKA**

### **7.1 WORKING ON FIRE**

109. Working on Fire (WoF) is a programme funded by government according to Poverty Relief criteria. It now has a budget of R35 million per year, and is administered by the National Disaster Management Centre in the Department of Provincial and Local Government.
110. The Programme Vision is "To promote an integrated approach to fire management, initially in eight predetermined regions within seven provinces, through assistance in the establishment of embryonic Umbrella Fire Protection Associations (UFPAs), and associated Fire Protection Associations (FPAs), co-operative development of fire protection measures, reduction of fire hazards, improved veldfire control, and the implementation of appropriate veld-management strategies and the empowerment of communities affected by fire, in accordance with the policies and practices of the National Veld and Forest Fires (sic) Act of 1998 and the Poverty Relief Fund". It has 19 separate objectives, which include job creation, skills development, capacity and social upliftment. At this stage the programme clearly needs to be better focused (see also Table 2, below).
111. WoF has established a Section 21 company as Implementing Agent, with a board co-chaired by a representative of the National Disaster Management Centre, and one from the Working for Water Programme.
112. The WoF business plan includes the intent to establish it as a public-private partnership, according to Treasury guidelines, and National Treasury is in anticipation of this.
113. The Head of the National Disaster Management Centre is accountable for the administration of the Programme. The Programme is managed by a Programme Manager, advised by a Programme Implementation Committee, who oversees six regional Project Managers, advised by Steering Committees.
114. The Programme has a Programme Steering Committee (PSC) with members representing 17 entities, as well as an Executive Committee, the latter including representatives of commercial service-providers, ex officio.
115. WoF has progressed rapidly and established substantial capacity to deliver its purpose. Its rapid initial attack capabilities have already delivered vital emergency response services in several areas. A large number of previously unemployed people have now been taken up in the Programme in each of the eight chosen regions, been properly trained, and skilled to provide their service. It already provides a useful and necessary support to FPAs in formation, and to landowners, communities, municipal fire services, and disaster management within its eight areas of operation, or if outside, to those who contribute to cost and to needy communities who do not contribute to cost.
116. However, WoF is also currently attended by problems, largely because it has moved to a position in which:
- the partnership with DWAF is weak
  - WoF initiatives in relation to FPAs have begun to conflict with the DWAF programme
  - initiators of FPA formation locally find WoF initiatives to be in conflict with theirs and with the provisions in the Act and the guidelines from the Department, and
  - doubts about governance have arisen.
117. The process managed by DWAF aimed at successful implementation of the Act as well as the WoF Vision are at hazard because of this situation.
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118. The Programme is very closely aligned with Working for Water. For this latter Programme, the recent R1.5 million evaluation by Common Ground Consulting, though not yet available, found that significant improvements were needed in several areas if it is to achieve its core purpose (the sustainable control of alien invasive plants), i.e. urgent requirements for:
- improved accountability through clarification of mandate and through adequate strategic planning and improved data and document management
  - adequate strategic planning, and improved data and document management
  - effective partnerships with government
  - more efficient institutional arrangements and better management
  - better linkages between programme inputs, outputs and impacts and
  - the Programme lacks an enabling legal and institutional environment.
119. Analysis of the 2004-2005 business plan for WoF suggests that WoF is at hazard from the same deficiencies, except perhaps the last.
120. In a meeting between DWAF and WoF on 5 February 2004, DWAF agreed that WoF should continue to develop an active "fire fighting organisation", and that there should be liaison on "awareness campaigns" and "try to combine efforts in this regard". They also agreed on liaison about DWAF's registration of FPAs.
121. At its last meeting, WoF's Executive Committee resolved that it required improved governance structures.
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**Table 2. Outline of roles and responsibilities of parties involved in integrated veldfire management and the supporting role of the fire function. Secondary responsibilities are those that attach to agents of or service providers to the institutions with primary responsibility, or who do on-the-ground implementation. The role of Working on Fire has been highlighted to assist in achieving clarity on this matter.**

Core or non-core functions	Description	Entity with primary responsibility	Entity with secondary responsibility	Role of Working on Fire
Core	Development and implementation of policy and legislation, and the facilitation, leadership and communication required to create the climate of awareness to support this	Custodian	Contracted service providers, such as consultants	WoF has funds for communication and awareness but no plan yet. Also involved in facilitating formation of FPAs.
	Institutional development and capacity building	Custodian	Contracted service providers, such as consultants	WoF proposes to support development of FPAs and Umbrella FPAs and has supported skills development in DWAF on a small scale.
	Monitoring, evaluation and improvement	Custodian	FPAs report annually	
	Research, development and innovation	Custodian	Service providers (Science Councils, Universities, etc)	WoF has funds for research but no plan yet.
	Enforcement	Custodian provides guidelines	FPOs, SAPS, and Chief Fire Officers (also Forest Officers)	-
Non-core	Ecological veldfire management	Owners	FPAs and their FPOs (strategies; rules and enforcement of them).	WoF proposes to provide a service to owners
	Wildfire risk management cycle			
	prevention	Owners	FPAs and their FPOs (strategies; rules and enforcement of them): strategies and plans. Municipalities: Fire Services and Disaster Management	WoF proposes to provide a service to owners
	preparedness	Owners	SA Weather Service: Fire Danger communication; FPAs and their FPOs: strategies and plans, and suppression support and incident command when a veldfire threatens to spread. Municipalities: Fire Services and Disaster Management, depending on local strategies and plans.	-
	response (suppression)	Owners	FPAs and their FPOs: strategies and plans, and incident command. Municipalities: Fire Services and Disaster Management	Major service provision role; largest part of budget assigned to aerial response and spotting (about R13 m of budget); ground teams also provide response (about R12 m of budget).
	recovery	Owners	Municipalities (e.g. through Disaster Management); Working for Water may provide invasives control services	-

## 7.2 UKUVUKA FIRESTOP

122. The Ukuvuka Firestop Campaign aims to increase awareness, fund eradication initiatives, and rally the support of local authorities, companies and landowners. It was formed in response to the fires on the Cape Peninsula in January 2000, and its scope of responsibility encompasses the Cape Peninsula and its fringes.
123. Ukuvuka Firestop functions firstly as a vehicle that can accommodate processes in the management of veldfires and associated problems on the Cape Peninsula into an operating environment suitable for rapid innovation, development and stabilisation of these processes. It then facilitates the uptake of defined and stable processes within the implementing agencies. As such, Ukuvuka Firestop takes risky elements from the routine processes of implementers, tests and improves them, and returns them when they can be managed with low risk. It also funded the preparation, through labour intensive methods, of a series of firebreaks on the perimeter of the Table Mountain National Park.
124. Secondly, it acts as a facilitator to build relationships among disparate organisations around common objectives.
125. It focuses on community-based environmental and natural resources management.
126. There have been discussions within the WoF Executive Committee about Ukuvuka playing the role of Umbrella Fire Protection Association for the Western Cape, without conclusion.
127. Ukuvuka Firestop is a four-year project sponsored by companies in the media, insurance and other sectors, and comes to an end at the end of June 2004. There are indications that funding will then be available for a new project.
128. At the time of writing, Ukuvuka Firestop was under review, and the results of this were not yet known. Though it has been proposed as a model to be followed nationally, any application of such a model in future would need judicious selection of role and function, and take proper account of the findings in the review.

## 8 DETAILED ANALYSIS OF THE FIRE FUNCTION AND LINKED ON-THE-GROUND VELDFIRE MANAGEMENT FUNCTIONS AND THE DISTRIBUTION OF ROLES AND RESPONSIBILITIES

### 8.1 INTEGRATED VELDFIRE MANAGEMENT AND THE PURPOSE OF THE ACT

129. The stated purpose of the National Veld and Forest Fire Act is to "... prevent and control veld, forest and mountain fires ..." but beyond the minimum standards for prevention, preparedness and response in Chapter 4 and 5, it requires FPA veldfire management strategies to address integrated veldfire management; the ultimate purpose is therefore to institutionalise integrated veldfire management wherever fire risk justifies it.

### 8.2 THE FUNCTIONS REQUIRED IN IMPLEMENTING THE ACT

#### 8.2.1 Overview: the duties and responsibilities of different parties

130. The Act, read together with other relevant statutes, places responsibilities on several different parties to fulfil certain functions in integrated veldfire management.
  131. Here, we distinguish between core and non-core functions. **Core functions** are those, which cannot or should not be relinquished by the **national custodian** of the Act, and for which national government, currently DWAF with its partners, must be accountable (even where a function is delegated or assigned). Non-core functions are those that fall within the spheres of FPAs or local government. Appendix B lists functions arising from the National Veld and Forest Fire Act and classifies each as core or non-core.
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132. In addition to national government, **provincial government** has certain core functions, principally those relating to sustainable development (growth and development strategies), environmental, land use and disaster management frameworks, and environmental and agricultural services, that are linked with but do not necessarily direct veldfire management.
133. **Local government** must provide fire services as well as coordinate disaster management. In areas at risk of veldfires (a) where FPAs exist, local government provides FPAs and their members with the services of the FPO, if able, with technical services as well as equipment and response services, and (b) where there is no FPA, similar services directly to owners, according to the contents of IDPs and municipal budgets; government financial support to FPAs would by policy flow through local government, via fire services and/or disaster management. In addition, through the powers of the Fire Brigade Services Act, the municipality may and does pass by-laws for the enforcement of wildfire prevention and suppression measures, which where FPAs exist may support, supplement, or replace the rules of the FPA.
134. **FPAs** serve their members in the diverse ways as provide for in the Act, fundamentally through collective integrated veldfire management, i.e. above and beyond individual owners' responsibilities, according to the agreements among members as set out in the business plan for each FPA. This provides common-good benefits, such as strategic firebreaks and other risk-management strategies, which are more cost-effective than individual effort by owners, enforcement of locally agreed rules, incident command for escalating wildfires, and so on. In addition, the common rules secure reduced risk, and serve to share risk where appropriate. The **FPO** is the chief executive of the FPA.
135. **Owners** of land, private, state or communal, implement integrated veldfire management plans on their own properties. Owners have the first and primary responsibility not only for ecological fire management, but also for the prevention and control of wildfires on their properties, within reasonable bounds. Within FPAs they meet standards as agreed among members and approved by DWAF through the registration of the FPA. Outside FPAs, owners comply with the minimum standards set by the Act.
136. The **Disaster Management** system provides for the coordination of the management of the disaster management cycle as wildfires escalate into local disasters (i.e. threatening or actual disasters), and from there to provincial and national, based upon local strategies and plans. The National Disaster Management Centre has arranged that, where justified, the start-up costs for local disaster management centres may be met from its funds, these being principally for smaller capital items.
137. Enforcement of the provisions in the Act and in related legislation is largely a local function, done by Fire Protection Officers, police officers, Chief Fire Officers, and forest officers.
138. Umbrella Fire Protection Associations may be formed by FPAs within a region, where the FPAs find a need for these structures. The intention of the Act is that Umbrella FPAs will provide a common service for the FPAs within its area.
139. Working on Fire acts as a service provider to owners, FPAs, and municipalities, and the National Disaster Management Centre (as well as to the Department of Water Affairs and Forestry to support fast-tracking of FPAs); this role will change once it is formed as a PPP.

### 8.2.2 Core functions

140. Boxes 1 to 5 set out in greater detail the core functions required of the custodian including those arising from statutes other than the National Veld and Forest Fire Act. Table 2 provides a summary.
  141. These core functions fall into several classes:
    - Policy and legislation: this function includes the passing of regulations as required in Chapter 6 of the Act, legislation amendments, development of policy for implementation of the Act, and assurance that implementation of the Act is compliant with its provisions and the provisions in other relevant statutes (see Boxes 1-5); this function also requires systematic, transparent and accountable management of processes for the implementation of the Act, for example, registration of FPAs, and implementation of the Fire Danger Rating System; it includes communication and awareness raising to create a climate that facilitates implementation of the
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Act and to communicate progress

- Institutional development and capacity building: as a core function, this involves the internal development of the custodian as an institution for the delivery of the fire functions, and promoting the development of external institutions and their capacity by systematic conversion of function materials into teaching and training modules for use by service providers outside the custodian
- Monitoring, evaluation and improvement: systematic compliance with the reporting requirements of the Act and related statutes, including the development of information systems for this purpose, and from this, identification of needs for improvement through transfer of best practice or through research and development; this includes support to FPAs in their reporting, and evaluation of their annual reports
- Research, development and innovation: systematic promotion of research on veldfire management through South Africa's science and technology system
- Enforcement: support to local enforcers through development of guidelines.

142. These functions also define the core competencies needed of DWAF or its successor, i.e.:

- business process management and information management, the latter especially regarding South Africa's veldfire environment
  - principles and nature of integrated veldfire management and its relationship with biodiversity and natural resources management, and risk management
  - management of service providers in e.g. fire danger rating systems, information analysis, and research, development and innovation
  - management of technical support services, and
  - monitoring, evaluation and improvement systems and applications.
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**Box 1. Core functions arising from the provisions in the National Veld And Forest Fire Act.**

**Chapter 2: Fire Protection Associations (FPAs)**

- Registration of FPAs and Fire Protection Officers, including the designation of government officer as FPO if FPA unable (s. 6(4)).
- Financial and other assistance in terms of the Act (but not instead of local government finance).
- Custodianship and evaluation of FPA annual reports.
- De-registration of FPAs.

**Chapter 3: Fire Danger Rating (NFDRS)**

- Preparing and maintaining a fire danger rating system, and consulting about the system (s 9(2)).
- Dividing the country into regions for fire danger rating.
- Requiring FPAs to provide information.
- Communicating the fire danger ratings, publishing warnings and ensuring that records are kept.
- Delegating NFDRS powers and duties to SA Weather Services or successor, or other organisation.

**Chapter 4: Veldfire prevention through firebreaks**

- Exemption from duty to prepare and maintain firebreaks.

**Chapter 5: Fire fighting**

- Agreements for mutual assistance (at national level).

**Chapter 6: Administration of the Act**

- Making regulations.
- Delegation of powers and duties.
- Assignment of powers and duties.
- See to the National Veldfire Information System.

**Box 2. Core functions arising from the provisions in the Disaster Management Act.**

**Chapter 2: Intergovernmental structures and policy framework**

- Intergovernmental Committee on Disaster Management: the Minister would sit on this Committee and require advice from the Department for this purpose.
- National Disaster Management Advisory Forum: the custodian would need to sit in this Forum (as DWAF does now as a member of the precursor Interdepartmental Disaster Management Committee) and, among other things, advise on the veldfire component of the national disaster management framework.
- National disaster management framework: the custodian would need to contribute to this through the above Forum.

**Chapter 3: National disaster management**

- Disaster management information system: the custodian would need to provide veldfire information for this system.
- Disaster management plans and strategies: the custodian would need to develop the appropriate plan and strategy for the veldfire sector, and make this an integral part of its own strategy.

**Chapters 4 and 5: Provincial and municipal disaster management**

- There are analogous duties and responsibilities required of sectoral organs of state in the provincial and local spheres.
- The custodian would need to play its part in provincial forums, and the development of provincial disaster management plans and veldfire management plans and strategies.
- The custodian would not need to play an analogous role in the local government sphere if (a) the provincial disaster management framework provides adequate guidance to local government and (b) it ensures that IDPs are adequately informed about veldfire management.

**Box 3. Core functions arising from the provisions in the National Forests Act.**

**Chapter 2: Sustainable forest management**

Assure compliance with the principles to guide decisions affecting forests, i.e.

- Principle (c) forests must be developed and managed so as to—
  - (i) conserve biological diversity, ecosystems and habitats;
  - (ii) sustain the potential yield of their economic, social and environmental benefits;
  - (iii) promote the fair distribution of their economic, social, health and environmental benefits;
  - (iv) promote their health and vitality;
  - (v) conserve natural resources, especially soil and water.

Assure promotion and enforcement of sustainable forest management through

- (a) determining
  - (i) criteria on the basis of which it can be determined whether or not forests are being managed sustainably;
  - (ii) indicators which may be used to measure the state of forest management; and
  - (iii) appropriate standards in relation to the indicators; and
- (b) creating or promoting certification programmes and other incentives to encourage sustainable forest management.

The Minister would need to monitor the incidence and consequences of fires in forests, and report on this, among other things, every three years to Parliament.

**Box 4. Core functions arising from the provisions in the National Environmental Management Act.**

The custodian would need to assure compliance with the principles in Chapter 1 of the Act, among others, that:

- (a) people and their needs are placed at the forefront of veldfire management, as a field of environmental management.
- (b) veldfire management contributes to sustainable development,
- (c) veldfire management, as part of sustainable development, should avoid, minimise or remedy:
  - (i) the disturbance of ecosystems and loss of biological diversity
  - (ii) pollution or degradation of the environment
- (d) as well as those requiring environmental justice, responsibility for environmental safety and health consequences of policies, programmes and projects that may affect veldfire management, the participation of interested and affected parties in environmental governance, precaution, workers' safety, and so on.

However, we need to note that the National Veld and Forest Fire Act as a whole is in compliance with these principles.

The custodian would need to ensure that veldfire management is included in the environmental implementation plans and environmental management plans required by the Act, to be submitted for scrutiny by the Committee for Environmental Coordination.

**Box 5. Core functions arising from additional statutes.**

**THE MUNICIPAL SYSTEMS ACT AND OTHER STATUTES ABOUT LOCAL GOVERNMENT**

The custodian would need to ensure that IDPs systematically address veldfire risk (best achieved through the veldfire component of the National Disaster Management Framework and the National Veldfire Management Strategy and Plan).

The custodian would need to ensure that any financing of veldfire management does not conflict with the financing of local government and the statutory role of local government; local fire services are to be funded through rates income or transfers from the national fiscus via the Equitable Share.

**THE BIODIVERSITY ACT**

The custodian would need to ensure that biodiversity planning (Chapter 3 of the Act) takes account of veldfire management requirements, and that the veldfire management strategies of FPAs and the veldfire management elements of disaster management frameworks, strategies and plans comply with biodiversity planning.

The custodian would also need to work closely with the SA National Biodiversity Institute, created through the Act as successor to the National Botanical Institute, to ensure that policies, principles and strategies for integrated veldfire management comply with the national biodiversity framework and with bioregional conservation plans, and vice versa (see also Section 2, above).

**THE AIR QUALITY MANAGEMENT BILL**

The Air Quality Management Bill will replace the Atmospheric Pollution Prevention Act of 1965.

The Bill provides for a national framework for achieving the object of the statute, which will bind all organs of state, and thus the custodian. It requires from each national department or province that must submit environmental implementation plans and environmental management plans in terms of the National Environmental Management Act to prepare air quality management plans. It provides for the listing of activities that result in atmospheric emissions, which would then require emission licences.

Since smoke from veldfires is a concern in some municipalities, this Bill once enacted would require from the custodian its effective participation in the development of the national framework and its preparation of an air quality management plan for veldfire emissions that together provide a fair and workable regulatory environment for veldfire management.

**THE LAND USE MANAGEMENT BILL**

The custodian would need to ensure that the national, provincial and local land use frameworks provide for veldfire management.

**8.2.3 Functions of WoF and Ukuvuka**

143. The Working on Fire Programme intends to provide two principal outcomes:

- improved wildfire response through helicopter and spotter aircraft services as well as establishment and performance of 40 rapid response/fire prevention teams in eight regions; these items are to employ about R29 million of the R35 million budget, and
- accelerated establishment of FPAs through piloting: R1 million of the budget.

144. WoF thus addresses mainly the non-core element of integrated veldfire management, and part of the core functions, i.e. FPA development, communication and awareness, and research (see also Table 2).

145. Ukuvuka has been promoted as a possible model to be applied at national level. However, it may be better for government to procure a bundle of services through a contracted national task team for process improvement and innovation.

## **9 PROGRESS IN THE IMPLEMENTATION OF THE NATIONAL VELD AND FOREST FIRE ACT**

146. The Department has implemented a systematic strategy for implementing the Act, derived after consultation with stakeholders.
147. It established, staffed and funded a Sub-Directorate for Fire Regulation, and assigned the role of Fire Advisor to staff in each of its regional offices.
148. Regulations to support Chapter 2 have been gazetted, and the notice for Chapter 3 is in progress; once the latter has been gazetted, Chapter 3 will take force, and the provisions in the old Forest Act and its regulations for fire prohibition periods will be withdrawn.
149. The procedure for the registration of FPAs has been defined and implemented, and guidelines for FPAs to follow in developing a business plan have been set.
150. It commissioned research to identify and adopt a system to support Chapter 3 and is currently reaching an arrangement with the SA Weather Service for forecasting and communicating danger ratings, which will soon be implemented after current trials in Mpumalanga and KwaZulu-Natal.
151. It has initiated an interdepartmental project to develop a strategy for enforcement of the provisions in the Act.
152. It has developed and implemented the prototype for the Veldfire Information System to support the reporting requirements in the Act.
153. It has published and distributed widely a Veldfire Bulletin, which serves to inform stakeholders on the interpretation and application of the Act, which has been well received and proven to be effective in helping many of those involved in veldfire management.
154. All aspects of the administration and implementation of the Act have been captured in effective training materials, and the Department has used these to train their own staff as well as staff from conservation agencies, fire services, and disaster management.
155. In addition, it has after thorough consultation, prepared several policy guides to support the process of implementing different provisions in the Act. These include policies on:
- Umbrella FPAs
  - Exemptions to Prepare Fire Breaks
  - Financial Assistance to FPAs
  - Compliance and Enforcement.
156. The Department, with the assistance of the UK Department for International Development, accelerated development and implementation of its strategy through periodic engagement of a core team of consultancy services, ranging from research through to training.
157. In several provinces, the Department's Fire Advisors have been effective in engaging with Disaster Management offices, fire services, private landowners, and communities, to promote the formation of FPAs. In others, however, it appears not to have made the expected progress.
158. Chapters 4 and 5 have already made an impact, accelerating the systematic preparation of firebreaks, and prompting owners of property to attend to the minimum standards for fire fighting.
159. Across the country, 117 FPAs are in the initial stages of formation and 11 in the advanced stages. Four have been registered. Early-adopter FPAs have readily implemented the guidelines for FPA business plans, issued by the Department as an aid to FPAs in planning to address their duties.
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These guidelines focus on a risk-management standard for veldfire management strategies, environmental requirements, and the standards and rules for FPAs.

160. Some FPAs complain that this guideline is too onerous. This appears to be the case when local expertise is not available or has not yet been mobilised.
  161. Many FPAs indicate that selection and employment of a Fire Protection Officer is difficult to achieve, and that this is a major barrier to registration. The problem is twofold, i.e. lack of available competent people, and lack of funds. This appears to be the most important obstacle to progress currently.
  162. Many parties have expressed concern that there needs to be great care in guiding and registering FPAs. This is (a) to ensure that their strategy and rules comply with environmental and natural-resource management standards (e.g. from the Biodiversity Act, and CARA) and (b) because of the legal force that the rules will have once an FPA is registered by government, especially in prosecutions and litigation.
  163. Local government, through either the fire services or disaster management or both, has proved very effective in supporting FPA formation in a few cases, working with DWAF and other parties. This appears to be where (a) IDPs have identified veldfire risks and this is reflected in local budgets and (b) where the local leadership is knowledgeable about the intent and provisions of the Act. Local government support is a critical requirement for effective progress.
  164. Overall, there has been good progress considering the overall challenge to service delivery in South Africa. The Act has been very well received by most parties. The system is on the threshold of making a breakthrough in veldfire management.
  165. However, there is a major and general concern that implementation must proceed much faster.
  166. There are perceived conflicts between the National Veld and Forest Fire Act, the Fire Brigade Services Act, and the Disaster Management Act, especially in the field of managing the risk cycle (prevention, preparedness, response, and recovery). This appears to be mainly the case among fire services staff, but some disaster managers perceive an opportunity for better management if the Disaster Management Act and the National Veld and Forest Fire Act were to be implemented alongside each other. (Other disaster managers believe that the National Veld and Forest Fire Act should remain the responsibility of a sectoral department, so as not to undermine the statutory coordinating and integrating function of disaster management.)
  167. It has been difficult to isolate the reasons for the apparent conflict with the Fire Brigade Services Act, and commentators themselves seem unsure of this, sometimes contradicting themselves. Some evidence is for the following:
    - because fire services currently often (but evidently not everywhere) lack the capacity, they are unable to provide the person for the position of FPO; in these cases they then anticipate jurisdictional conflict between Chief Fire Officer and FPO
    - even if they have the capacity, fire services personnel feel they do not have the multidisciplinary skills to fulfil the role of FPO in integrated veldfire management.
  168. These kinds of problems are not inherent in the provisions in the Act. With goodwill and common purpose the current problems can be overcome by mutual assistance agreements, the delegation of powers and duties, and other similar administrative arrangements.
  169. In any event, starting a process of statutory review at this stage will add an unacceptable increment of risk to an already unacceptable situation across the country.
  170. Furthermore, there are several examples where fire services institutions comfortably proceed as local agents for the implementation of the Act.
  171. Among wildlife managers and environmental agencies there is also sometimes a perceived conflict between the National Veld and Forest Fire Act and the Biodiversity Act, but this too is simply a matter of cooperative government.
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## 10 THE SITUATION AND EXPERIENCE IN OVERSEAS COUNTRIES

172. The international study encompassed Australia, Canada and Indonesia, chosen to represent diverse environments, political systems and history.
173. It examined forest fire management in the context of “fire circumstance” (history, cause, behaviour, and regime), the fire problem, the government system, and the policy and institutional landscape for fire management in each.
174. No model from any of these cases fits South Africa well. The fire-management systems developing and applied in these countries do not readily correlate with their constitutional systems and institutions. Apparently, political and social history and environmental factors outweigh all others. It seems in addition that South Africa's modern Constitution and the evolution of policy according to its requirements make the country unique with respect to policies, statutes and institutions regarding veldfire management.
175. However, some general principles are appropriate. Note that most of these apply mainly to on-the-ground veldfire management, and not so much to core functions.
176. First, the form of an institution needs to follow from the functions it performs - institutional form follows function. The fire management function is informed by underpinning knowledge and framed by management objectives.
177. Underpinning knowledge to inform the fire management function is:
- fire cause (including the ignition, source and motivation),
  - fire behaviour and
  - fire impacts.
178. Management objectives are required for each component of the fire management cycle – prevention, preparedness, response and recovery
- prevention objectives are based on an understanding of Fire Cause and Fire Impact
  - preparedness objectives are based on an understanding of Fire Behaviour
  - response objectives are based on an understanding of Fire Behaviour and Fire Impact
  - restoration objectives are based on an understanding of Fire Impact.
179. The form of an institution should follow from the functions required of that institution. In relation to fire management the form of an institution should follow from the primary functions that the agency undertakes in relation to fire management. Function might include: emergency suppression response, land management, public education, regulatory enforcement, cooperation, monitoring, training and public education among others. The institutional arrangements that can best deliver the appropriate level function within the context of fire management can be determined once function is clear. Appropriate institutional arrangements for fire management should be based on clear understanding of the functional needs of fire management in South Africa.
180. There is no single specific institutional structure that is appropriate for all fire management organisations or all fire management situations. Each circumstance in each location at each level of government is unique and requires analysis to determine a suitable or appropriate structure.
181. A fire management institution is a complex system that manages a complex process that has to be broken down so it can be managed to meet objectives. Consequently principles and processes are needed to ensure consistency, flexibility and outcomes.
182. The following are some principles for fire management institutions:
- all lands should have appropriate fire management coverage
  - all fire should be managed
  - a lead organisation or stakeholder for fire management should be identified. Where there is more than one fire management organisation coordination should take place.
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- fire management function should be practised at the most effective/efficient geographic scale and match the conditions present at that scale (national through to community), and
  - fire management decisions should be delegated to the lowest practical administrative level.
183. In addition, once integrated fire management becomes subordinate to fire suppression, the risks of wildfire and cost of management increase (cases such as Yellowstone National Park and the Blue Mountains National Park adjacent Sydney being illustrative, but there is much more).
184. Furthermore, in Canada, where responsibility for fire management is evidently shifting from local to the centre, it is a sign that land owners and managers are relinquishing their own responsibilities and this causes the concentration of capacity and competence at the centre. It is not clear whether this is because of human resource limitations, or institutional inertia (the provincial Canadian forest services historically had most firefighting competence). The evidence indicates that such a trend causes rising costs of fire suppression. The Canadian government spends the equivalent of about R6 per ha per year on fire suppression over about 50% of the country, on land that is mostly wilderness, and these costs are rising. In South Africa, the analysis in this report suggests that average fire-suppression costs across medium to extreme-risk regions should be less than one Rand per hectare per year, if integrated veldfire management is practised.
185. The following were some institutional principles for fire management:
- be focused on outcomes not creating outputs
  - decision-making should be clear and communicated
  - the organisational structure should be used at all times for communication of information, issues and decisions
  - responsibilities should be made clear and performance checked
  - staff should be well informed about all processes and functions relevant to their institutional mandate
  - "soft" flows of information should be enabled
  - routines and processes must have a clear outcome (based on agenda, reporting, updates)
  - processes should be transparent and information freely available
  - routines should be clearly established for the staff involved and understood by them.
186. Implementing these principles yields the following:
- clear communication
  - heightened understanding and awareness
  - strengthened foresight for management
  - improved coordination
  - enhanced organisational cohesion and culture.

## 11 OPTIONS, CRITERIA, AND IMPLEMENTATION

187. The following Section presents the alternatives for the future placement of core functions in the administration of the Act, which have been identified through interviews with a range of stakeholders, with a brief statement of the motivations for each given alternative. After this follow two sections, in which criteria for choice are outlined (section 11.2) and one outlining a road map with prerequisites for successful administration whichever alternative is chosen (section 11.3). There is then a recommended ranking of options, according to the set criteria (section 11.4).
188. Section 11.3 also deals with national governance arrangements, the option for Working on Fire, and a short-term "task force" to provide services in support of the implementation of the Act. These elements of the strategy for implementation are required whichever custodian is chosen.
189. For the local arrangements and the financial estimates in Appendix C, we assume the following:
- FPAs will receive more or less support from the district or local municipality, depending on the
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priority given to veldfire management in the relevant IDP; any finance from government sources will come to the FPA through the municipality

- FPAs in regions of high and extreme risk will have salaried FPOs, paid from municipal funds; in the medium-risk region, FPOs will be part-time, receiving an allowance from the municipality; in the short run, arrangements for FPOs will be pragmatic, according to locally available human resources, with perhaps FPOs temporarily assigned from owners with resources
- local Disaster Management officers will co-facilitate the formation of FPOs with the Departmental Fire Advisors, the latter providing expertise and communication skills
- Umbrella FPAs will be formed and recognised, with powers delegated by the Department, once formed FPAs have grouped themselves and each group has agreed on the common services they seek from their umbrella; umbrella FPAs will be funded from contributions from FPAs.

190. Appendix C is an indicative financial plan for FPAs.

### **11.1 OPTIONS FOR THE CUSTODIAN AND THE CRITERIA TO APPLY IN A CHOICE**

191. Alternative administrative arrangements, as identified by stakeholders, are as follows:

- A. THE DEPARTMENT OF WATER AFFAIRS AND FORESTRY
- B. THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND TOURISM
- C. THE DEPARTMENT OF AGRICULTURE
- D. THE DEPARTMENT OF PROVINCIAL AND LOCAL GOVERNMENT: NEW ENTITY
- E. THE DEPARTMENT OF PROVINCIAL AND LOCAL GOVERNMENT: NATIONAL DISASTER MANAGEMENT CENTRE
- F. REPEAL THE NATIONAL VELD AND FOREST FIRE ACT
- G. ASSIGN ADMINISTRATION OF DIFFERENT CHAPTERS OF THE ACT TO DIFFERENT AGENCIES.

192. The last two options have been rejected in this analysis (see below).

193. Three further options, whose evaluation is outside the scope of this project, are:

- a. move the entire Forestry function to another Department, probably best DEAT,
- b. create a new Department for Sustainable Natural Resources Management, which would draw together appropriate functions from many current Departments, as well as the fire function, and
- c. assign custodianship to an independent special agency; this possibility must be addressed by the custodian, which must be a government Department, since only the Minister may make assignments or delegations of this kind.

194. The criteria to apply in making a choice are ones that support achievement of the strategic goals (see 11.2 below). Stakeholders generally identified these goals as vital prerequisites for rapid progress in managing veldfire risk in South Africa (see Section 2, above). The criteria to support these goals developed from a synthesis of views offered in interviews and workshops, and obvious policy considerations, as well as input by members of the consultants' team and staff of DWAF.

195. Note again that the choice among options does not involve assignment of on-the-ground integrated veldfire management, which is not part of the fire function. In none of these options would, as a matter of policy, the custodian become involved in firefighting.

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Table 3. Outline of synthesised criteria and sub-criteria to apply to the choice among candidate options for the fire function.

Criteria and sub-criteria	Assessment of relevance
<p>Best functional fit within the mandate of the custodian and have appropriate and committed leadership and management</p> <ul style="list-style-type: none"> <li>• Adequate affinity with other disciplines within the custodian</li> <li>• Strategic fit</li> <li>• Infrastructure and organisation that supports geographical reach</li> <li>• Able to mobilise political support at the highest level</li> </ul>	<p>Appropriate and relevant to choice, except that in principle, each candidate can have equally appropriate and committed leadership.</p>
<p>Best prospect of coordination, integration and partnership</p> <ul style="list-style-type: none"> <li>• Best able to collaborate and work with partners</li> <li>• Results in least conflict with relevant policy fields</li> <li>• Most effective communication and awareness</li> <li>• Have a service delivery track record and orientation</li> </ul>	<p>Neutral: each option potentially able to satisfy this, given the system of government that is operating; except the sub-criterion on conflict with relevant policy fields.</p>
<p>Best prospect of appropriate competence and capacity</p> <ul style="list-style-type: none"> <li>• Competence and capacity in integrated veldfire management, natural resources management and environment management</li> <li>• Competence and capacity in relevant policy and law</li> <li>• Best able to handle the levers of government</li> <li>• Best able to manage implementation processes</li> <li>• Able to deliver information and advice</li> <li>• Appropriate resourcing assured</li> </ul>	<p>Neutral: each option has the same potential to create competence and capacity</p>
<p>Least disruption to ongoing implementation</p> <ul style="list-style-type: none"> <li>• The best institutional memory and systems</li> <li>• Best able to retain competent staff</li> <li>• Least likely to compromise existing processes, relationships and goodwill</li> </ul>	<p>Appropriate and relevant</p>

Table 4. Summary of options and the detailed assignment within each. See Departmental Strategies ([www.gov.za](http://www.gov.za)) for details.

Candidate Department	Programme or Strategic Objective within Department's strategy	Key Focus Area	Functional area/Section	Structural entity (-ies) to be accountable	Comments
Water Affairs and Forestry	Forestry	KFA 3: ensure sustainable forest management in South Africa by developing effective oversight of the sector and facilitating co-operative government. [In the draft of the revised strategy, the appropriate KFA is KFA 1: Promote an enabling regulatory environment for Sustainable Forest Management]	Chief Directorate: Forestry	Sub-Directorate for Fire Regulation to become a Directorate Directorate.	National Veld and Forest Fire Act identified as core business in strategy. New sub-programme needed. However, this is not clearly reflected in the strategy for the Functional Area.
Agriculture	Sustainable Resources Management and Use	Land Use and Soil Management (linked with Sustainable Resources Management in Provinces)	Sustainable Resources Use and Management	Land Use and Soil Management (enhanced)	-
Environmental Affairs and Tourism	Biodiversity and Conservation	Promote and conserve South Africa's biodiversity, and ensure sustainable utilisation of its resources for the benefit of all.	Chief Directorate: Biodiversity and Heritage	SA National Biodiversity Institute (enhanced).	-
Provincial and Local Government: new entity	Strategic objective 3: Accelerated Service Delivery	Ensure delivery of a basket of services that include electricity and water in all municipalities.	?	New Directorate.	-
Provincial and Local Government: National Disaster Management Centre	National disaster management	?	National Disaster Management Centre	New Directorate.	No details in DPLG Strategic Plan

196. Table 3 includes the initial set of synthesised criteria (and sub-criteria) that should apply to the choice.
197. Thus, the criteria relating to functional fit (amended to include the sub-criterion of least conflict with relevant policy fields) and least disruption have been applied in assessing each of the options, below.
198. Table 4 provides summary information from the published strategies of each of the relevant Departments.
199. Appendices C and D provide tentative financing guidelines for the fire function and FPAs, which are interlinked. Estimates are based on (a) a plausible density of FPAs, with no FPAs in low-risk regions, and increasing area per FPA from 500,000 in the medium-risk zone, to 250,000 hectares in the extreme risk zone and (b) a reasonable baseline operating budget for each FPA, with contributions both from members and municipalities, as set out in the Appendices, (c) staffing levels and running costs for the fire function reflecting the opinions of knowledgeable stakeholders, plus an adequate provision for communication and research.

#### **A. THE DEPARTMENT OF WATER AFFAIRS AND FORESTRY**

200. In this option, DWAF would continue on the present lines, as outlined in Section 9 above, except that the fire function should become a sub-programme in its MTEF, be managed as a Directorate, and be financed along the lines set out in Appendix D.
  201. Table 4 summarises key elements of the multi-year strategy of this Department that relate to the fire function. According to the DWAF strategic plan, part of its mandate originates in the National Veld and Forest Fire Act (section 4, Core Business of the Department). The Department commands probably what is the best single body of competence in the fire function, since it has a large number of staff trained in forestry, and the forestry training, especially at Saasveld, offers probably the best education in integrated veldfire management in the country. Recent training programmes have strengthened and reinforced this competence (see above). In addition, this staff is embedded in an organisation with a long history of work in this field, good records, and a highly effective supplementary knowledge and information system, such as that maintained by Geomatics, with synergies across functions, e.g. with Working for Water. Furthermore, the Department in its Strategy (Chapter 3) identifies as a competence "liaison with other Departments in all spheres, to enhance integrated planning and implementation with all relevant sectors", as indeed it is required to do through NEMA, and other instruments of cooperative government.
  202. Obviously, also, this option would result in least disruption to ongoing implementation, which would be at risk in any other option because organisational change always disrupts, and since each staff member involved will have the choice as to whether to move with the function or not, it is virtually certain that the function would not be transferred with current competence and capacity intact.
  203. However, the relevant strategic objective in the DWAF strategic plan is "to contribute to the prevention of wild fires in non-urban forests and non-forest areas", and the output related to this is: "Agreement reached on custodianship of the Fire Act and transfer to appropriate Department initiated". It is also not well accommodated within the functional identified in the strategic plan, i.e. forestry, water resources, and water services. Retaining the function within DWAF will require adaptation of its strategic plan, especially when one considers the requirements for implementation, set out in 11.3 below.
  204. However, the Department is currently revising its forestry strategy, centred on a vision focused on economic and social development through sustainable forestry, ultimately contributing to poverty alleviation, within an enabling regulatory environment. This vision would readily frame the fire function's role (see earlier discussion on veldfire risk and rural development in section 2).
  205. Thus, in summary, the advantages of this option would be:
    - a. the current continuity would be maintained with least disruption, and thus greatest chance of progress in achieving reduced veldfire risk across SA
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- b. current competence would be retained intact, without loss of personnel in the process of transfers; the nine regional offices of DWAF would continue to be available to support processes of implementation, across South Africa; thus, this option offers least disruption to ongoing implementation of the Act, and greatest assurance to stakeholders of steady continuity.
  - c. the function would continue to operate within an institution with good collective competence in the domain of natural resources and environmental management and a very substantial base of information, explicitly or tacitly linked with integrated veldfire management, in files, libraries, and geographical and other data bases.
206. The disadvantages would be:
- a. possible continued perceived conflict with the Fire Brigade Services Act and the Disaster Management Act and
  - b. uncertainty arising from continued discomfort among DWAF Top Management about the fit between the fire function and the overall strategy of DWAF in the three functional areas of forestry, water resources and water services.
- B. THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND TOURISM (DEAT)**
207. The function could be transferred to the Department of Environment Affairs and Tourism, with:
- a. this Department seeing to core functions relating to policy and legislation, within the Chief Directorate: Biodiversity and Heritage (see Table 4), which includes a Directorate of Resource Use, and
  - b. the balance of the core functions being allocated to the SA National Biodiversity Institute (SANBI), established through the Biodiversity Act.
208. The function would fit the mandate of this Department, and locating it there would provide synergies in that it would be implemented in parallel with important relevant instruments, such as the Biodiversity Act, and the National Action Programme for the UN Convention on the Combating of Desertification. There is reasonable functional fit with SANBI, which accommodates competence in integrated veldfire management, and substantial relevant information systems, as well as new relevant competence arising from managing precursor bioregional programmes, such as CAPE. Geographical reach could be achieved through its provincial partners, some of which have good reach to the level of Districts.
209. Competence and capacity is however not at the same level as in DWAF, e.g. there is weak competence in the principles of the wildfire risk management cycle.
210. In addition, there is a high risk of disruption to ongoing implementation. First, the modalities of cooperative government between DEAT and its provincial partners are still evolving, and are uncertain in many cases (and provinces are short of capacity to meet current requirements). Second, DEAT is now addressing the challenges of strategy implementation of the key international Conventions on climate change, biodiversity, and desertification. Recent analyses have highlighted substantial capacity challenges in this respect. Third, SANBI has only just been established, and would require time to absorb the fire function. In addition, there are the generic risks attached to transfer of the function. In this option, transfer of the fire function now would be untimely.
211. The advantages would be:
- a. synergies from placing this function with an agency that has a broad policy and regulatory mandate in relevant environment and natural resource management fields, as well as managing Poverty Relief Programmes that include the Working for Water (as partner) and Working for Wetlands programmes
  - b. rapid mainstreaming of biodiversity and sustainable land management into veldfire management
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- c. uncertainties because of environmental management capacities in provinces would be managed through improving capacity in the SA National Biodiversity Institute, with maximum efficiency
- d. the function would operate within an institution with good collective competence in the domain of natural resources and environmental management and a very substantial base of information, explicitly or tacitly linked with integrated veldfire management, in libraries and geographical and other data bases.

212. The disadvantages would be:

- a. risks to continued implementation because of uncertainties during transfer of the function and possible loss of capacity
- b. delay in reaching desired operating levels because of the institutional changes to form SANBI
- c. possible continued perceived conflict with the Fire Brigade Services Act and the Disaster Management Act.

**C. THE DEPARTMENT OF AGRICULTURE (DoA)**

213. The Act could be transferred to the national Department of Agriculture, for implementation with provincial agricultural agencies acting as DWAF regional offices now do. It could fall under the Assistant Director General for Sustainable Resources Use and Management, in the function of Land Use and Soil Management (Table 4).

214. The function would partially fit the mandate of this Department, within its mission of "enhancing the sustainable management of natural agricultural resources and ecological systems". Locating it there would provide synergies in that it would be implemented in parallel with CARA, the community-based LandCare programme, and the National Grazing Strategy. The extension services of this Department, together with those of provincial counterparts, provide a very substantial body of competence and institutional memory, which collectively reaches out to all areas of the country. It has a good track record of integration with other relevant policy fields (though some stakeholders from the biodiversity field disagree with this). There is lack of fit however in that the mandate of this Department speaks very directly to agricultural development (including wildlife management) and is not overarching and encompassing, as in the case of the DEAT option. This Department also has good information systems in relevant fields. DoA, with the Agricultural Research Council, has good and appropriate knowledge and information systems, such as SAGIS, and good institutional memory regarding pasture and veldfire management.

215. Competence and capacity are however not of the same nature and level as in DWAF, e.g. there is weak competence in the principles of the wildfire risk management cycle.

216. In addition, there is a high risk of disruption to ongoing implementation. This is principally because of the high and urgent demands to be placed upon the collective capacity in the national and provincial departments by the CASP (though CASP is linked to natural resources management in the scope of post-settlement support), as well as the generic risks attached to transfer of the function. In this option, transfer of the fire function now would be untimely.

217. In summary, the advantages would be:

- a. synergies from placing this function with the Department that administers CARA and the Land Care Programme, and which is a senior partner in the National Action Programme for the UNCCD
- b. the function would operate within an institution with good collective competence in the domain of natural resources and environmental management and a very substantial base of information, explicitly or tacitly linked with integrated veldfire management, in libraries and geographical and other data bases in the Department and in the Agricultural Research Council.

218. The disadvantages would be:

- a. risks to continued implementation because of uncertainties during transfer of the function and possible loss of capacity
-

- b. risk because of overstretched agricultural services capacity throughout the country, which must give priority to the Comprehensive Agricultural Support Programme, just instituted and focusing on the new farmers established through land reform and
- c. possible continued perceived conflict with the Fire Brigade Services Act and the Disaster Management Act.

**D. THE DEPARTMENT OF PROVINCIAL AND LOCAL GOVERNMENT (DPLG): NEW ENTITY**

219. The Act could be transferred to the Department of Provincial and Local Government, for implementation as part of the Programme for Strategic Objective 3: Accelerated Service Delivery. It could support the Key Focus Area "Ensure delivery of a basket of services that include electricity and water in all municipalities", and be managed through a new Directorate (Table 4).
220. However, the fit to the mandate and functions of DPLG would be poor. The primary DPLG mandate is focused on a system of integrated government. Its Strategic Plan has the objective to develop and monitor the implementation of national policy and legislation relevant to provincial and local government to fulfil the development role and enable integrated service delivery, and to promote sustainable development by providing support to provincial and local government. Its mission is to develop and promote a system of integrated government, and to develop and promote systems and structures of effective governance, particularly at the local sphere. Thus, its mandate is cross-sectoral, across all sectors, focuses on systems and structures, and assignment of a sectoral function would undermine this mandate.
221. In addition, DPLG has no or little competence, capacity, or institutional memory in the fields relevant to the fire function, in spite of hosting the Fire Brigade Board.
222. This option brings a high risk of disruption to ongoing implementation. It also brings a high risk that the fire function will gravitate toward fire prevention and suppression, at the cost of integrated veldfire management, and with resultant progressive increases across the country in the costs of veldfire management (see Section 3 above).
223. The advantages would be:
- a. synergies from placing this function with the Department that administers local government and the Fire Brigade Services Act.
224. The disadvantages would be:
- a. risks to continued implementation because of uncertainties during transfer of the function and possible loss of capacity
  - b. conflict around the linkages between the National Veld and Forest Fire Act and natural resources and environmental legislation, and the risks attending administration by an entity with little competence in these fields,
  - c. the risk of excessive emphasis on fire response and suppression that arises from locating what should be an integrated veldfire management function with emergency fire services, as indicated by international experience, and the unacceptable costs to veldfire management and environmental values that arise from this (see also section 2.2 above)
  - d. lack of embedded competence and institutional memory relevant to integrated veldfire management and absence of a natural resources and environment information base in DPLG.

**H. THE DEPARTMENT OF PROVINCIAL AND LOCAL GOVERNMENT: NATIONAL DISASTER MANAGEMENT CENTRE**

225. The Act could be transferred to the Department of Provincial and Local Government, for implementation by the National Disaster Management Centre (NDMC).
226. However, the fit to the mandate and functions of NDMC would be poor. The objectives of the NDMC are:
- develop guidelines for the preparation, and regular review and updating of disaster management plans and strategies by organs of state and other institutional role-players involved in disaster
-

management;

- harmonisation of related frameworks (Intergovernmental Relations)
- assist province and municipalities in the establishment of Disaster Management Centres
- develop guidelines for the integration of the concepts and principles of disaster management, and particularly strategies on prevention and mitigation, with national, provincial and municipal development plans, programmes and initiatives
- classify, characterise and record hazards and disasters
- develop the National Disaster Management Framework, the purpose of which is to guide the development and of the disaster management function in South Africa
- develop and strengthen capacity through the implementation of a Disaster Management Training and capacity building programme, and
- development of an integrated Disaster Management Information System.

227. Thus, in this case, the assignment of a sectoral function to the NDMC would undermine its cross-sectoral, coordinating and integrating role. An analogy is the flood-disaster management function, and elements of drought management, which reside in DWAF and fit its functions well, rather than being placed in NDMC.

228. In addition, NDMC, while having competence in the principles of disaster management and the emergency management cycle, has no or little competence, capacity, or institutional memory in the other fields relevant to the fire function and the function would thus not locate in a strong supporting operating environment.

229. This option brings a high risk of disruption to ongoing implementation. It also brings a high risk that the fire function will gravitate toward fire prevention and suppression, at the cost of integrated veldfire management, and with resultant progressive increases across the country in the costs of veldfire management (see Section 3 above).

230. The advantages would be:

- synergies from placing this function with the Department that administers local government and the Fire Brigade Services Act, and close linkage with the implementation of the Disaster Management Act.

231. The disadvantages would be:

- risks to continued implementation because of uncertainties during transfer of the function and possible loss of capacity
- conflict around the linkages between the National Veld and Forest Fire Act and natural resources and environmental legislation, and the risks attending administration by an entity with little competence in these fields
- risk to the proper implementation of the Disaster Management Act, because of the conflict between sectoral strategies and plans, and the coordinating role of Disaster Management
- absence of a natural resources and environment information base in NDMC.

#### F. REPEAL THE NATIONAL VELD AND FOREST FIRE ACT

232. Some observers have suggested this, to eliminate currently perceived conflicts. This could also lead to redrafting of the Fire Brigade Services Act so that it incorporates the provisions of the National Veld and Forest Fire Act.

233. The disadvantages of this measure are that:

- there would be a gap in legislation for an indeterminate period that would markedly increase wildfire risk in South Africa and lose all progress recently achieved; this would be a needless situation, since the conflicts are perceived rather than real and may be managed through proper leadership and guidance
  - there is a risk that the environmental and natural resource policy dimensions of the National Veld
-

and Forest Fire Act would be lost, and that the mainstreaming of these prerequisites would be jeopardised.

#### G. ASSIGN ADMINISTRATION OF DIFFERENT CHAPTERS OF THE ACT TO DIFFERENT AGENCIES

- 234. This would involve, for example, assigning Chapter 3 to the SA Weather Service, and Chapters 4 and 5 to Provincial and Local Government.
- 235. This measure seems to have some of the advantages of Options D or E above, but the disadvantages of increased fragmentation of administration and conflict among organs of state, bringing increased veldfire risk.
- 236. Options F and G do not warrant further consideration.

### 11.2 THE FRAMEWORK STRATEGY AND ROAD MAP FOR IMPLEMENTATION

- 237. This Section sets out the strategic goals and objectives that need to be met to achieve effective implementation of the Act, whichever custodian is chosen. The objectives and the activities to achieve them constitute the road map for implementation.
  - 238. The framework derives from the issues and concerns identified during this project.
  - 239. The **ultimate goal** to be achieved by government is that effective integrated veldfire management has contributed significantly to a safe, healthy and productive rural environment in South Africa and hence to sustainable rural development, with the results seen in significant reduction in veldfire risks.
  - 240. The **immediate strategic goal is** that by the end of March 2009, government plays its required role in assuring effective implementation of the National Veld and Forest Fire Act and has through this assured that all FPAs in the regions of medium high and extreme veldfire risk have been registered and are operating with adequate support.
  - 241. The objectives to be met in achieving the immediate goal follow.
  - 242. **Objective 1: There is effective cooperation between government role players, their partners, and the public within an integrated framework for action**
    - a. There is a Memorandum of Understanding between the Departments of Water Affairs and Forestry, Agriculture, Environmental Affairs and Tourism, and Provincial and Local Government based upon an agreed strategy for the implementation of the Act, as captured in each department's Programmes or Sub-Programmes in their own strategies, as well as a Protocol for cooperative governance that formalises intergovernmental work in this field
    - b. There is a governance structure to advise the custodian on its implementation strategy and each other head of department on strategy and implementation, which includes Programme or Sub-programme managers from each of these Departments, as well as representatives from affected sectors (Fire Brigade Board, forestry, agriculture, electricity distribution, etc), and this body also acts as a Working Group of the National Disaster Management Advisory Forum to fulfil the requirements of the National Disaster Management Act with respect to veldfires
    - c. All affected parties understand the provisions of the Act and its relationship with other legislation, and are constantly aware of the requirements for integrated veldfire management
    - d. The custodian is competent in the interpretation of the Act, and insofar as they affect veldfire management, the National Environmental Management Act and its subordinates, the Disaster Management Act, the Conservation of Agricultural Resources Act or its successor, the Fire Brigade Services Act, and the Communal Property Rights Bill as well as legal precedent in respect of prosecution and litigation with respect to veldfires, and is able to advise other role-players on the relationship between these statutes effectively; the custodian applied these in a framework for harmonising the instruments in these fields and provides leadership and guidance to stakeholders accordingly
    - e. Conflict between relevant institutions is effectively managed
-

- i. Respective roles and responsibilities of all relevant entities are clear and agreed upon
  - ii. There is an agreed and documented interpretation of the relationships between the Act and the Fire Brigade Services Act and role-players are able to use this in cases of apparent conflict
  - iii. The custodian facilitates development of procedures for resolution of conflict arising from provisions in, for example, the Telecommunications Act that affect fire-damage liabilities, and others as they arise
- f. Veldfire management is effectively incorporated into the National Disaster Management Framework
- g. The custodian has produced a revised version of the Guidelines for FPA Business Plans that supports the regulations for Chapter 2 of the Act so that latest developments in biodiversity management, air quality management, and other fields are incorporated, and there is adequate guidance on relationships with Working for Water and Working on Fire
- h. The custodian with its partners has reviewed and agreed upon the documented guidelines for veldfire management formulated in terms of Regulation 12 of CARA, on the lines of current best practice

**243. Objective 2: All FPAs needed in South Africa have been registered and are properly supported by government and umbrella FPAs**

- a. The custodian has assessed all IDPs in the regions of medium, high and extreme veldfire risk and with the Department of Provincial and Local Government has taken effective steps to ensure that veldfire risk is appropriately recognised in each, and assures appropriate funding, including for start-up costs of FPAs
- b. The custodian has developed and implemented a clear and agreed framework for assessing the rules proposed by FPAs to ensure that they are fair and reasonable in the context of local veldfire risk
- c. A plan for the development of appointed FPOs has been devised and implemented, so that each is competent in integrated veldfire management; in the transition, the custodian should facilitate temporary secondment or contracting of competent persons from entities with capacity (e.g. forestry companies), funded from the Equitable Share transfers or from Disaster Management start-up funds
- d. The custodian has a strategy for the promotion of the formation of umbrella FPAs and has implemented it
- e. The Working on Fire Programme has been restructured as a public-private partnership, as a service provider to owners, FPAs, and municipalities, and those activities in its current business plan that cannot be operated as part of the business are transferred to the custodian.

**244. Objective 3: The National Fire Danger Rating System is effectively implemented**

- a. The custodian has proceeded with current arrangements with the SA Weather Service
  - b. The custodian with representatives of the media has investigated and chosen new ways of facilitating the communication of fire danger ratings, e.g. pre-recorded CDs in different languages, and rural schools and clinics as communication points with symbolic communications means (e.g. flags)
  - c. Parties, including members of the public, are properly informed and where necessary trained in the meaning of fire danger ratings and appropriate responses, and this reaches the deep rural areas
  - d. The custodian effectively monitors and evaluates the performance of the system and sees to improvements as needed
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**245. Objective 4: There is appropriate competence and capacity available in relevant institutions for the implementation of the Act**

- a. The custodian is competent in business process management for implementation of the Act, in the relevant statutory law and relevant jurisprudence, in the principles and practice of integrated veldfire management, in relevant aspects of sustainable resource management, and in relevant information management including monitoring and evaluation
- b. The custodian establishes this initiative as a full Sub-Programme, managed by a Directorate at head office, and supported regionally by full-time Fire Advisors, as follows: Limpopo: 2; Mpumalanga: 3; North West: 2; Northern Cape: 1; Free State: 1; KwaZulu-Natal: 3; Eastern Cape: 3; Western Cape: 2; Appendix D is an indicative budget for the function at full capacity
- c. There is appropriate financing for integrated veldfire management in all spheres, including the necessary transfer in the Equitable Share to local government, conditioned on support to FPAs; the custodian employs the intergovernmental modalities in the CFO's Forum, the 4x 4 Technical Teams, and the 10 x 10 Forums to promote proper coordination among spheres of government in creating and resourcing adequate capacity
- d. The custodian with the Department of Provincial and Local Government has incorporated skills development in integrated veldfire management into the DPLG capacity building strategy
- e. The strategy for implementation assures that there is an effective element dealing with development of skills in integrated veldfire management in FPAs and relevant municipal services

**246. Objective 5: There is effective enforcement of the Act**

- a. The custodian continues with the Interdepartmental Committee on Enforcement initiated by the Department of Water Affairs and Forestry and takes it to conclusion
- b. The custodian ensures proper delegation of enforcement powers to local government and facilitates standard spot fines for appropriate offences
- c. The custodian with the Department of Foreign Affairs opens regional and bilateral negotiations on the problem of transboundary fires and reaches agreement on appropriate control strategies

**247. Objective 6: The strategy includes an effective communication programme that reaches all stakeholders, including rural communities, and creates an awareness of the Act, the strategy for implementation, and of veldfire risks and their management**

- a. Communication is set up as a joint venture with contributions from members of the governance structure
- b. The custodian's strategy is effectively and regularly communicated to all stakeholders
- c. The current Veldfire Bulletin continues,

**248. Objective 7: An effective programme of research, knowledge and information management supports the implementation of the Act**

- a. The custodian procures appropriate, policy-relevant research and disseminates the findings effectively
  - b. The Veldfire Information System and other relevant information systems and processes support the effective flow of information among all parties in the system, and are properly interfaced with the Disaster Management Information System
  - c. The custodian mobilises new technologies, especially remote sensing technologies, to support the implementation of the Act
  - d. The custodian develops and implements a system to support the exchange of best practice among FPAs and others
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**249. Objective 8: The outcomes of implementing the Act are properly monitored and evaluated and the strategy for implementation is adapted and improved where necessary according to this evaluation**

- a. The custodian has completed the development and implementation of the National Veldfire Information System and ensures linkage with the Disaster Management Risk and Vulnerability Atlas
- b. All FPA annual reports and other regular sources of information are synthesised in an annual national report on progress
- c. The custodian has initiated a research programme on improvements to implementation
- d. The custodian has procured the services of a provider to act as a "National Task Force" to provide specialist development and consultancy services, communication, and other relevant services.

**11.3 OPTIONS RANKED BY CRITERIA**

250. Stakeholders in interview and in workshops tended (a) to express views on a preferred option that reflected their sectoral position, e.g. farmers preferring the Department of Agriculture, but there were always contradictions of views within any given sector, and (b) generally, there was a strong body of opinion, irrespective of sector, in favour of the Department of Water Affairs and Forestry, mostly for reasons of continuity, rapid progress and hence risk minimisation.

251. The option recommended here is that the Department of Water Affairs and Forestry should continue as custodian of the Act.

252. This is because:

- a. Continuing with this Department will result in the least disruption to the current process of rolling out the Act, which though criticised by some is a process well received as a whole by stakeholders
  - b. The fire function is not yet a fully fledged entity, so that it is not yet available for transfer as a going concern to another entity
  - c. In organisational change of this nature, the requirements in the Labour Relations Act are that each employee affected must be consulted about and have the choice concerning acceptance or not of a transfer; it is virtually axiomatic in such cases that not all will accept, and some will choose other options so that a weakened entity would be transferred if another custodian is chosen, thus jeopardising the function and increasing the likelihood of delay or failure
  - d. The current entity is embedded in a system of objective and tacit information, expertise and intuitional memory, which cannot be transferred with it, and this, would weaken the ability of a transferred entity to operate effectively in a new environment
  - e. In addition, the fit with the Forestry function is as good as or better than it would be with relevant functions in DEAT and DoA (see Section 12 below),
  - f. many stakeholders are comfortable with DWAF as custodian and hard-won stakeholder goodwill will be maintained by this choice
  - g. Since there is evidently a strong body of opinion on custodianship in favour of the Department's continuing as custodian, such a decision will be well received on the whole, facilitating continued goodwill and hence implementation
  - h. Overall, the option of the Department of Water Affairs and Forestry as custodian is the one that scores highest on the criterion of minimising veldfire risk.
  - i. Since the Department of Water Affairs and Forestry already has and continues to build capacity and competence to support the function, it is rated highest among the options on this score.
  - j. Finally, regarding integration and coordination, the Department of Water Affairs and Forestry rates close to the next two options.
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253. The second-best option would be the Department of Environmental Affairs and Tourism, with the new SA National Biodiversity Institute.
- a. This option would rate highest for coordination and integration, because of the statutory role of the Department through the Committee for Environmental Coordination to achieve just this. In addition, as custodian of the Conventions on Biodiversity and Desertification (i.e. sustainable land management) and developer of the biodiversity management instruments and the National Action Programme for UNCCD, its role in coordination and integration is further reinforced, in these critical fields. There would be synergies with Working for Wetlands and Working for Water.
  - b. The rating on the competence and capacity criterion would be moderate; the institution has strong expertise, but has suffered substantial capacity loss and turnover recently. It has very strong, relevant information bases, and good scientific capacity, and through precursor bioregional plans such as CAPE, leading competence in regional level skills of this kind.
  - c. This option would rate low in terms of minimising veldfire risk.
254. The third option of choice would be the Department of Agriculture.
- a. This option rates moderate to high on competence and capacity, given its reach through its agricultural extension service to the provinces and its partnership with provincial agricultural services, and the institutional experience with CARA. However, this capacity is jeopardised (a) by the demands of CASP and (b) by the weakening that would occur with the transfer of the function. There would be synergies with LandCare, however.
  - b. Regarding integration and coordination, this option rates average among the options.
  - c. This option would rate low in terms of minimising veldfire risk.
255. The fourth option of choice, which is not recommended, would be the National Disaster Management Centre in the Department of Provincial and Local Government.
- a. This option rates low in terms of minimising veldfire risk.
  - b. This option rates moderate on competence and capacity, given the collective competence in managing the disaster cycle, and the reach through provincial and local centres, but it has weak competence in natural resources and the environment, and at best moderately appropriate information systems.
  - c. It would rate moderate on coordination and integration, since it must achieve this in terms of the Disaster Management Act, but the reach of this role is limited by comparison, say, with Environmental Affairs and Tourism.
  - d. In addition, locating a sectoral responsibility like veldfire management in the Centre will undermine its cross-sectoral role and take its eye off the coordination and integration requirements across all disaster sectors, and create uncertainties about other sectors.
256. The fifth option of choice, which is not recommended, would be the new entity in the Department of Provincial and Local Government.
- a. This option rates low in terms of minimising veldfire risk
  - b. This option rates low on competence and capacity.
  - c. It would rate moderate on coordination and integration, since it must achieve this through IDPs, but the reach of this role is limited by comparison, say, with Environmental Affairs and Tourism.
  - d. It does have the advantage over the fourth option that it would not undermine the cross-sectoral function of the Disaster Management Centre.
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## 12 CONCLUSION

257. The Act is not legislation for the emergency management of wildfires, but rather a statute that introduces certain legal instruments that enable and promote integrated veldfire management. These integrate natural resources management with emergency management, i.e. it is about environmental management.
  258. The Act is being implemented within a policy environment that has changed fundamentally during the last 10 years, and is still dynamic. The Disaster Management Act sets up a new system for anticipatory, coordinated and integrated management of disasters in all sectors, proper cooperative government in the field as a whole, and a coherent framework within which veldfire management (and other disaster sectors) can fit. It places sectoral responsibilities upon relevant sectors, however, rather than transferring these to an all-encompassing disaster management function. Further, it draws disaster management into natural resources and environmental management, a step mirrored in provisions within the National Environmental Management Act.
  259. The broad field of policy in which the Act falls has been further transformed by progress arising from South Africa's commitments to key global conventions, i.e. the Convention on Biodiversity, and the Convention on the Combating of Desertification. These commitments are progressively mainstreaming biodiversity management and sustainable land management into all policy fields. Likewise, transformation of agriculture policy creates a new arena within which veldfire management must be practised
  260. Furthermore, the "fire function" to be assigned does not include on-the-ground management of veldfires, which is the responsibility of owners, Fire Protection Associations, and local fire services. Rather, it is about the policy, enabling, leadership and regulatory functions that national government must retain.
  261. It is vitally necessary in the public interest to assure that a policy of integrated veldfire management is promoted as the foundation for the implementation of the Act. Experience elsewhere, as well as historically in South Africa, shows that an unbalanced policy has high direct and indirect costs. This arises especially where there is undue emphasis on fire response and suppression at the cost of proper integrated veldfire management as part of ecosystems management. I.e. the broad lesson is that if you do not sustain an integrated fire management policy you pay high prices in environmental degradation, fire management, and asset loss. For this reason, the fire function as defined should not be fragmented.
  262. The question of the best custodian for the National Veld and Forest Fire Act is dominated by the fact that the current level of management of veldfires in South Africa is not adequate to the overall level of veldfire risk. This is such that it jeopardises rural development. Government's duty of care requires a decision that promotes rapid improvement in management of this risk.
  263. This study shows that the benefits of government's role in improved integrated veldfire management greatly outweigh the costs, given the economic savings and the public good that would come from improved safety, better sustainability in rural development, and enhanced productivity of ecosystem benefits.
  264. Some parties consulted also proposed that the fire function should be assigned to an independent agent, acting on behalf of all national Departments with an interest in the fire function. This option is not recommended now, on the grounds that it is the chosen custodian that must consider it once custodianship has been settled. The custodian needs itself to decide which aspects of its function may and should be agentised. Assignment and delegation of functions in terms of the Act must be done by the Minister and the Director General, and in the light of the fact that certain elements of the function would certainly remain the responsibility of the Minister and the custodian Department.
  265. Among the options available for locating the fire function, none offers a perfect fit.
  266. The two options involving the Department of Provincial and Local Government are not to be recommended, since assigning the fire function to that Department would interfere with its role and mission to develop and promote a system of integrated government, and to develop and promote systems and structures of effective governance, particularly at the local sphere. Thus, its mandate
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is cross-sectoral, across all sectors, and focuses on systems and structures. Assignment of a sectoral function would undermine this mandate. In addition, in both these cases, the fire function would become isolated from the necessary supportive institutional competence, knowledge and information needed for a successful integrated veldfire management policy.

267. The option of custodianship within the National Disaster Management Centre would also involve high risk of disruption to current implementation of the Disaster Management Act and a loss of mission focus. Rather, the custodianship needs to interface with disaster management just as other line custodianships do, e.g. in flood, drought, and food security management. It is not a valid argument to say that for effective integrated veldfire management to be achieved, the National Disaster Management Centre must administer the National Veld and Forest Fire Act together with the Disaster Management Act.
268. The argument from some stakeholders, that the National Veld and Forest Fire Act is in conflict with the Fire Brigade Services Act and therefore must be administered in tandem by the same entity that administer the latter Act, i.e. the Department of Provincial and Local Government, is not valid. Perceived conflict must be managed by the custodian in the same way as all other relevant cooperative government issues must be managed.
269. Of the three remaining options, i.e. Water Affairs and Forestry, Environmental Affairs and Tourism, and Agriculture, each provides a reasonable fit, but the latter two entities are not more competent than DWAF to implement the Act and both face severe capacity challenges. Transfer of the function in either case would certainly disrupt implementation.
270. The option of retaining the function within DWAF is the best available, especially because it entails least disruption of the ongoing progress in the implementation of the Act and thus is the one that would assure most rapid progress in addressing the unacceptable levels of veldfire risk that are current in South Africa today.
271. Though there is no national Department that is a perfect fit for the cross-sectoral fire function, it is also true that the Forestry function in DWAF provides a good fit.
272. This is because:
- the Department has built a good track record in the implementation of the Act
  - there is strong motivation for government to address the wildfire risk in the forest sector: nearly all of the R30 bn asset base of the forest and forest products industry is located within the zones of high to extreme wildfire risk, and the entire forest-products value chain is vulnerable to the hazard of wildfires; the newly restructured forest assets have suffered especially severely in the last round of wildfires; in addition, emergent growers and enterprises, which the Department seeks to promote, are especially vulnerable to wildfires and almost certainly not sustainable without improved wildfire risk management
  - the Department's sphere of interest with respect to natural forests and woodlands, the former all in the zones of high to extreme risk, and more than 20 million hectares of the latter in the same zones, is also exposed to substantial veldfire risk, both in terms of commodities and of the supply of ecosystems goods and services; wildfires are a contributory cause of degradation of these resources, which are a vital part of the livelihoods of thousands of poor rural households
  - as detailed in the report, of the alternatives, the Department houses the best body of competence in integrated veldfire management, which since it is distributed within the Department beyond the fire function, constitutes a substantial asset to support the function; the supporting body of knowledge and information within the Department is also strong.
273. Retaining the fire function within the Forestry function in this Department would mean that it would address the functional area much as it does the Key Functional Area of Water Services, albeit on a smaller scale. The option does however raise questions about current paradigm and strategy for Forestry, as well as its location. These issues are beyond the scope of this report, but clearly a review would be needed.
274. This report provides financing and strategic guidelines for the further work of implementing the provisions of the Act. The custodian will need to ensure that this information is employed as a basis for its strategy and budget.
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275. The question of the future of Working for Fire is nettlesome to many. It is a programme that has delivered rapid beneficial results in fire suppression, and created skills and employment. It should, as its business plan indicates, be restructured as a public-private partnership as soon as possible. This will convert it to a business-based service provider to owners, Fire Protection Associations and municipalities. The balance of activities in the business plan of Working for Fire would then revert to the custodian.

## **Appendix A: terms of reference as contained in the contract for the project**

### **1 UNDERSTANDING OF THE BRIEF**

#### **1.1 INSTITUTIONAL PLACEMENT OF THE FIRE FUNCTION**

By “institutional placement of the fire function” we understand the following:

- a basis for a decision on where to locate the administrative responsibility of the National Veld and Forest Fire Act as well as the institutional accountabilities for on-the-ground fire management
- a clarification of the role and responsibilities of the institution thus responsible, and those of on-the-ground management entities
- a clarification of the broad competences and capacity that would be required by this institution and the entities thus responsible, and
- a clarification of the way in which this institution would relate to other key institutions in different spheres, and to on-the-ground management entities
- that it must take account of community-based natural resource management wherever appropriate
- and include a broad road-map for implementing the decision.

#### **1.2 PROJECT OUTPUT**

The output of the project is to be a report, which will:

- include the terms of reference for the project and describe how they were addressed
  - summarise the historical background to the administration of the management of veld and forest fires in South Africa
  - outline how the situation was changed by the adoption of the new Constitution in 1996, and the subsequent policies and statutes
  - outline the ecological role of veldfire in South Africa, the use of fire in the management of natural resources, and the nature and pattern of veldfire risk in the country, as well as recent and anticipated trends in these elements of the management issue, including the influence of emergent issues in environmental management and sustainability and community-based natural resources management
  - provide an analysis of the institutional landscape in SA, including government in all spheres, civil society institutions, community entities, and others insofar as they are relevant to the management of veldfires, including a description of the business process to be managed by the fire function
  - include an analysis of three examples overseas of alternative ways in which countries administer and manage this function
  - summarise alternative options for the administration of veldfire management, as well as on-the-ground management, based upon internal (SA) analysis and external analysis
  - summarise criteria adopted for the choice among options, with the rationale attached to each criterion
  - a recommendation on a preferred option, based upon the views and preferences of stakeholders as well as rational analysis, which will stipulate the identity, purpose, intent, role, responsibilities, form, function, competence and linkages (to institutions with linked responsibilities) of the institution in which the function is to be placed, the location and reporting lines of the function within the institution, with a summary of the prerequisites for successful implementation, and
  - conclude with a broad road-map for implementing the decision, which will outline the
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action plan that the Department and other key stakeholders should follow, including how to address such things as organisational strategy, structure, budgets, and staffing with job descriptions, as well as organisational or institutional development.

## **2 METHODOLOGY: PROPOSED APPROACH**

An outline of the method to be followed in doing this work follows below, set out in approximate sequence of execution. There is a cross-reference to the terms of reference issued by the Department in each task description.

The proposed approach involves a technical process and a stakeholder involvement process.

### **2.1 TECHNICAL PROCESS**

#### **2.1.1 Deliverable 1: Draft Options Report**

This deliverable will be a draft report suitable for review through the consultative workshops, and covering the following:

- the terms of reference for the project and how they were addressed
- a brief historical background to the administration of the management of veld and forest fires in South Africa
- outline how the situation was changed by the adoption of the new Constitution in 1996, and the subsequent policies and statutes
- outline the ecological role of veldfire in South Africa, the use of fire in the management of natural resources, and the nature and pattern of veldfire risk in the country, as well as recent and anticipated trends in these elements of the management issue, including the influence of emergent issues in environmental management and sustainability, and community-based natural resources management
- provide an analysis of the institutional landscape in SA, including government in all spheres, civil society institutions, community entities, and others insofar as they are relevant to the management of veldfires
- include an analysis of three examples overseas of alternative ways in which countries administer and manage this function
- suggest alternative options for the administration of veldfire management, as well as on-the-ground management, based upon internal (SA) analysis and external analysis
- propose criteria for the choice among options, with the rationale attached to each criterion.

#### **a) Desk research: roles and responsibilities of the various departments; etc (TOR items 1.1, 1.2 and part of 4)**

This task would involve an investigation of the roles and responsibilities of the various departments and spheres of government in the administration of veldfire management in South Africa, as well as entities involved in on-the-ground management of fire. Specific activities would entail:

- 1) An analysis of each extant and relevant White Paper and statute (as well as relevant Bills, such as the Sustainable Use of Agricultural Resources Bill, the Biodiversity Bill, the Land Use Management Bill, the Communal Land Right Bill, and the Air Quality Bill) to identify those that impact on the administration of veldfire management, the nature of the impact, the institutional roles determined in these policies or statutes, the instruments of policy that they create, and the extent to which they have been or are being deployed; this would extend to non-statutory but relevant organisations, where known, such as bioregional conservation programmes like CAPE, and conservancies, as well as to such things as the DEAT principles of community-based natural resources management.
  - 2) This analysis would distinguish between policy fields, instruments etc that (a) are
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proximally relevant, such as the National Veld and Forest Fire Act and (b) are influential, such as the National Environmental Management Act, which has principles that are relevant, or the Municipal Systems Act, which sets the requirements for IDPs.

- 3) Summary of roles, responsibilities and interactions by means of two or three matrices and supporting text, and a further summary suitable for presentation to workshops and other audiences.
- 4) The information and insights arising from the interviews would inform some parts in the report specified above.

**b) Interviews with stakeholders (part of TOR 1.1 and 1.2)**

The interviews will serve to enrich the information from the desk research, identify the issues, concerns and preferences of a representative sample of stakeholders, and feed forward into the workshops for Deliverable 2.

- 1) The list of individuals or parties to interview will be established after sufficient progress with the task outlined in a) above, and after approval by the Department of Water Affairs and Forestry; it would include representatives of key national institutions, key institutions from three or four provinces, and key institutions from several Metropoles or local municipalities within these provinces, ten registered or emergent FPAs (or umbrellas), three emergent institutions under the Communal Property Right Bill (i.e. organised community structures) or equivalent, and farmer study groups, as well as key experts on the institutionalisation of natural resources management in the provincial (approximately; such as bioregional programmes like CAPE) as well as local spheres (such as experts on the conservancy movement, and Working on Fire).
- 2) At an early stage, interviewees would receive a briefing note that outlines the project.
- 3) Prior to visits by interviewers, the project team would compile for approval by the Department a second briefing note that would outline the issues to be addressed by the Department; this would include issues such as the needs of the organisation (of the interviewee) with regard to the administration of veldfire management, capacity to administer and so on.
- 4) Interviews would be semi-structured and interviewers would operate in reflective listening mode.
- 5) The output would be a summary of interviews, with particulars of the interviewee as well as a summary of the main matters to arise from each interview; interviewers would retain hand-written notes.
- 6) about 40 interviews will be completed, depending on availability of interviewees and time and budget constraints.

**c) Environmental landscape (TOR 1.3)**

This task entails an investigation of the veldfire management and natural resources management in South Africa and would involve the development of the text for the report specified in item (4) above, i.e. an outline of the ecological role of veldfire in South Africa, the use of fire in the management of natural resources, and the nature and pattern of veldfire risk in the country, as well as recent and anticipated trends in these elements of the management issue, including the influence of emergent issues in environmental management and sustainability (such as air quality); this would:

- 1) be based upon an integrated summary of the information contained in recent syntheses on veldfire, such as in books on the vegetation of South Africa, but incorporating the content of material published subsequent to such volumes.
  - 2) address the likely effects of global change on veldfire and its management.
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- 3) through direct interaction with project team members, develop scenarios of veldfire management requirements that may emerge from current policy and development trends, e.g. biodiversity management, air quality management, urbanisation and community-based natural, resources management.
- 4) provide this information classified by biome or by fire type, the latter being the system followed by the Department of Water Affairs and Forestry in its national risk assessment, and by planted cover types, i.e. forest plantations, sugar-cane plantations, and other crops.

**d) Organisational/operational fire models (TOR item 2)**

This task will involve a comparative analysis of organisational and operational models from different locations across the globe of direct relevance to South Africa, and would:

- 1) analyse three countries, i.e. Australia, Indonesia and one South American country.
- 2) for each, outline the system of government in relation to that set in the Constitution of South Africa and elaborated in the White Paper on Local Government and the Municipal Systems Act.
- 3) provide a brief comparative analysis of the veld and forest fire management problem in each of these countries, according to pre-determined descriptors of the problem.
- 4) for each country, identify the institutions with direct responsibility for fire management, the nature of their institutional roles and responsibilities, the policy fields that determine their roles and responsibilities and the statutes, statutory obligations and policy instruments that affect their roles and responsibilities, and how they interact with key government and non-government institutions (community, NGO, private sector) in administering rural fire management and/or in managing fire.
- 5) summarise the lessons for South Africa, and provide inputs to the elaboration of administrative options for South Africa, by mapping institutional roles and operational fire-management models in two or three scenarios.

**2.1.2 Deliverable 2: Revised Options Report.**

The deliverable will be a revised version of Deliverable 1, with appropriate additions as outlined below.

**a) Integration**

The process to generate deliverable 2 will build on the previous deliverable principally by using the interviewees, plus any additional stakeholders identified during the work to this point, as participants in review workshops. The main purpose of the workshops is to review Deliverable 1, focusing on the veracity of the situation assessment, the adequacy and relevance of the catalogue of alternatives, the decision criteria and their rationale, as well as inviting participants to feed forward to Deliverable 3. This will serve to triangulate the work to this point, while also gaining support for the initiative, and sensitising the project team to issues that may have been neglected.

**b) Regional workshops**

- 1) Participants

As indicated the list of invitees will be based upon the list of interviews, augmented according to information gained during interviews and the other work.

- 2) Summary Draft Options Report
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The Draft Options Report will be summarised into approximately 20 pages. The report will be written in a way accessible to stakeholders in terms of language level, fog index and general coherence (note the DEAT Guidelines – the public participation agency must be able to produce readable reports).

The EIA Guidelines specify that stakeholders must have the opportunity to verify that their issues have been captured. Apart from a comprehensive project description, motivation and alternatives being considered, the report will include an outline of the terms of reference for the Specialist Studies based on the issues raised. It will further include an Issues/Response Report, which will list every issue raised.

### 3) Workshop organisation

We propose to convene three regional workshops during the week of 12 April 2004 for the KwaZulu-Natal/E.Cape, Limpopo/Mpumalanga and Free State/North West/Northern Cape/Western Cape regions. At these workshops the Draft Options Report will be discussed in detail and detailed comment obtained. It is expected that about 40 people will attend each workshop. Representatives of established institutions as well as community structures will be invited and encouraged to attend. Zitholele Consulting will facilitate the workshops with key members of the project team presenting aspects of the proposed project.

An advantage of regional workshops, provided that they are properly organised, is that they expose the views of different stakeholder groupings to others. This often broadens people's perspectives, contributes to reason prevailing and adds value to the project. Regional workshops are also excellent in addressing the process objectives, i.e. those objectives of establishing trust, creating a shared vision and promoting a partnership between the Department and the public. They also provide a sense of occasion, and an important milestone to which both the public and the proponents and their consultants can work towards.

The key requirements for a successful and useful public workshop are as follows:

- it must have a clear purpose, and thus the objectives of what needs to be achieved by the workshop must be clearly defined
- stakeholders should receive notification of the workshop date and its objectives at least six weeks in advance
- a formal advance registration process must be allowed
- stakeholders should receive documentation for the workshop at least five working days before the workshop, with a formal information letter of their attendance
- stakeholder people need to be briefed in advance (the purpose of the stakeholder briefings noted above)
- a dry run workshop for project team members needs to be conducted in advance of the workshop to agree on the content and comprehension levels of their presentations and to strategise for discussion sessions.

### 4) Consolidated proceedings

Consolidated proceedings of the three workshops will be produced immediately thereafter and will record all the issues raised and verification that issues raised previously have been captured. The proceedings will be distributed to everyone who attended with a request to crosscheck the way in which their contributions were recorded, and an invitation to raise further issues within a week of receiving the proceedings. New issues will be captured in the Final Options Report.

### **c) Revised Options Report**

Following the workshops the team will revise the contents of the Draft Options Report, and add sections to form the Revised Options Report, as follows:

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- 1) a tentative recommendation on a preferred option, based upon the views and preferences of stakeholders as well as rational analysis, with an outline of the identity, purpose, intent, role, responsibilities, form, function, competence and linkages (to institutions with linked responsibilities) of the institution in which the function is to be placed, with a summary of the prerequisites for successful implementation, and
- 2) a rough road-map for implementing the decision, which will outline the action plan that the Department and other key stakeholders should follow, including how to address such things as organisational strategy, structure, budgets, and staffing with job descriptions, as well as organisational or institutional development.

### **2.1.3 Deliverable 3: Final Report with Recommendations**

The deliverable will be the final report as specified in 3.2 above.

- **National focus group session**

We propose to convene one national focus group session with key representatives of the relevant sectors. This meeting will be held in Pretoria, Gauteng Province. The meeting will assist to focus key stakeholders' and DWAF's minds on recommendations made in the Final Options Report. This meeting will also be instrumental in focussing the consultants on issues that need to be addressed and those that could constitute a potential fatal flaw to the study.

- **Drafting the Final Report with Recommendations**

Key members of the project team with others nominated by the Department will sit together to agree on amendments to the Revised Options Report, especially the last sections, and thereafter the authors will complete the text.

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## Appendix B: Analysis of the provisions in the National Veld and Forest Fire Act and classification as core and non-core functions.

Functions		Function classification	Sphere of responsibility	
Primary function	Secondary function (relevant section of Act quoted in brackets)		Current	Future
<b>Chapter 2: Fire Protection Associations</b>				
Formation of Fire Protection Associations (FPAs)	Seek support and promote FPAs where still needed (s. 3(3))	Core	National: DWAF	?
Registration of FPAs		Core	National: DWAF	?
	Designation of government officer as FPO if FPA unable (s. 6(4))	core	National: DWAF	?
	Registration of FPO (s. 6(6)(b))	core	National: DWAF	?
Financial and other assistance		core	(a) National: DWAF with respect to Act (b) Owners, for contributions, and municipalities, for fire services	?
De-registration of FPAs		core	National: DWAF	?
<b>Chapter 3: Fire Danger Rating</b>				
Prepare and maintain ... a fire danger rating system		core	National: DWAF	?
	Consult about the system (s. 9(2))	core	National: DWAF	?
Divide the country into regions for fire danger rating		core	National: DWAF	?
Require FPAs to provide information		core	National: DWAF	?
Communicate the fire danger ratings, publish warnings and ensure records		core	National: DWAF	?
Delegate NFDRS powers and duties to SAWS or successor, or other organisation		core	National: DWAF	?
<b>Chapter 4: Veldfire prevention through firebreaks</b>				
Exemption from duty to prepare and maintain firebreaks		core	National: DWAF	?
<b>Chapter 5: Fire fighting</b>				
Agreements for mutual assistance		Non-core: may be delegated	(a) National: DWAF, and (b) Local: FPAs	?
<b>Chapter 6: Administration of the Act</b>				
Making regulations		core	National: DWAF	?
Delegation of powers and duties		core	National: DWAF	?
Assignment of powers and duties		core	National: DWAF	?



## Appendix C: Indicative framework of baseline cost for FPAs in South Africa. Risk classification as in Section 2 above.

	Expenditure	Source of income
<b>EXTREME RISK AREA</b>		
Total cost of employment, FPO	140,000.00	Municipality
Other office running (transport, communication, etc)	125,000.00	Members
Depreciation on pooled fire-fighting equipment	60,000.00	Municipality
Contribution to Umbrella FPA	50,000.00	Members
<b>Total</b>	<b>375,000.00</b>	
Total area of extreme risk, ha	37,192,800	
Recommended average area of FPA, ha	250,000	
No. of FPAs	149	
Total FPA cost	55,789,200.00	
Government contribution	37,192,800.00	
Member's contribution	26,034,960.00	
Member's contribution per ha per year (assume 80% of FPA area), R per ha	0.88	
<b>HIGH RISK AREA</b>		
Total cost of employment, FPO	140,000.00	Municipality
Other office running (transport, communication, etc)	125,000.00	Members
Depreciation on pooled fire-fighting equipment	60,000.00	Municipality
Contribution to Umbrella FPA	50,000.00	Members
<b>Total</b>	<b>375,000.00</b>	
Total area of high risk, ha	34,572,700	
Recommended average area of FPA, ha	400,000	
No. of FPAs	86	
Total FPA cost	32,411,906.25	
Government contribution	21,607,937.50	
Member's contribution	15,125,556.25	
Member's contribution per ha per year (assume 80% of FPA area), R per ha	0.55	
<b>MEDIUM RISK AREA</b>		
Allowance, FPO	40,000.00	Municipality
Other office running (transport, communication, etc)	40,000.00	Members
Depreciation on pooled fire-fighting equipment	30,000.00	Municipality
Contribution to Umbrella FPA	20,000.00	Members
<b>Total</b>	<b>130,000.00</b>	
Total area of medium risk, ha	13,943,000	
Recommended average area of FPA, ha	500,000	
No. of FPAs	28	
Total FPA cost	3,625,180.00	
Government contribution	2,509,740.00	
Member's contribution	1,673,160.00	
Member's contribution per ha per year (assume 80% of FPA area), R per ha	0.15	
<b>SUMMARY</b>		
Total government contribution	61,310,477.50	
Total members' contribution	42,833,676.25	
Total baseline cost of FPAs	104,144,153.75	



**Appendix D: Indicative budget for the custodian of the fire function, with an indication of the total call on government finance. See Appendix C for the estimates of transfer to local government.**

<b>HEAD OFFICE</b>			
1 Director	300,000.00		
1 DD	280,000.00		
1 AD	200,000.00		
2 Administrative Assistants	160,000.00		
Office and running	500,000.00		
Consultancy, communication and research	5,000,000.00		
<b>Total</b>	<b>6,440,000.00</b>		
<b>REGIONS</b>			
	<b>Salaries</b>	<b>Running</b>	<b>Total</b>
Limpopo	360,000.00	180,000.00	540,000.00
Mpumalanga	360,000.00	180,000.00	540,000.00
Gauteng	180,000.00	90,000.00	270,000.00
North West	360,000.00	180,000.00	540,000.00
Northern Cape	180,000.00	90,000.00	270,000.00
Free State	180,000.00	90,000.00	270,000.00
KwaZulu-Natal	540,000.00	270,000.00	810,000.00
Eastern Cape	540,000.00	270,000.00	810,000.00
Western Cape	360,000.00	180,000.00	540,000.00
<b>Totals</b>	<b>3,060,000.00</b>	<b>1,530,000.00</b>	<b>4,590,000.00</b>
<b>SUMMARY OF CALL ON GOVERNMENT FINANCE</b>			
Total custodian expenditure	11,030,000.00		
Transfers to Local Government	61,310,477.00		
Government fees to Working on Fire	20,000,000.00		
<b>Total government contribution</b>	<b>92,340,477.00</b>		