



REPUBLIC OF GHANA

# NATIONAL WILDFIRE MANAGEMENT POLICY



MINISTRY OF LANDS, FORESTRY & MINES

## FOREWARD

The development of this National Wildfire Policy marks a significant turning point for natural resource management in Ghana, since this is the first time in the history of this country that a comprehensive wildfire policy has been developed.

Wildfire is perhaps the most important single threat to the integrity of forests in Ghana. In recent years, Ghana has lost an ever-increasing percentage of its Gross Domestic Product (GDP) to the indiscriminate ravages of wildfires. It is also the direct cause of irreversible environmental damage in Ghana. In certain areas of the country the process of desertification has been hastened due to wildfires, which have permanently destroyed delicate but vital organic soil material. At present, most fire-affected areas show progressive degradation. A number of Forest Reserves, which were formerly tall, dense tropical forest, rich in biodiversity have become grasslands with scattered fire-damaged relict canopy trees.

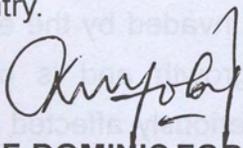
In the more severely damaged areas, however, the land is invaded by the exotic weed, *Chromolaena odorata*, which depresses woody growth and is highly inflammable. The loss of forest cover in the country has seriously affected local communities by its effects on local hydrology and the loss of a wide range of non-timber forest products. The impact of fire on the physical environment initiates a cycle of degradation, which locks the indigenous population in a spiral of decreasing crop yields and dwindling resources, and greatly exacerbates the already existent problems of poverty, poor health and disease.

In the past, a number of legislations were passed to address and manage wildfires in the country. However, the absence of a clear-cut national policy led to ad hoc and uncoordinated planning, inconsistencies in the implementation and poor enforcement of wildfire laws. The resultant effect has been increasing incidence of wildfires over the years leading to severe environmental degradation and widespread poverty.

Therefore, to conserve, enhance and protect the natural environment from uncontrolled fires, it is important to have a comprehensive national policy, which will give a more proactive, pragmatic and comprehensive framework to guide and determine government actions towards wildfire management. The policy will also ensure consistency in formulation of legislation and bye-laws at all levels of governance to deal with the issues of wildfires in the country. In addition, by developing a national policy on wildfire, Ghana will be addressing global concerns for environmental quality management, and minimise risks from climate change.

This policy is different from other past policies because it has taken cognisance of the failures of the past interventions and has now incorporated a multi-sectoral and best-practice approaches in the policy framework.

It is my fervent wish that this policy document would provide the basis and necessary framework for designing any future interventions to address wildfire issues in the country.



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## 1. Preamble

Fire has always been used as a tool for land management and plays a central role in the maintenance of many natural ecosystems, as well as in the practice of agriculture and rangeland management. Many indigenous communities use fire for small-scale land clearance and elimination of debris in their traditional slash and burn agriculture, which has been practised since time immemorial, taking advantage of the annual dry season. Fires are used not only for farming activities but also for hunting, pasture management and cultural practices. With increases in population, these traditional farming practices are no longer able to provide sustainable farming systems.

In the past, fire as a tool for land management did not cause considerable degradation to either the forest or the production potential of soils. However, this situation changed drastically during the severe drought of 1982/83 when wildfire became a major cause of forest and land degradation with the result that currently wildfire threatens the promotion of timber plantation development, biodiversity conservation, agricultural production, watershed management and the maintenance of environmental quality.

Although, statistical data on incidence and impact of wildfire are inadequate, it has been estimated that the total land area prone to wildfire annually ranges from 30% in the High Forest and Transitional Zones to over 90% in the Dry Northern Savannah Zones. An assessment of Ghana's vulnerability to climate change carried out recently by Environmental Protection Agency (EPA) indicated that carbon dioxide (CO<sub>2</sub>) accounted for the largest share of Ghana's greenhouse gas emissions. The increasing levels of CO<sub>2</sub> were principally attributed to the removal of woody biomass stock and emissions from fuel combustion, which are basically the result of annual wildfires.

The net effect of increasing levels of CO<sub>2</sub> has been temperature rise, decreased precipitation and rise in sea levels. It has been postulated that if

the current trends continue then within the next decade, the annual temperature is going to rise by 2.5oC whilst annual rainfall will decrease by 170 mm. This will lead to a decrease in crop yield thereby undermine food security in the country and worsen poverty.

Statistics at the forestry sector reveals that the annual loss of revenue from merchantable timber to wildfire is about US\$24 million. The cumulative effect of wildfires is an annual loss of 3% of Gross Domestic Product (GDP) estimated at about US\$210 million. Although the devastating effects of wildfires are felt by all, it is the poor who are particularly at risk because they depend directly on land for their livelihood and often live in fragile ecosystems.

## 2.0 BACKGROUND

### 2.1 Past policies and initiatives in wildfire management

The initial efforts at controlling wildfires did not place any emphasis on management. The first official attempt to manage wildfires was seen in the Savanna Woodland Policy of 1934. This policy however only sought to persuade (not coerce) local communities to embrace fire management as a tool for savannah woodland management. The policy advocated for the prevention of burning farmlands and grasslands and encouraged wildfire awareness campaigns. The policy implementation was ineffective because the strategies proposed were at variance with the cultural practices of the people, which included slash and burn as an agricultural practice.

Later in the 1940s, new strategies for fire management were formulated. These strategies included annual trace burning, construction of fire belts, early burning, and patrols during dry season, wildfire awareness campaigns, and green fire-belt establishment. Whereas these strategies worked effectively in Protected Areas and Forest Reserves, they failed to address wildfires outside the Forest Reserves. With time, the off-reserve areas became the sources from where wildfires emanate and spread to the forest reserves.

The situation became uncontrollable in 1983 when the country lost most of its natural forests thus marking a turning point towards the adoption of a comprehensive fire management effort in the country. These efforts culminated in the implementation of several donor-funded projects on wildfires, the formation of inter-agency working groups to plan and manage wildfires in the country and the enactment of various policies and legislative instruments to deal with the problem of wildfires. A critical examination of the legislations and policies on wildfires passed since 1983 revealed the following:

#### a. **PNDCL 46 (1983) - Control of Bushfire Law**

This law was enacted to control bushfires in the country. However, the law failed to make provision for implementation arrangements in terms of responsibilities for governmental agencies and roles for communities and Traditional Authorities. In addition, fines and penalties prescribed under the law were not deterrent enough and hence the law did not achieve the desired results.

#### b. **PNDCL 229 (1990) - Control and Prevention of Bushfire Law**

This law, which replaced PNDCL 46, was an improvement over the 1983 law in assigning functions to the District Assemblies and making provision for the establishment of Village Fire Volunteer Squads. Nevertheless, it did not provide a comprehensive framework for addressing the wildfire menace in the country. Its limitations were that:

- The custodian of the law appeared to be ambiguous.
- Absence of Legislative Instruments to guide and streamline the implementation of the law.
- Penalties in the law were not deterrent enough to prevent intentional setting of fires.
- The law did not empower the Traditional Authorities and communities to play a key role in its enforcement.

#### c. **The Forest and Wildlife Policy of 1994**

This policy aimed at conservation and sustainable development of the nation's forest and wildlife resources for maintenance of environmental quality and perpetual flow of optimum benefits to all segments of society. However, the policy did not consider wildfire as a major issue in forest management and therefore did not place wildfire management high on the national agenda.

#### **d. The Ghana National Fire Service Act, 1997 (Act 537)**

This is an Act that re-established the National Fire Service to provide for the management of undesired fires and made provisions for related matters. However, the Act was flawed with respect to wildfire management as it was highly skewed towards industrial and domestic fire management. In addition, the Act did not go far enough with respect to empowering local communities and groups to deal with wildfire management issues. Even though the Act advocated for the establishment of community based fire volunteers, it was silent on how logistics could be provided to assist their operations.

### **2.2 Constraints in Wildfire Management**

The existing policies and legislations on forestry, wildlife and environmental management do not adequately highlight the menace of wildfires. There are no clear-cut policies on wildfire management in the country. Therefore all legislations and laws that were enacted did not emanate from comprehensive policies. The weaknesses in the national efforts have constrained wildfire management at all levels of governance. This is seen in:

- Weak co-ordination among stakeholders on the issue of wildfire management,
- Inadequate environmental awareness and the failure of the general populace to recognise the devastating effects of bush burning on the natural environment and its linkages to land degradation and poverty.
- Failure to involve traditional structures and systems in fire management resulting in resistance to change due to beliefs, attitudes, values and practices.
- Farming systems based on the slash and burn practices with no emphasis on containing the fires on the farms.

- Bad logging practices and inability to enforce logging regulations.
- Inadequate and uncoordinated wildfire management policies and programmes.
- Poverty, social conflicts, and lack of incentives for the local communities to participate in wildfire prevention and control programmes.
- Inadequate budget provision for effective wildfire management
- Lack of pasture management and inability to control the activities of nomadic herdsmen leading to indiscriminate setting of fires during the dry season.

### **2.3 Challenges in adopting a National Wildfire Policy**

Past experience has demonstrated that wildfires cannot be controlled through legislations, bye-laws and annual launching of wildfire control educational campaigns at the central level. The country needs to move away from piece-meal approach to wildfire management to a more comprehensive and sustainable community-based approach. The challenge is how to formulate a national policy that would give direction and change people's attitudes to adopt more sustainable approaches to minimize the incidence and impacts of wildfire.

### 3.0 THE POLICY FRAMEWORK

In order to address the above challenges this policy provides a holistic framework for addressing the problems of wildfire management in the country and ensures an effective system, which will minimize the incidence and impacts of wildfires and enhance the socio-economic transformation of the country.

#### 3.1 Guiding Principles

The national wildfire management policy is based on the principle that:

- Land and its resources provide the direct source of livelihoods for majority of rural population and that poverty reduction and wealth creation in the country are dependent upon effective management of wildfire for sustainable management of natural resources,
- Different ecological zones and natural resource management systems exist in the country, which require different wildfire management systems,
- Fire would continue to be used as a tool for rural land management but this must be done in a controllable and an environmentally friendly way,
- Wildfire management requires multi-sectoral approach and gender sensitive collaboration among stakeholders including the vulnerable,
- District Assemblies (DAs), Traditional Authorities (TAs), opinion leaders and local community groups including women and youth groups are important actors in wildfire management,
- Wildfire management activities at all levels will be carried out based on effective and efficient planning and networking,

- Capacity of communities and community structures will be developed in wildfire management and this will be sustained through the provision of adequate and appropriate logistic and technical support by taking into consideration their indigenous knowledge,
- International best-practiced systems and indigenous knowledge are important ingredients in evolving sustainable wildfire management practices,
- A nationally co-ordinated early warning systems and well formulated public education programmes are essential for sustainable wildfire management,
- Sustainable incentives, rewards and benefit-sharing system are indispensable in successful wildfire management,
- Adequate research needs to be encourage and promoted in collaboration with local and international bodies and sustained to provide the basis for developing best practices in wildfire management.

### **3.2 Policy Goal:**

The National Wildfire Policy seeks to promote effective and efficient management of wildfires for the sustainable management of natural resources and maintenance of environmental quality to improve on the socio-economic well being of the citizenry.

### **3.3 Policy Objectives**

The objectives of the Wildfire Management Policy are:

- (i) to ensure effective and efficient prevention and control of wildfires,

- (ii) to encourage the adoption of alternative resource management systems that will minimise the occurrence of Wildfires,
- (iii) to develop the necessary structures and systems which will ensure stakeholder participation in wildfire management and,
- (iv) to promote user-focused research in wildfire management.

### **3.4 Policy Strategies**

Deriving from the policy objectives, the following strategies intended to guide policy actions and execution of specific activities will be pursued:

#### **3.4.1 Effective prevention and control of wildfires**

High incidence of wildfire in the country would be controlled through the adoption of the following strategies:

- Development and promotion of integrated wildfire prevention and control practices based on appropriate technologies and systems.
- Inclusion of wildfire prevention and control issues in resource management planning at all levels by relevant institutions.
- Promotion of effective communication strategies, training and environmental education to sustain public awareness.
- Inter-agency coordination, cooperation and networking at international, national, district, and community levels shall be vigorously pursued.
- Development of adequate infrastructure and manpower to support wildfire prevention and control.

- Introduction and promotion of Fire Danger Rating Systems to provide signals on potential for wildfire occurrences.
- Introduction and promotion of appropriate fuel treatment procedures and technologies to reduce combustible residue in the environment.
- Dissemination and enforcement of decentralised regulatory measures on prescribed burning in farmlands and non-farmlands.
- Enhancing participation of communities and environmental groups in planning, implementation, monitoring and evaluation of wildfire prevention and control activities.
- Empowering and supporting Traditional Authorities, and District Assemblies to take the responsibility of managing and coordinating wildfire issues.
- Involvement of women and other vulnerable groups at all levels of wildfire prevention and control programmes in the country.
- Integration of indigenous knowledge and international best practices in developing systems of wildfire prevention and control.

### **3.4.2 Promotion of alternative resource management systems**

In pursuance of alternative sustainable resource management systems that will minimise the occurrence of wildfires, the following strategies are recommended:

- Encouragement of agro-forestry, enrichment planting, enhanced natural regeneration and reforestation.

- Promotion of sustainable rural enterprises such as snail farming, apiculture, ecotourism, domestication of wildlife, mushroom farming, and herb gardens.
- Support for the development of the capacities of local people in the management of common property natural resources such as communal forests and grazing lands as well as key sites in pastoral land use system.
- Support the adoption of improved and sustainable methods of wood carbonisation for the commercial production of charcoal.

### **3.4.3 Develop the necessary structures and systems which will ensure stakeholder participation in wildfire management**

Sustaining wildfire prevention and control system will be pursued by developing the appropriate traditional structures and systems which will allow the full involvement of all stakeholders in decision-making, resource mobilization and implementation of wildfire programmes. The following strategies would be pursued:

- Institutionalisation of participatory approaches in wildfire management at all levels and empowering traditional authorities and community leaders to take full responsibility for the prevention and control of wildfires at community and village levels.
- Development of appropriate capacities of all stakeholders in wildfire management.
- Establishment of a National Wildfire Management Fund and a District-based insurance scheme to ensure sustainable participation of all stakeholders in wildfire management activities at all levels.
- Institution of incentive, reward and benefit-sharing schemes for communities, individuals and institutions that distinguish themselves in wildfire management.

- Periodic review and amendment of laws and regulations on wildfire to meet changing situations.
- Ensuring that basic schools, Agriculture and Forestry Institutions of higher learning incorporate courses in wildfire management in academic curricula.
- Promoting and sustaining public awareness, training and environmental education campaigns at all levels of governance to prevent wildfires particularly communities in high to medium fire risk areas.

#### **3.4.4 Promoting User-Focused Research in Wildfire Management**

- Resourcing Research Institutions and other relevant bodies to conduct basic and adaptive research on wildfire management.
- Promoting effective collaboration and coordination amongst relevant local and international research institutions and other bodies.
- Collation and dissemination of relevant research findings to appropriate institutions and stakeholders for adoption.

## 4.0 IMPLEMENTATION ARRANGEMENTS

In view of the multi-sectoral approach to the implementation of the policy on wildfire management, it is envisaged that all relevant institutions and stakeholders will develop individual policy actions towards the achievement of the policy objectives. The key institutions that would be responsible for the implementation of this policy include, but are not limited to:

### a) **Ministry of Lands, Forestry and Mines**

- Lead agency responsible for wildfire policy co-ordination, and monitoring.
- Collation and dissemination of research findings to appropriate institutions and stakeholders.
- Sourcing financial and technical support for wildfire management activities

### i) **Forestry Commission**

- Development of Wildfire Management Systems in collaboration with relevant Stakeholders
- Implementation of Manuals of Procedures on Wildfire Management
- Promotion of Collaborative and Community-Based Wildfire Management Systems

### b) **Ministry of Interior (Ghana National Fire Services, Ghana Police Service and NADMO)**

#### i) **Ghana National Fire Service**

- Developing and carrying out fire suppression and training programmes throughout the country
- Developing comprehensive mechanism for detecting and monitoring fire Incidence

#### ii) **Ghana Police Service**

- Law Enforcement

- iii) **National Disaster Management Organisation (NADMO)**
  - Fire Disaster Management
- c) **Ministry of Defence (Ghana Air Force)**
  - Conducting aerial fire monitoring and suppression
- d) **Ministry of Local Government and Rural Development (District Assemblies)**
  - Empowerment of chiefs/Traditional Rulers to enact appropriate and relevant bye-laws on wildfires
  - Assist Communities to implement the necessary Bye-Laws
  - Provision of logistical support to Chiefs and communities in wildfire management
- e) **Ministry of Food and Agriculture (Directorate of Agricultural Extension Services)**
  - Providing extension services for the adoption of appropriate farming practices that will minimise the use of fire in farming systems
- f) **Ministry of Environment and Science (Environmental Protection Agency)**
  - Monitoring and Evaluation of environmental standards on wildfire issues
- g) **Ministry of Justice and Attorney General**
  - Law interpretation and enforcement
  - Drafting of laws and prosecution
- i) **Judicial Service**
  - Law interpretation
- h) **Ministry of Education Youth and Sports**
  - Curriculum development
  - Career guidance
  - Awareness creation

- i) **Ministry of Communication and Technology (Meteorological Services Department)**
  - Fire weather monitoring
  - Provision of early warning signals
- j) **Ministry of Information (Information Services Department and Media Houses)**
  - Awareness creation
  - Fire prevention education
- k) **Ministry of Women and Children Affairs**
  - Awareness creation
- l) **Traditional Authorities**
  - Lead role in community mobilisation
  - Support enactment and enforcement of bye-laws at community level
- m) **Research Institutions/Academia**
  - Research in wildfire management
- n) **Fire Volunteer Groups and other Community-Based Organisations**
  - Fire detection, Communication and Suppression.
- o) **Non-Governmental Organisations**
  - Awareness creation
  - Community mobilisation
  - Logistical support
- p) **Forest-Based Trade Associations (GTA, GTMO, FAWAG, Small Scale Carpenters and Wildlife Exporters)**
  - Logistical support

## Glossary

**CONTROL BURNING:** a fire set by land managers to modify vegetation or achieve management objective.

**EARLY BURNING:** a fire set by land managers under controlled conditions immediately after the long rains, before the grasses have completely cured; usually resulting in a patchy mosaic of burned and unburned areas.

**EARLY WARNING SYSTEM:** a system of forecast to determine critical weather conditions affecting fire behaviour especially during the dry season

**FIRE DANGER RATING SYSTEM:** a system designed to gauge the flammability and receptiveness of various fuels for fire ignition, spread or intensity. This system is used to determine appropriate levels of preparedness and the need to pre-position fire fighting resources in critical areas.

**FIRE PREVENTION:** a programme that informs both internal and external audiences of the ecological, social, and economic implications of unwanted fire. It includes education, communication and other activities targeted to prevent fires from occurring.

**FIRE RISK AREAS:** Areas or zones that are highly susceptible to wildfire occurrence. These include locations close to settlements, forest conservation areas, farming areas, timber production areas, young plantations, convalescence and areas earmarked for conversion

**GREEN FIREBREAK:** a passive band of evergreen vegetation that is capable of stopping fires from spreading into protected areas.

**PRESCRIBED BURNING:** a fire deliberately set by management in order to achieve a pre-determined goal.

**SLASH AND BURN:** a system of farming involving clearing and burning vegetation to create plots for cultivation. Such lands are only good for a couple of growing seasons.

**TRACE BURNING:** it is the use of fire to burn all flammable fuel within a strip of land to the ground in order to serve as a buffer.

**VILLAGE FIRE VOLUNTEERS SQUADS:** community members enlisted to support wildfire management activities.

**WILDFIRE:** any fire in the natural vegetation and farmlands that is out of control.