



# **“Review of fire risk management in the tropics and its relation to Fire Smart Territory approach”**

## **Terms of Reference**

June 2022

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### **Background**

Tropenbos International is currently implementing the [Working Landscapes Program](#). By promoting climate-smart landscapes, we will contribute to climate change mitigation, adaptation, improved livelihoods and environmental integrity, which are crucial to achieving the Paris Agreement and the Sustainable Development Goals (SDGs). Forests and trees in well-managed landscapes have the potential to contribute significantly to climate change mitigation and adaptation, while supporting people’s livelihoods and sustaining agricultural value chains.

Fire use and wildfires are a risk in fire-sensitive ecosystems, including forests, and shape vegetation traits and landscapes. Wildfires impact ecosystems and trigger impacts on human, natural and social levels.

Application of fire in land use and land-use change as well as wildfires have been big issues in various parts of the tropics, with complex underlying causes and exacerbating factors. The use of fires has long been linked to traditional practices by indigenous communities. Current excessive application of fire in land-use change and resulting wildfires, however, are often as direct effects of modern agricultural development. Considering the urgency of handling fires in the tropics, Tropenbos International as part of the Working Landscapes Program, is implementing the project [Wildfire Project](#) which started its activities in 2021 in Bolivia and Indonesia and will start implementation in 2022 in Uganda, Ghana and Ethiopia.

In order to manage wildfire risk, it is of great importance to promote collaboration among stakeholders, and at different scales, to promote cooperative planning and collective decision making. This approach, which includes to strengthening governance, is what we apply in the Working Landscape Program, and in order to maintain coherence with the Fire-Smart Landscape Governance project we have selected the “Fire-Smart Territory (FST) approach” as the working approach in the project.

The FST approach is based on socio-ecological system analysis and emphasises on empowered communities and shared and collaborative governance in managing fires or reducing risk of fires. Under the established FST, stakeholders manage forest and land use through jointly agreed objectives and collaborate in reducing the risk of catastrophic fires.

In several publications (see publication list), the authors established the scope, guiding components and operationalizing principles for the FST approach. The concept was originally developed for a European context, but conceptually relevant to be applied in various other contexts, including the tropics. In its entirety, FST has its novelty for being a holistic approach as opposed to some of the earlier approaches putting emphasis on disaster management or mitigation. There is a need to understand if this approach can indeed be

applied in the tropics, as well as to understand its relationship with other approaches such as, for example, Integrated Fire Management, Shared Wildfire Governance or Fire Resilience.

Along with the implementation of the project in the aforementioned countries, there is a need for in-depth understanding of the past and current management of fire risk in the tropics and to learn about holistic approaches to address and manage fire risk in the tropical countries. More specifically, we would like to understand whether there have been efforts that reflect elements or components introduced in FST approach and how these are applied in the tropics. In reference to FST approach, whether its components and principles, or the combination of some of them, have been applied as part of addressing fire risk in the tropical landscapes. On a similar note, gaps or absence of any of those elements might have become the main issues underlying the recurrence or severity of fires in those tropical landscapes.

## Scope of work, tasks and responsibilities

### Objectives and leading questions

**The objective** of the review is to obtain a comprehensive understanding of fire risk management approaches and strategies in the tropics and its relationship to the FST approach.

As part of understanding the relevance of (components and principles of) FST approach for managing fire risk and its reduction in the tropics, **TBI Wildfire Project** proposes to **commission a study on “Review of fire risk management in the tropics and its relation to FST approach”**. The overall aim of the study is to gain better understanding of the key elements of the FST approach, and how these elements are/have been reflected as key factors in addressing fire risk in the tropical landscapes or ecosystems. The current assumptions are that despite the absence of reference to FST approach, the current handling of fire issues in the tropics might have involved in or benefited from the concept, especially with regards to collaborative governance and empowerment of the local communities. In the case of persistent recurrent fires, the gaps in handling them might reflect those deemed important in the FST approach concept, or on the contrary, there might be other factors not related to the FST that are more crucial for tropical context.

Preliminary questions for the review are:

1. What approaches and strategies of fire risk management are or have been applied in the tropics?
2. What are the elements of success in addressing fire risk in the tropics that reflect the inclusion of holistic socio-ecological elements?
3. What are the key characteristics of the FST approach that are currently been applied? To what extent has the FST concept, or its components and principles, been represented or reflected in the past and current fire management in the tropics and has it been successful in reducing risk to wildfires?
4. Is the definition of the FST approach suitable in the context of the tropics?
5. What are the key recommendations or syntheses on the potentials of applying FST approach in the tropical context? Are there complementarities or large overlaps with other fire risk reduction approaches?

### Process

There is a large number of studies that have documented successes in reducing wildfire risk in the tropics, including descriptions of challenges and barriers. The publications may be in the form of peer-reviewed scientific journal publication, as well as grey literature in the form of technical documentation, conference proceedings, academic papers and the like, all this type of information is the basis of the review.

The review (literature review or systematic review) should be conducted on the available publications that fall under the category of managing and addressing fires and fire risk management in the tropics, including search words such as integrated fire management, fire smart communities, community fire management, etc. The

geographic areas of the publications being reviewed must cover tropical countries with fires that took place in the tropical ecosystems/biomes or agricultural lands. Optionally, it can be enriched with literature of FST concepts and practices in temperate ecosystems.

## Expected outputs and deliverables

The outputs of the review will be a database of relevant literature and a synthesis report. The expected deliverables of the study are:

- 1) A proposal for the set-up of the study, including an interpretation of this ToR, proposed research questions and methodology (at the start of the project).
- 2) Database with literature, both peer-reviewed and grey
- 3) Synthesis report (a draft and a final version following comments) for external use, likely also to be included in the next [Tropical Forest Issue](#) (former ETRN) on fire smart landscape management
- 4) A glossary of the different terms used related to fire risk management

Based on the amount and depth of encountered information, there is an option to publish the results into a scientific, peer-reviewed article. The decision will be made upon the completion of the synthesis report. In this case, the assignment may be extended and the method and number of days will be further discussed and determined together with the consultant.

## Timeline/workplan

It is expected that the review can be carried out in 20 days/work. Including the proposal for the review and the feedback from the TBI team.

## Inputs

During the contracting period, TBI will:

- Provide reasonable secretarial and logistical support (in consultation), including relevant contacts
- Keep consultant informed of all activities and documents relevant to the performance of their duties.

Throughout the assignment, there will be collaboration with TBI staff and close working relation with the Project Coordination Team composed by Rosalien Jezeer (TBI Netherlands), Atiek Widayati (TBI Indonesia) and Humberto Gómez (IBIF Bolivia).

## Expertise required

For the above objectives, TBI is looking for a qualified researcher/individual to conduct the study. The potential candidates are with the following criteria:

- Familiar with the topics of forest fires, wildfires in the tropics and/or other issues on governance and management of natural resources in the tropical countries
- Demonstrated English writing skills through a good track record of publications on topics or issues in the tropical countries
- Experience of literature or systematic reviews into written publication is a plus
- The researcher is expected to have access to libraries and literature

Successful candidate will be contracted by TBI in the duration of July-August 2022, with the total of 20 working days. Individuals employed at an organisation are eligible as long as there is consent and approval for this consultancy including to produce publication under TBI name.

## Procedure

We seek to receive the following information from the candidate:

- A proposal and planning of the assignment, including the delivery of reports;
- Itemized budget;
- CV

## Awarding

The contract will be awarded to the “economically most advantageous tender”.

Criteria to be applied are:

- Quality of the proposal
- Competence of the candidate
- Price

Tropenbos International reserves the right to cancel the procurement procedure, without candidates being entitled to claim any compensation. Publication of this procurement notice does not commit Tropenbos International to implement the programme or project announced.

## Deadline and contact details

Proposals from candidates should be submitted before June 21<sup>st</sup> 2022 COD CEST time for the attention of Atiek Widayati (atiekwidayati@tropenbos-indonesia.org).

The successful applicant will be notified before June 30th.

## Publication list of FST

- Leone, V., Tedim, F., & Xanthopoulos, G. (2020). Fire Smart Territory as an innovative approach to wildfire risk reduction. In *Extreme Wildfire Events and Disasters* (pp. 201-215). Elsevier.
- Tedim, F., Leone, V., & Xanthopoulos, G. (2016). A wildfire risk management concept based on a social-ecological approach in the European Union: Fire Smart Territory. *International Journal of Disaster Risk Reduction*, 18, 138-153.
- Tedim, F., Leone, V., Amraoui, M., Bouillon, C., Coughlan, M. R., Delogu, G. M., ... & Xanthopoulos, G. (2018). Defining extreme wildfire events: difficulties, challenges, and impacts. *Fire*, 1(1), 9.
- Tedim, F., McCaffrey, S., Leone, V., Delogu, G. M., Castelnou, M., McGee, T. K., & ArAnhA, J. (2020). What can we do differently about the extreme wildfire problem: An overview. *Extreme Wildfire Events and Disasters*, 233-263.