Annex 4

CBFiM in the Tanami Desert region of central Australia

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EXECUTIVE SUMMARY

For millennia, Aboriginal people have applied fire to their country to serve a myriad of purposes. Today the indigenous people of the Tanami Desert in Central Australia continue the practice of applying fire to their land systematically and, in so doing, maintain a central strand of their culture and connection with their traditional country. While fire is a part of daily life in desert communities, in mainstream Australia it is gaining recognition as a critical tool for the maintenance and protection of biological and cultural assets.

Over the last twelve years, the Central Land Council (CLC)[1] has actively encouraged and supported Aboriginal peoples' involvement in CBFiM in the Tanami region. For the last five years, this programme has had at its core an evolving participatory process with traditional owners of the region that combines traditional and contemporary fire knowledge, practices and technologies in annual cycles of planning, implementation, monitoring and review.

INTRODUCTION

Aboriginal oral history recorded in songs and stories passed down from generation to generation over thousands of years suggests that fire was applied deliberately, systematically and broadly across much of the Australian continent prior to European colonization. This evidence is supported by the records of nineteenth-century European explorers who routinely recorded fires burning in the landscape (Jones, 1969; Griffin, 1992).

It is thought that over tens of thousands of years the biota of the Australian arid interior was modified by its inhabitants, who effectively farmed the country with fire (Latz, 2007). This "firestick farming" (Jones, 1969) has created a patchwork mosaic of postfire ages in spinifex-dominated landscapes (Burrows and Christensen, 1991), which has induced a higher level of biodiversity and

1 The Central Land Council was established under the Aboriginal Land Rights (Northern Territory) Act 1976 with, among other functions, statutory responsibilities for Aboriginal land acquisition and land management for an area of approximately 780 000 km² in the southern half of the Northern Territory. The Council comprises 90 Aboriginal people elected from across its vast region, representing some 24 000 Aboriginal people from 15 language groups.

productivity than would otherwise have occurred. It has also protected the many areas of significant biological and cultural value from the harsh and destructive effects of intense summer wildfires, particularly along travel routes where burning activity was focused (Griffin, 1992).

Mirroring a continent-wide pattern after European colonization, however, the Aboriginal people of Central Australia were dispossessed of their traditional lands and resettled in communities run by the government or by missions. The absence of people from their lands caused a significant change in precontact fire regimes and consequently had a deleterious impact on landscape health and biodiversity.

In more recent history, Aboriginal people were discouraged from burning land returned to them, in an effort to prevent potential unintended damage to neighbouring pastoral properties and infrastructure. This attitude, which persisted for many decades and was advocated by pastoralists themselves, and by missionaries and government officials on their behalf, contributed to a further reduction of traditional burning practices among Aboriginal people who still retained traditional fire knowledge.

Belatedly today, the mainstream scientific and land-management communities have recognized the wildfire prevention and biodiversity values of traditional burning practices. Current practices aim to emulate the pre-European state of widespread fire application both to maintain connection to country and to protect the significant biological values of Central Australia. This case study describes how this goal is being achieved by Aboriginal people of the Tanami Desert, the many challenges involved in doing so successfully and the multiple benefits provided.

BACKGROUND

The Tanami Desert stretches across 260 000 km^2 of central Australia, 88 percent of which is within the Northern Territory (Thackway and Cresswell, 1995). It has a semi-arid climate with a northerly monsoonal influence and a highly irregular rainfall pattern. Annual precipitation is described as occurring over a north–south gradient of between 500 mm and 300 mm. This irregular rainfall pattern is mimicked in the boom and bust cycle of the Tanami's flora and fauna, which respond in dramatic fashion to large rainfall events. Fire management in the Tanami must take into account these pulses of extraordinary growth that occur in the years following above-average rainfall (Edwards *et al*., 2008).

Vegetation in the Tanami is dominated by spinifex grasslands with a variable overstorey on infertile soils, interspersed with wooded corridors along drainage lines. Although much of the vegetation appears to be biologically homogenous, it sustains a surprisingly rich diversity of native animals. The arid and semi-arid grasslands, for example, support the world's richest variety of desert reptile fauna (Griffin, Morton and Allan, 1993). It also contains many smaller features of high biological and cultural value, which must be managed for fire, specifically.

The Tanami Desert is recognized nationally for its areas of high biodiversity and its cultural value to Aboriginal people. In this region, nine species of fauna and one of flora are currently listed as threatened at the Northern Territory or

Australian national level (Australian Government Department of Sustainability, Environment, Water, Population and Communities, 2008). In 2007, the Northern Tanami Indigenous Protected Area (IPA)[2] was declared to be part of the Australian National Reserve System. The southern Tanami is currently being assessed for the same purpose, with the participation of its Aboriginal owners.

Under the legislative regime of land rights in the Northern Territory over recent decades, large areas of country were returned to Aboriginal people as Aboriginal freehold title. With the strengths inherent in this title, they are now at liberty to apply fire freely, in accordance with customary law, to serve a variety of environmental, cultural, spiritual and livelihood purposes. They also continue to use fire in their traditional economy (Vaarzon-Morel and Gabrys, 2008); a practice that remains relevant in contemporary society. Both men and women use fire on country in specific ways with specialized knowledge and skills. Fire and the absence of fire are used specifically to flush out game species or to attract them to areas of green pick. It is also used to proliferate, harvest and treat a variety of plant species which are utilized for food, medicine, tools, art, ceremonial or commercial purposes.

Until very recently, this burning has been constrained largely by the extent and condition of access tracks radiating out from communities and outstations. Given this constraint, fire management across large tracts of the Tanami Desert has continued to be characterized by frequent, uncontrolled and large wildfires.

During 2007, for example, a wildfire which burned over an eight-week period consumed a total of 80 000 km^2, or 38 percent of the region (Figure 1, next page), damaging important cultural, natural and infrastructure assets.

Three individual fires were started in separate areas of the Tanami Desert in 2007; over the subsequent eight-week period the fires coalesced and burned nearly 80 000km^2. Suppression efforts restricted the spread of the fire onto pastoral lands on the northern perimeter of the fire extent. The background map shows the pattern of the three primary land uses in the regions, with Aboriginal lands in yellow, pastoral lands in green and conservation areas in pink. The map inset indicates the area of responsibility of the Warlu Committee in the Tanami Desert of Australia.

OBJECTIVES

In response to these issues, a programme of CBFiM has been developed by the CLC together with IPA management committees, traditional owners and Aboriginal ranger groups, with support from the Northern Territory government body responsible for fire control, Bushfires NT.

The objective of this programme in the Tanami region is to emulate previous periods of active fire management progressively over extensive areas, in a way

2 An IPA is an area of indigenous-owned land or sea where traditional Aboriginal owners have entered into an agreement with the Australian Government to promote biodiversity and cultural resource conservation. In return, the government agrees to give some support to the traditional owners to carry out the land-management work required to conserve the land's ecological and cultural value.

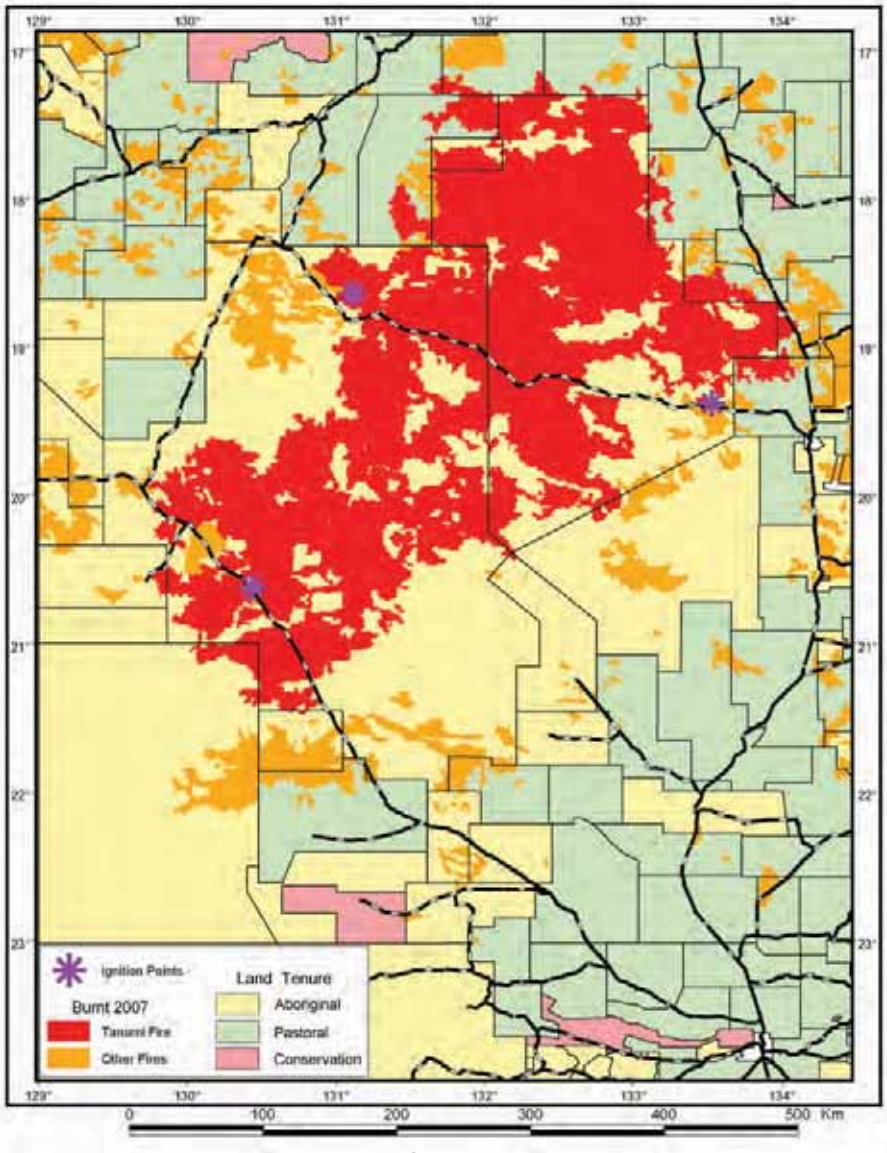

FIGURE 1
Location of Tanami Desert fires in 2007

that shifts the seasonality of fires back to a pre-European balance[3] (Figure 2). It aims to make the best use of contemporary fire management tools and techniques, community governance structures and a depth of traditional knowledge, all to facilitate effective fire management by remote indigenous peoples across their lands.

The largest areas burnt per month occurred over the August to November

3 This objective has been achieved in northern Australia through the West Arnhem Land Fire Abatement project, which is funded by Conoco Phillips under a voluntary carbon market instrument (Russell-Smith, Whitehead and Cooke, 2009).

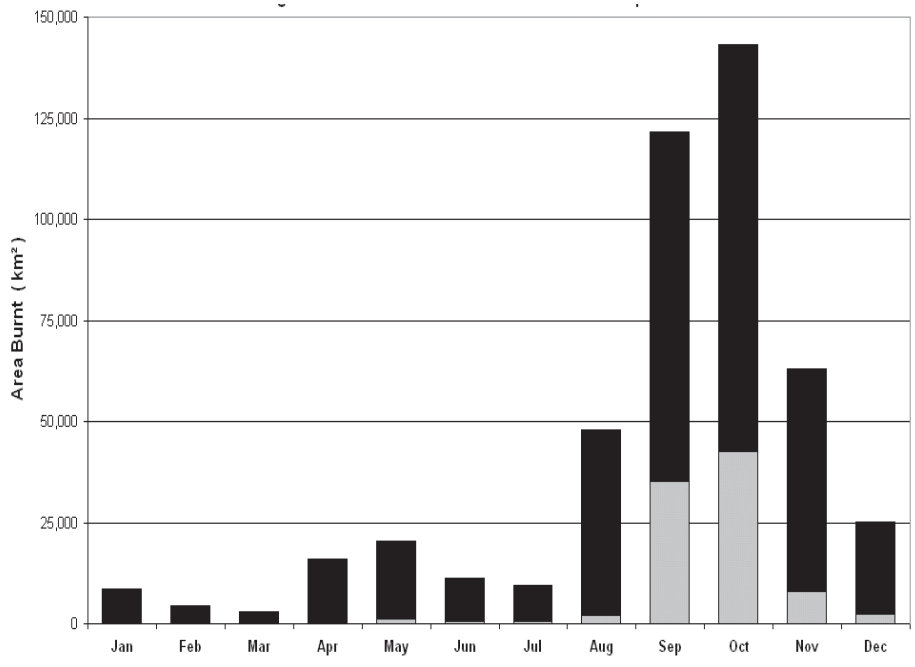

FIGURE 2.
Total area burnt, by month, in the Warlu Committee region during the period of 1997 to 2009 (Derived from AVHRR satellite images)

period; the period with the highest Fire Danger Indices. The extent of area burnt by fires in 2007 is shown in grey.

The programme promotes local ownership of fire management activities and provides an important mechanism for maintaining connection to country and culture, aspects of which are known to have tangible social and health benefits for Aboriginal people (Burgess *et al*., 2004).

THE CBFIM APPROACH

In order to support the many components of remote fire management by Aboriginal landholders in the Tanami, a structured process of planning, implementation, monitoring and review has evolved over the last four years. This adaptive management model is integrated with IPA programmes and Aboriginal ranger group work plans to take advantage of existing governance structures, personnel and resources.

Five factors have been critical to its success:

1. the establishment and enhanced capacity of Aboriginal ranger groups in the region supported under the Working on Country programme of the former DEWHA;
2. the development of two IPAs in the northern and southern portions of the Tanami, with DEWHA funding support;
3. the establishment and resourcing of a dedicated fire management position within the Central Land Council;

4. the development of a peak Tanami Aboriginal regional fire management body, the Warlu Committee[4], through research supported by the Natural Resource Management (NRM) Board (NT); and
5. the strong partnership approach taken by the CLC and Aboriginal traditional owners, together with the Northern Territory Government, and with Bushfires NT, in particular.

The Warlu Committee consists of two elected representatives from seven key Aboriginal communities and one or more Aboriginal rangers from each. This group provides the strategic direction for fire management on Aboriginal land across the broader Tanami region. Members also sit on IPA management committees and regional fire-planning groups, thus forming a strong link between regional and local planning processes.

Regional fire planning occurs in five key communities, where groups of 30 to 40 people meet annually to plan and prioritize fire management activities for the coming fire season. The activities under consideration are in addition to traditional burning undertaken by family groups throughout the year on their more accessible country. The ethos behind these planning meetings has been to provide the best available contemporary knowledge, tools and technology to each group, so that they can combine these assets with their traditional knowledge and skills to enable them to make informed fire management decisions. In places where IPA committees operate, fire-planning workshops are held as part of the larger IPA pre-fire-season planning meetings.

These annual planning workshops identify a selection of prescribed burning and wildfire mitigation activities that are required during the year. These activities, which may include both ground-based and aerial burning, are incorporated into the work programmes of Aboriginal ranger groups, members of which receive training by staff of the CLC and Bushfires NT. Operational costs are met primarily by the CLC, which accesses project-based grant funding from a variety of sources.

Prescribed burning and wildfire mitigation activities are undertaken as part of the larger body of work for that country, often in combined 'country' (cultural) fire trips. The benefits of pooling resources and combining burning activities with cultural maintenance have become very important for effective and strategic fire management practices, providing a familiar framework for traditional owners to re-engage with the broad-scale management of their country.

Similarly, land-management activities such as these are important opportunities to facilitate the intergenerational transfer of indigenous knowledge and skills on country. The older generation of Aboriginal people in this area hold the most knowledge about the impacts of fire on the landscape, about how to use it safely and about the physical barriers used to stop its unwanted spread; many of them acquired this knowledge through walking through country with their parents and grandparents. They understand how best to use fire to keep their land and people

4 "Warlu" means "fire" in Warlpiri, the largest language group of the Tanami.

BOX

Cultural value of the Tanami Desert

"The cultural importance to Aboriginal People of the (Tanami) stems from the inherent connection that exists between the physical landscape and Aboriginal culture. This connection can be thought of in two ways. Firstly, the land is of cultural significance because of the traditional activities that continue to be carried out on it such as gathering bush tucker, hunting, and practicing ceremony. However the primary cultural import stems from the belief that all of the land is imbued with cultural significance through the actions of the dreamtime ancestors. Aboriginal people in the region refer to this period as Jukurrpa, or 'the dreamtime' or 'dreamings' … .

Jukurrpa is a term that refers to the creative period when Spirit Ancestors travelled the country. These Spirit Ancestors, often called dreamings, were creative beings who rose up from the earth or travelled from distant places, and created and/or changed geographical features and placed different plants and animals on the earth. At some point in time, most of the Spirit Ancestors changed into a number of forms. Some became life forms or phenomena, such as certain species of plants and animals, celestial bodies, winds and rain. Others transformed themselves into rocks, trees and water courses, and their power became localised at certain sites. These sites are the "sacred sites" that are scattered throughout the Tanami.

GINA BROUN

Traditional owner Henry Cook visiting his family's sacred sites in the northern Tanami as part of the fire management programme

In addition to the localities which mark places where Spirit Ancestors ended their journeys or left items of importance, all land is criss-crossed with the tracks or paths of Spirit Ancestors. These tracks are marked with places where the Spirit Ancestors danced, ate, fought, slept... and so on. Regarded as repositories of power and the consciousness of the Spirit Ancestors, these places are also referred to as sacred sites... . Examples of some of the more extensive dreaming tracks are Ngapa (rain) and Wampana (hare wallaby).

Thus the country... while being a physical landscape is also a cultural landscape or a network of meaning. It is through interaction with this cultural landscape that (Aboriginal people)… derive cultural significance."

Extract from DRAFT Northern Tanami Indigenuous Protected Area Plan of Management

Source: Central Land Council Land Management Section (2006)

CENTRAL LAND COUNCIL STAFF

Traditional owner Myra Nungarrayi Herbert burning around significant wetland areas on her country

healthy. They value the opportunities with which land management presents them to be on country with their young people, to teach them about fire and to impart other important cultural knowledge.

In recent years, Aboriginal people of the Tanami have also assumed an additional measure of responsibility in caring for specific populations of animals and plants of considerable cultural significance to them, which have become seriously threatened since European colonization. As part of their regular burning activities, Aboriginal rangers throughout the Tanami undertake protective burning around remnant populations of species such as the Greater Bilby (*Macrotis lagotis*) and Great Desert Skink (*Egernia kintorei*) to ensure their survival and local prosperity.

Protecting remote infrastructure has also become a focus of fire management activities. There are a number of very remote family-based living areas within the Tanami (known as "outstations") constructed with basic services to enable the occupation of remote lands by family groups with traditional responsibilities for those areas. These basic facilities are highly valued by Aboriginal people and so become a focus of annual fire-prevention activities.

However, ground-based burning activities alone have not been sufficient to reach the scale of prescribed burning necessary to induce the desired patchwork mosaic of fuel types. In a sparsely-populated region with few access tracks, aerial burning offers one of the very few means of managing natural and cultural assets at the landscape scale. Proposals from the government for aerial burning of Aboriginal land were generally opposed by traditional owners in many areas throughout the 1980s and 1990s, particularly in the prevailing circumstances of the

time when they were not supported participants, and sites of cultural significance were considered to be at risk. Many senior Aboriginal people whose land had been returned to them recently also sought the opportunity that ground-based burning provided to access remote areas from which they had long been absent. However, through increased participation in aerial surveillance and the use of helicopters for remote placement on country, aerial burning has received greater acceptance by traditional owners in recent years and is rapidly gaining recognition within Central Australia as a critical factor in efforts to slow biodiversity decline.

In 2009, Myra Nungarrayi Herbert, a traditional owner in the central Tanami, directed the first aerial-burning activity on Aboriginal land by Aboriginal people in Central Australia (Photo). Since then, this technique has been tried by traditional owners on inaccessible lands in the southern, northern and eastern Tanami. It has been well received, and traditional owners have requested that aerial burning be used on their country on an ongoing basis.

With increased burning activity comes increased risk to neighbouring tenures, so risk-management strategies now form part of standard fire management in the Tanami. Through self-determined governance structures established by IPAs and Aboriginal ranger groups, cooperative fire management initiatives between Aboriginal people and their neighbours are developing to minimize the risk of fire causing damage across tenure borders.

The results of burning activities are monitored through the acquisition and interpretation of satellite images as the burning season progresses, by the use of 'hotspot' fire-tracking websites, and through repeat visitations to burnt country. Satellite imagery is used to identify fire scars and areas of high fuel loads, and this information is then used to refine subsequent burning activities. Also, websites such as the North Australian Fire Information service[5] prove invaluable in monitoring the active spread of fires in remote areas.

After the burning season has ended, the results of the year's activity are reviewed at an annual post-fire-season meeting of the Warlu Committee. At the annual meeting, Aboriginal rangers and members from across the Tanami discuss the fire-related work they have done throughout the year, where they have had successes and where challenges need to be resolved. The committee provides these groups with feedback and guidance on the following year's strategies and on how the different groups can work together most strategically.

This system of planning, implementation, monitoring and review enjoys a high level of participation because it provides Aboriginal people with the opportunity to make decisions about their lands and to work on their own country. More importantly, by using a participatory approach Aboriginal people are able to influence the future of their culture and their children (Walsh and Mitchell, 2002).

In the past, fire management programmes have met with only limited success in Central Australia, in large part because of the area's vastness, a poor level of engagement with indigenous landholders by relevant authorities and a scarcity of resources available to implement management on this scale (Griffin, 1992).

5 The North Australian Fire Information service is available at www.firenorth.org.au/nafi2/.

However, this new programme has a greater potential for success as a result of new partnerships based on: mutual recognition of the role of fire in maintaining biodiversity and its cultural significance to Aboriginal people; the ability to leverage limited funding; and the level of community ownership and participation. To ensure longevity, there remains an ongoing need to continue the development of capacity among local people to take more prominent roles in facilitating the fire management programme across the country in which they live.

Other challenges occur at a policy level where the discord between indigenous and mainstream fire management practices continues to be evident (Vaarzon-Morel and Gabrys, 2008). Government policies that encourage traditional burning (Bird, Bird and Parker, 2003) and that recognize the nationally significant environmental service it provides would help to reconcile this situation, as would formal recognition of the role of groups such as the Warlu Committee.

Another significant issue for this programme is the need to resource its operational aspects adequately, in particular, the costly activities of aerial burning and access track construction. These techniques are required both to meet the threshold needed to return fire regimes to a broad-scale traditional patchwork mosaic and to minimize risk. In the future, a GHG market, or a market based on other green and social services, may provide an economy that will fund fire jobs on country and will meet the operational costs of CBFiM in the Tanami Desert.

There is also a need to fund and support research on the specific long-term biological impacts and benefits of changed fire regimes on different ecotypes in knowledge-poor bioregions. The first and most basic aspect is for fine-scale fire history and vegetation mapping across Central Australia.

Similarly, programme participants are still learning how to apply fire on a broad scale to a highly flammable landscape that houses vulnerable 'islands' of ecological and cultural significance in contemporary Australia. The ability to manage the risks associated with applying fire at this scale will require increased collaboration with neighbours and so will provide more opportunities and benefits extending well beyond fire management.

Another challenge involves tailoring the format of review and planning workshops, as well as the language of fire, tools and techniques, to suit the several dominant indigenous language groups in the region. As programme facilitators, we aim to understand better and further benefit from the wealth of traditional fire and country knowledge held by traditional owners. In return, contemporary burning activities themselves will seek to serve better the aspirations of traditional owners for their country and their families, in particular, by making a significant contribution to the transfer of traditional knowledge to future generations of indigenous managers of the Tanami landscape.

CONCLUSIONS

The evolving model of CBFiM in the Tanami Desert has seen tangible benefits to the country and its people. Key benefits seen so far include:

- well-resourced and informed ranger groups involved in all aspects of the programme;
- increasing levels of active participation and ownership by traditional owners;
- improved relationships with neighbours of Aboriginal Land Trusts;
- protection of cultural and environmental values, and value of assets such as buildings;
- reinvigorated connection of people with their remote country;
- increased opportunities for intergenerational knowledge transfer;
- improved relationships between traditional owners and government fire authorities; and
- improved access by Aboriginal people to technical expertise.

While there are significant challenges to ensuring the programme's longevity, not the least of which is the security of operational funding, the system that has been developed is well-integrated, well-supported and, most importantly, is beneficial to the lives of its participants.

As the Tanami model develops, it will need to be evaluated and refined continually to ensure that it delivers optimal cultural, social and environmental benefits. If this approach continues to be successful and builds momentum and support, Aboriginal people in other parts of central Australia may well move to adopt a similar model in the future.

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Aboriginal people from the Tanami are the true owners, drivers and participants of this programme. Their feedback and encouragement is integral to its success and longevity.

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