https://www.ibama.gov.br/images/wildfire/orais/ID1113.pdf

# SERVIR AMAZONIA

*7th International Wildland Fire Conference (IWFC)*

## *User needs assessment for geospatial information to improve fire management in the Amazonia region*


**Kátia Fernandes, University of Arkansas**

**José Leandro Fernandes, CIAT**


**Campo Grande-MS, October 29 2019**

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# SERVIR Global

SERVIR GLOBAL

It partners with regional organizations worldwide to empower societies by advancing the use of geospatial technologies for the decision making process in various services areas


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# SERVIR GLOBAL

Collaboration with **19** US-based universities and research centers located in **14** states

Partner with **5** leading US technology companies

Active in **50** countries

Capacity of over **380** institutions worldwide improved

More than **6,600** individuals trained

**42** Custom services in development or delivery stages

## Partnerships

FAO FIAT PANIS

COLLECT EARTH ONLINE

## Methods

TensorFlow

## Technologies


GEDI ECOSYSTEM LIDAR


https://servir.ciat.cgiar.org/

## Background

- The SERVIR-Amazonia is part of SERVIR Global, a joint effort of the US National Aeronautics and Space Administration (NASA) and the United States Agency for International Development (USAID).
- It partners with regional organizations worldwide to empower societies by advancing the use of geospatial technologies for the decision making process in various services areas.
- SERVIR-Amazonia implementation is led by CIAT, together with Hub partner institutions (Spatial Informatics Group, ACCA and IMAFLORA), funded by USAID.

# Objectives

**Objective 01**

Establish a strong Consortium to collaborate on geospatial information services (in four thematic areas) to promote sustainable development across the Amazon region.

**Objective 02**

Build long-term networks and capacity in the Amazon region to design and develop geospatial information services that inform decision-making

**Objective 03**

Support improved decision-making across the Amazon region by the government and civil society through dissemination and use of geospatial services and tools tailored to users' needs

# SERVIR AMAZONIA

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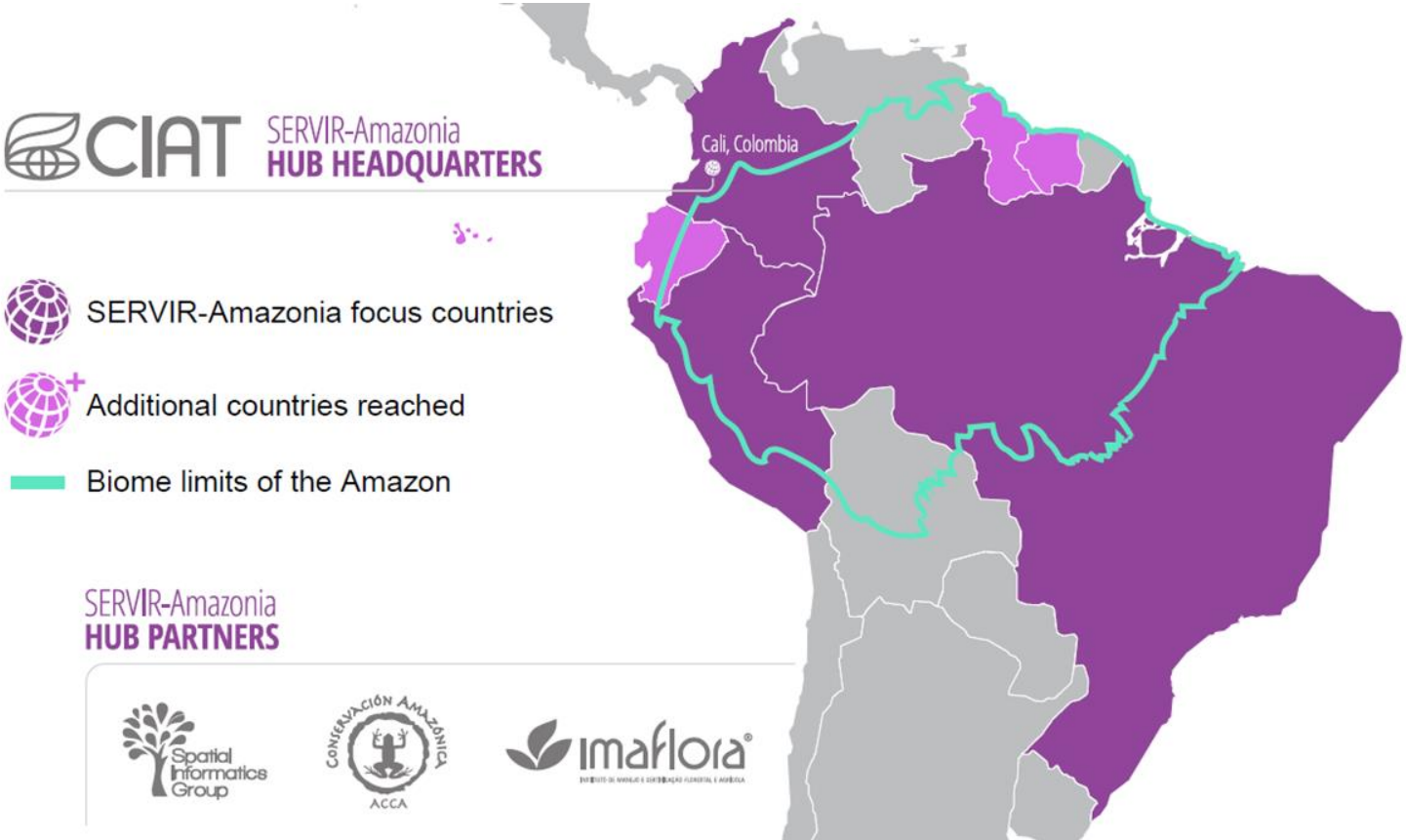
CIAT SERVIR-Amazonia **HUB HEADQUARTERS**

Cali, Colombia

SERVIR-Amazonia focus countries

Additional countries reached

Biome limits of the Amazon



SERVIR-Amazonia **HUB PARTNERS**

Spatial Informatics Group

Conservación Amazónica ACCA

imaflora

# Service Areas

Drought and Fire Risk

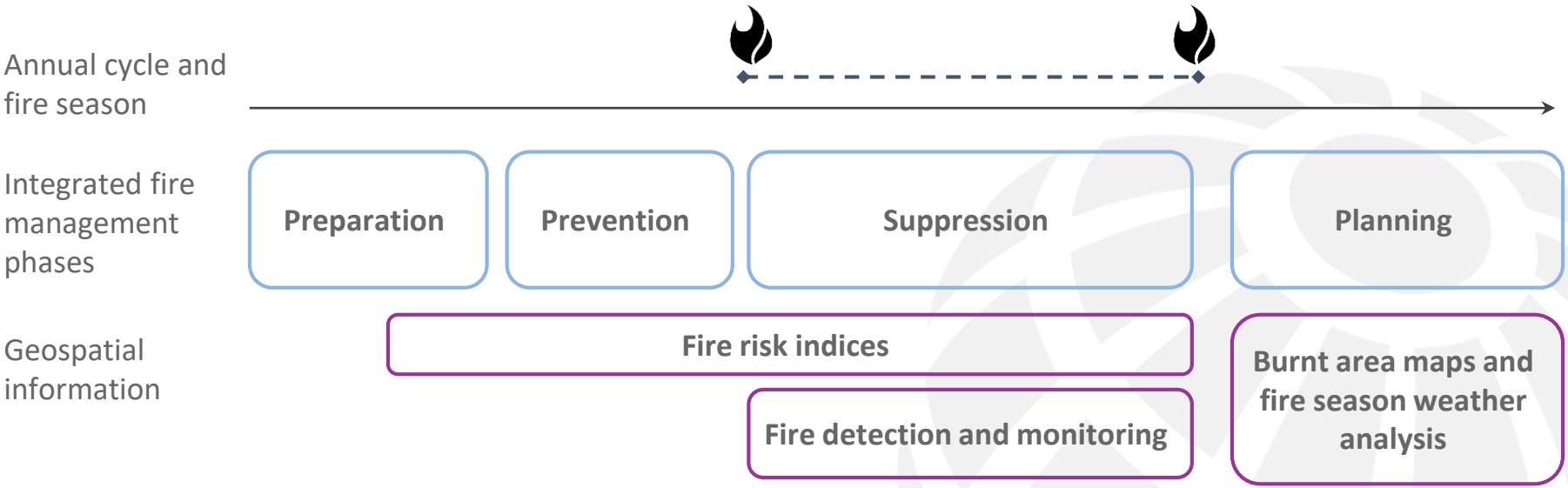
Water Resource Management and Hydro-Climatic Disasters

Weather and Climate

Ecosystem Management

# Fire and Drought

# Geospatial information for integrated fire management



# Geospatial information for integrated fire management

| Phases | Preparation | Prevention | Suppression | Planning |
|---|---|---|---|---|
| **Decision-making / planning questions** | Are there sufficient resources for suppression?<br><br>Where to invest resources in annual budget cycles? | Where and when do additional fire prevention and suppression resources need to be mobilized? | 1. Where to mobilize fire suppression resources?<br>2. Where are the fires? Where to implement initial attack on uncontrolled fires?<br>3. For uncontrolled fires, how big will it get and where will it go? Are there enough suppression resources mobilized? Will the fires damage key ecosystems? | Reflection on the fire season and planning of resources for next year. |

# Geospatial information for integrated fire management

| Phases | Preparation | Prevention | Suppression | Planning |
|---|---|---|---|---|
| **Actionable insight from geospatial information** | Fire season likely to be high, medium or low severity? | In next month is there a high, medium, low risk of fires? | 1. In next week, is there a high, medium, low risk of fires?<br>2. Where are the active fires in space and time?<br>3. Active fire perimeter and likely spread over 24/48 hrs | What was the extent of burnt area? Where? What were the weather conditions? |

# Geospatial information for integrated fire management

| Phases | Preparation | Prevention | Suppression | Planning |
|---|---|---|---|---|
| **Geospatial information** | ***Fire risk index*** - climate-seasonally based | ***Fire risk index*** - (sub) seasonal | 1. ***Fire risk index*** - 0-10 day<br>2. ***Hotspot*** - active fire monitoring<br>3. ***Fire progression***<br>• Fire perimeter maps using remote sensing and ground-truthing<br>• Fire progression model over 24/48 hrs (need fuel, spread model, weather, topography, computation resources) | ***Burnt area maps*** - fire locations, area burnt, area of intact forest burnt<br><br>***Analysis of historical weather*** - rainfall and wind. |

# Summary of user consultation workshops to identify issues around fire and geospatial information needs in the region

**PERU**

Needs:

- Early monitoring and alerts
- Automation
- Human and financial resources
- Interoperable geospatial information between various actors and sectors
- Multisectoral coordination
- Standardization of the information

Service Ideas:

- Improved fire and drought prevention information
- Development of fire propagation models
- Model of dispersion of pollutants and smoke from burning

# Summary of user consultation workshops to identify issues around fire and geospatial information needs in the region

**COLOMBIA**

Needs:

- Standardization of the information
- Information Integration
- Human and financial resources
- Promotion of use

Service Ideas:

- Real-time fire alert / report
- Fire Threat Forecast
- Drought alerts / forecast reports

# Summary of user consultation workshops to identify issues around fire and geospatial information needs in the region

**BRAZIL**

Needs:

- Integrated information portal between different public, private and non-governmental users (integrated database)
- Better articulation and engagement among users and decision makers
- Spatialize public data
- Framework for continued training on remote sensing issues

Service Ideas:

- More refined fire monitoring and forecasting
- Implementation of new technologies - Purple Air, Thermal Detectors, etc. [Includes training in technologies such as RADAR]

SERVIR AMAZONIA

SERVIR-Amazonia Team

- GIS Scientists
- Climate Scientists
- Economists
- Public Managers
- Forestry Scientists
- Social Scientists
- Biodiversity Experts

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# What is going on with the Fires in the southwestern Amazon? A short assessment by SERVIR-Amazonia

by Simone Staiger | Sep 10, 2019 | Communications, Deforestation, Drought and Fire | 0 comments


SERVIR-Amazonia, an initiative of USAID and NASA, shares the Amazonian population's concerns in regards to the impacts of fires currently affecting the Region, and renews its commitment to collaborate with populations, governments, research institutions, international community and other stakeholders to monitor and understand the causes and impacts of the fires affecting the Amazonian regions of Brazil and Bolivia.

One of SERVIR-Amazonia's four service areas focuses on Fires and Droughts. The Program is working to

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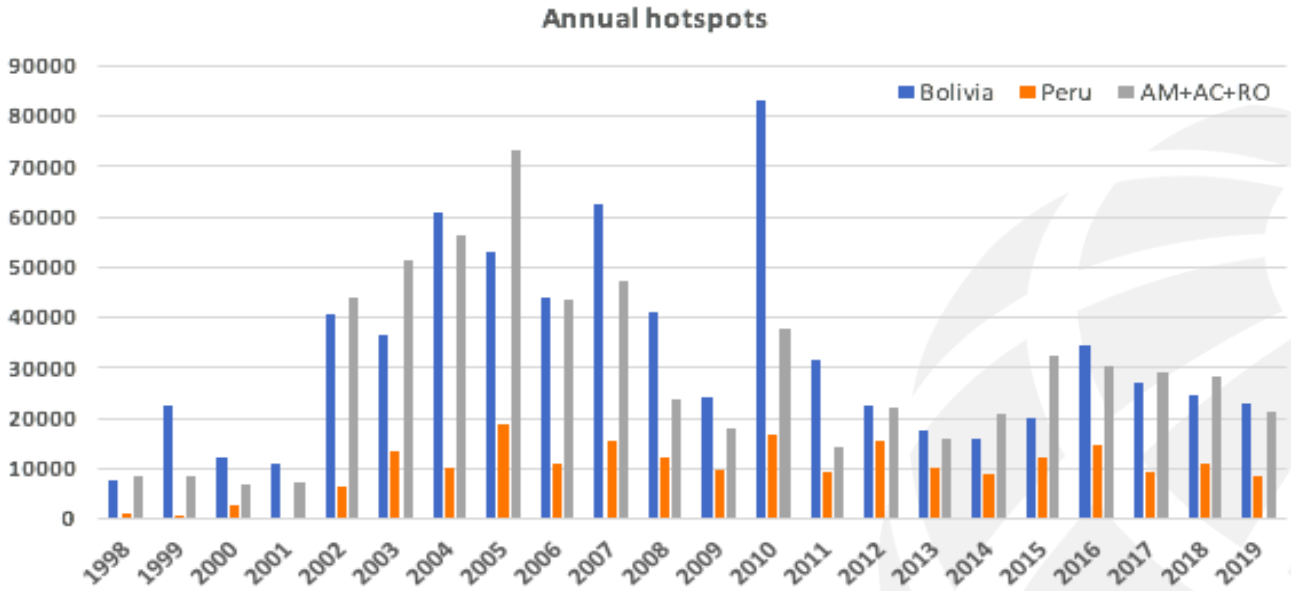
# Fires in the Amazon: number of hotspots in Peru, Brazilian Amazon states and Bolivia over the last 20 years

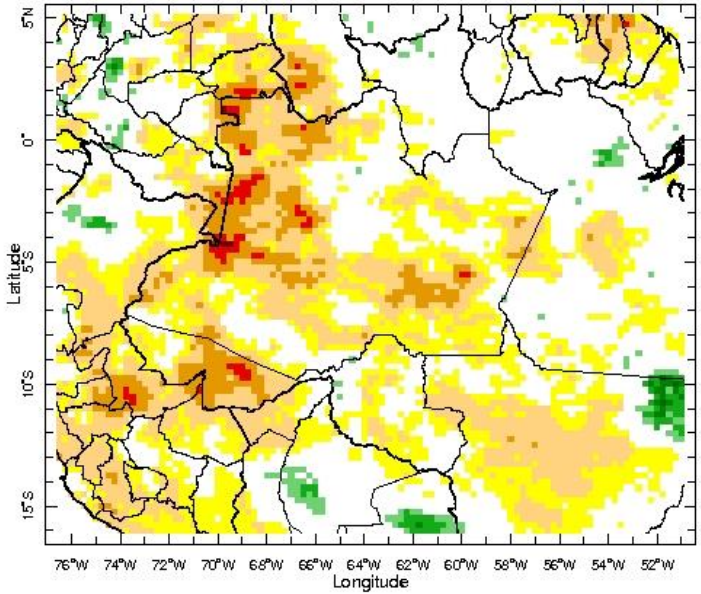



**Source: INPE**

**AM+AC+RO corresponds to southwestern Brazilian Amazon states.**

**2019 Hotspots count through Sep 9th.**

# Fires in the Amazon: precipitation anomalies leading to fire occurrence

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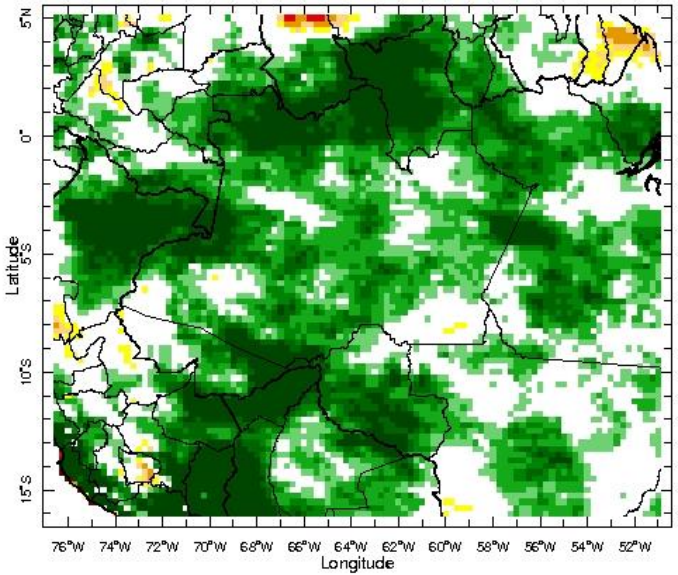


May-Jul 2019

**Source: CHIRPS- IRIDL**

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