BUSHFIRE RISK MANAGEMENT IN TRINIDAD

SUMMARY – ENVIRONMENTAL IMPACTS

All fires are human-caused.

Agricultural practices are a primary driver.

Human proximity increases risk.

Data limitations hinder broader mapping.

Climate data is not yet integrated.

RECOMMENDATIONS ENVIRONMENTAL IMPACTS

1. **Develop national fire susceptibility maps**
2. **Integrate climatic data**
3. **Invest in satellite imagery access**
4. **Prioritize high-risk areas**
5. **Leverage improved technology**
6. **Use risk mapping to guide school and community education programs,**

RESPONSE - SUMMARY

2019: 3,842 bushfires — peak in February (46% of annual fires); Southern Division most affected

2020: 3,674 bushfires — peak in April; Southern Division accounted for 38%

2021: 1,087 bushfires — notably lower, attributed to a wetter dry season; two peaks in February and April

2022 & 2024: Similar seasonal patterns, peaking in March–April

The fire season officially runs **December 1 to June 30**, but can be extended based on weather conditions

The vast majority of fires occur in built-up areas adjacent to forested land and are **human-caused and preventable**

ISSUES IDENTIFIED

Enforcement Gap

Resource Strain

Cultural Norms

Data and Climate Factors

Property Vulnerability

RECOMMENDATIONS - RESPONSE

For Individuals and Property Owners

Clear a minimum of **5 feet of vegetation** around all premises

Keep grass and vegetation moist where possible

Store flammable and combustible materials away from property edges

Install **fire breaks** in rural and farm areas

Ensure access to a **backup water supply**

Keep emergency contact numbers readily available

RECOMMENDATIONS - RESPONSE

For Burning Legally

Obtain a **fire permit** from the nearest fire station (costs only $10)

Burn only in **metal containers/drums**, in small heaps, with water nearby

Cooperate fully with fire guardians

Never burn outside of the designated fire season without authorization

RECOMMENDATIONS - RESPONSE

For Communities and Organizations

Partner with the Fire Service's fire prevention department for **community training**

Follow the Fire Service on **Facebook and WhatsApp** for public advisories

Engage schools, churches, and community groups in **fire awareness education**

Work collaboratively with Regional/Borough Corporations and their disaster management teams

RECOMMENDATIONS - RESPONSE

Systemic Recommendations

Strengthen **inter-agency coordination** — forestry, fire service, police, regional corporations, and disaster management units must work together

Invest more in **education and culture change** as the primary prevention strategy

Redirect resources currently spent responding to preventable fires into **development and community benefit**

Impact on Man Made Environment

Communication impacted poles optic lines with 10% of cable breaks attributed to bush fires

In 2019 bush fire sets alight to hazardous waste pits at Guapo 2024 fire in scrap iron yard, fire was at the core of the mound and would take a lot of water to extinguish.

OTHER IMPACTS

Water

Logistics

Roadways

Food security

Insurance

Business continuity

Bushfires & Public Health

HEALTH IMPACTS

Physical: The primary threat is PM2.5 (fine particulate matter), which penetrates deep into lungs and enters the bloodstream, causing system-wide inflammation. Key effects include respiratory exacerbations (asthma, COPD), cardiovascular events (heart attacks, hypertension), adverse pregnancy outcomes (preterm birth, low birth weight), neurological effects, and increased cancer risk. Canada's 2023 wildfires alone were linked to an estimated 87,000 premature deaths.

Mental: PTSD, depression, anxiety, sleep disruption, and substance abuse are well-documented after wildfire events, compounded by property loss, displacement, and economic instability.

Vulnerable Populations Children, the elderly, pregnant women, outdoor workers, people with chronic diseases, and low-income communities face the greatest risk.

RECOMMENDATIONS

- *Individual level:* Stay indoors during smoke events, wear N95 masks when outdoors, use saline rinse for irritation, monitor the Air Quality Index daily, and protect vulnerable household members.
- *Community level:* Conduct risk mapping, implement fire awareness programs in schools, develop and publicize community evacuation plans, and run public education campaigns.
- *Multi-agency/Institutional:* Break down silos between health, environment, disaster management, and government sectors. Fund resilience programs, strengthen supply chains for emergency response, establish clinical protocols for smoke-related presentations, and build post-disaster mental health counselling capacity.

Fondes Amandes Community Reforestation Project

Summary

NOTABLE INITIATIVES

Education: Created "Amazonica the Forest Defender," a character-based story used to teach children fire prevention. Continued school programs through COVID via radio and online platforms. Ongoing fire prevention content and community outreach.

Gaya (Community Work Day): An annual collaborative event (held in March) where schools, state agencies, corporate partners, and community volunteers come together to cut fire breaks, rig trees, and clean river lines. Running since 1995, it has proven highly effective for dry season preparedness. A Gaya toolkit is available for other communities to replicate the model.

Fire Tower: A monitoring tower (funded by NIKA — Natural Infrastructure for Caribbean Resilience) providing panoramic watershed surveillance, enabling early fire detection and rapid response coordination.

Draft Bush & Forest Fire Policy: Developed with the University of the West Indies, this policy represents a shift from bottom-up community action to a nationally driven legislative framework. Key pillars include prevention, suppression, policing, and restoration of degraded lands.

RECOMMENDATIONS

1

Policy & Legislative: The state should formally adopt and drive the Draft Bush & Forest Fire Policy. Legislation is needed to enforce penalties (fines up to $20,000 and six months imprisonment) as a deterrent.

2

Funding: NGOs doing frontline environmental work should have reliable access to the Green Fund and other available mechanisms to sustain ongoing operations.

3

Multi-stakeholder coordination: State agencies, fire services, forestry division, corporate partners, and community organizations must work together rather than in isolation.

4

Prevention first: Education and preparedness are more effective and less costly than reactive firefighting. Fire break maintenance, contour drains, and check dams must be treated as ongoing, not one-off, activities.

5

Replicate successful models: Communities are encouraged to visit Fondes Amandes as a working local model and to adopt the Gaya framework for their own dry season preparedness

Consistent across all presentations

DATA DRIVEN (SUSCEPTIBILITY MAPS, AI PREDICTIVE TOOLS

EARLY WARNING SYSTEMS

INTER-COORDINATION GROUPS