

# Haze situation in Lao PDR



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# The sources of air pollution in Laos:

## 1. Automobile exhaust emission:

- Increasing population
- Increasing use of vehicle

## 2. Forest fires:

- In 2016, forest fire occurs on over 6,000 ha
- Severe in the northern part (e.g. Loungnamtha, Xayabouly, and Hounphan) because of slash and burn for cultivation.

## 3. Industry:

- Factory, manufacture

# Expansion of agriculture remains a leading cause of deforestation in Laos.

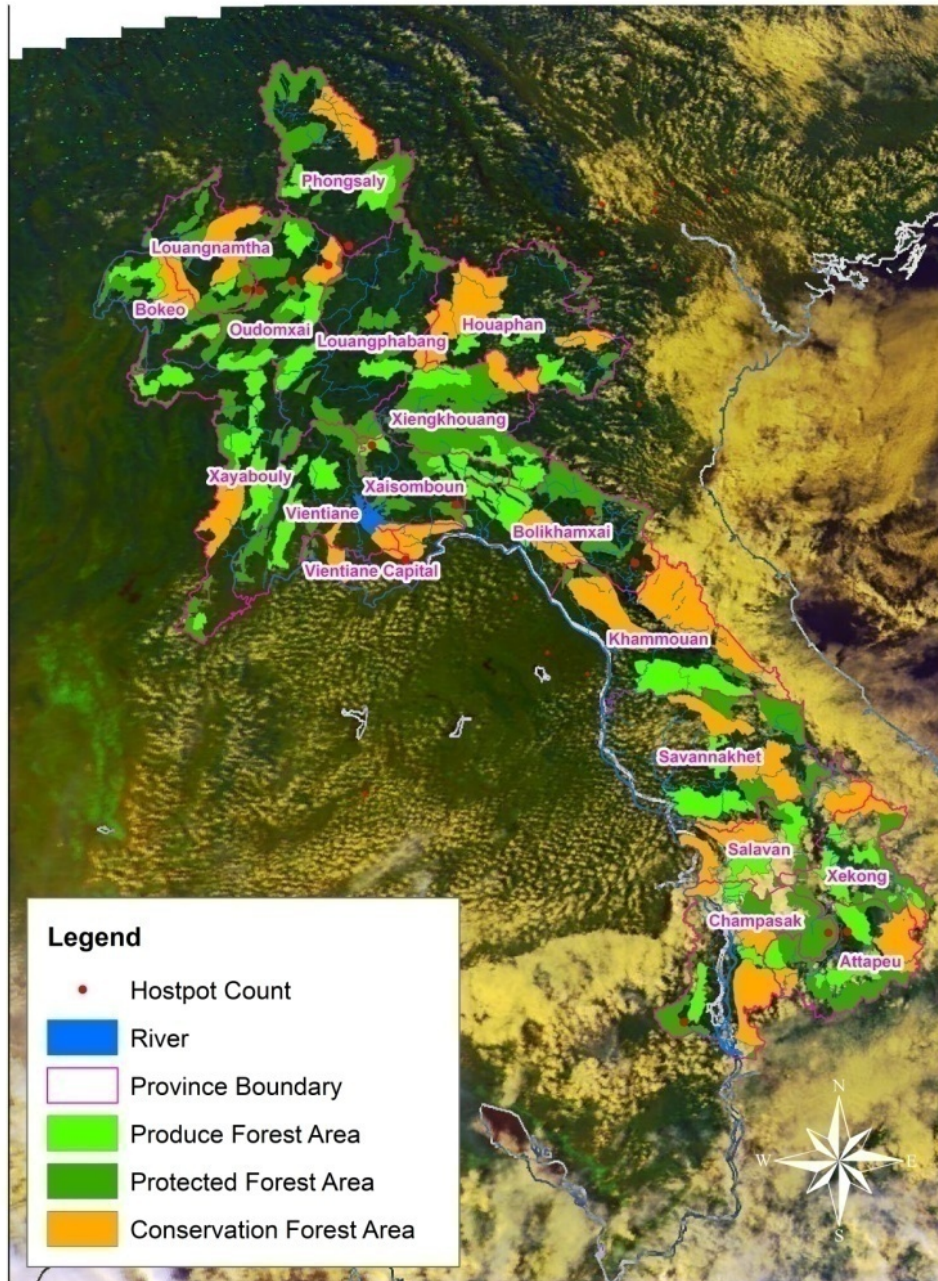


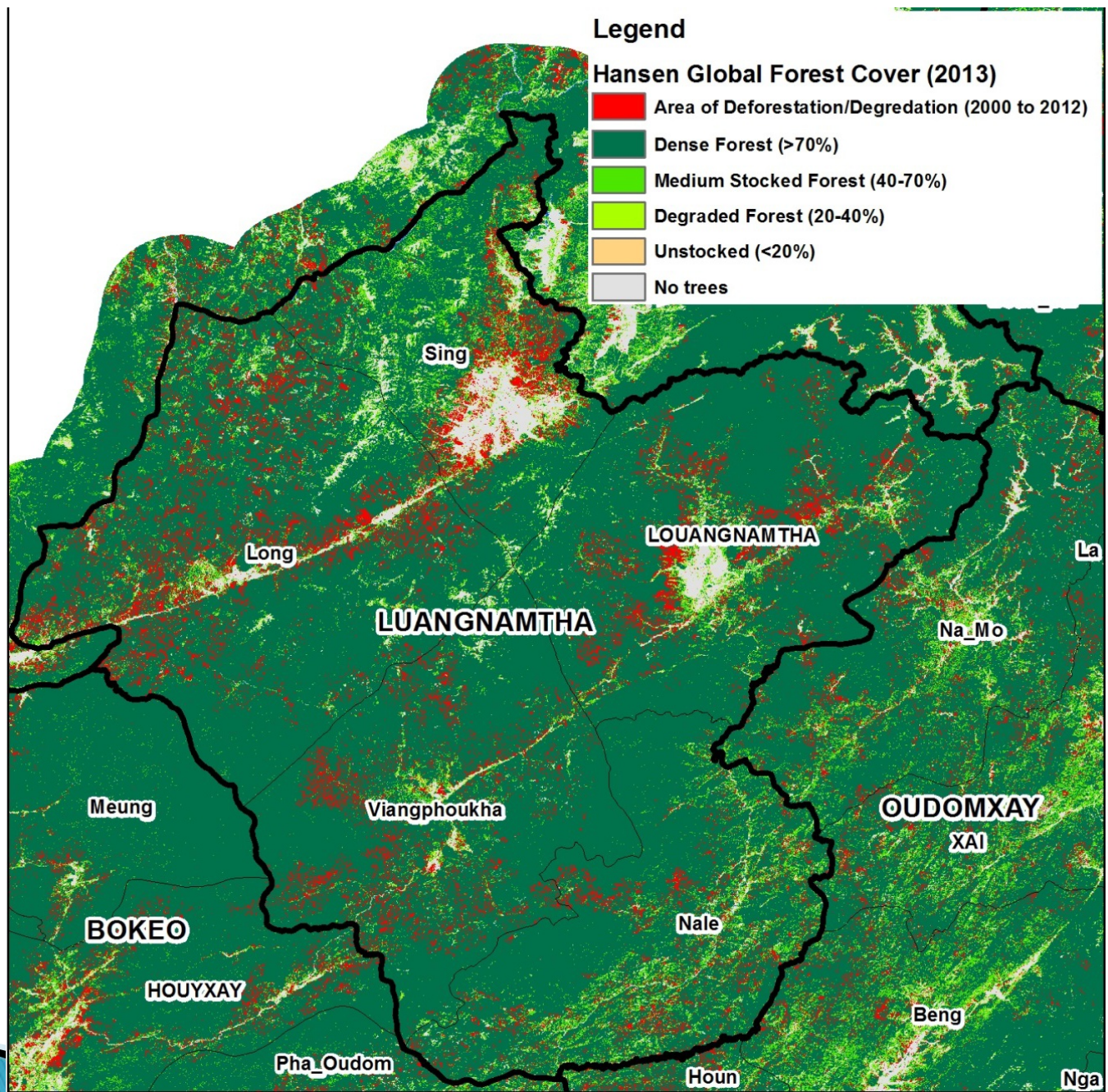
Shifting cultivation rice field , Laos Highlands– Source: FAS staff travel Sept. 2011





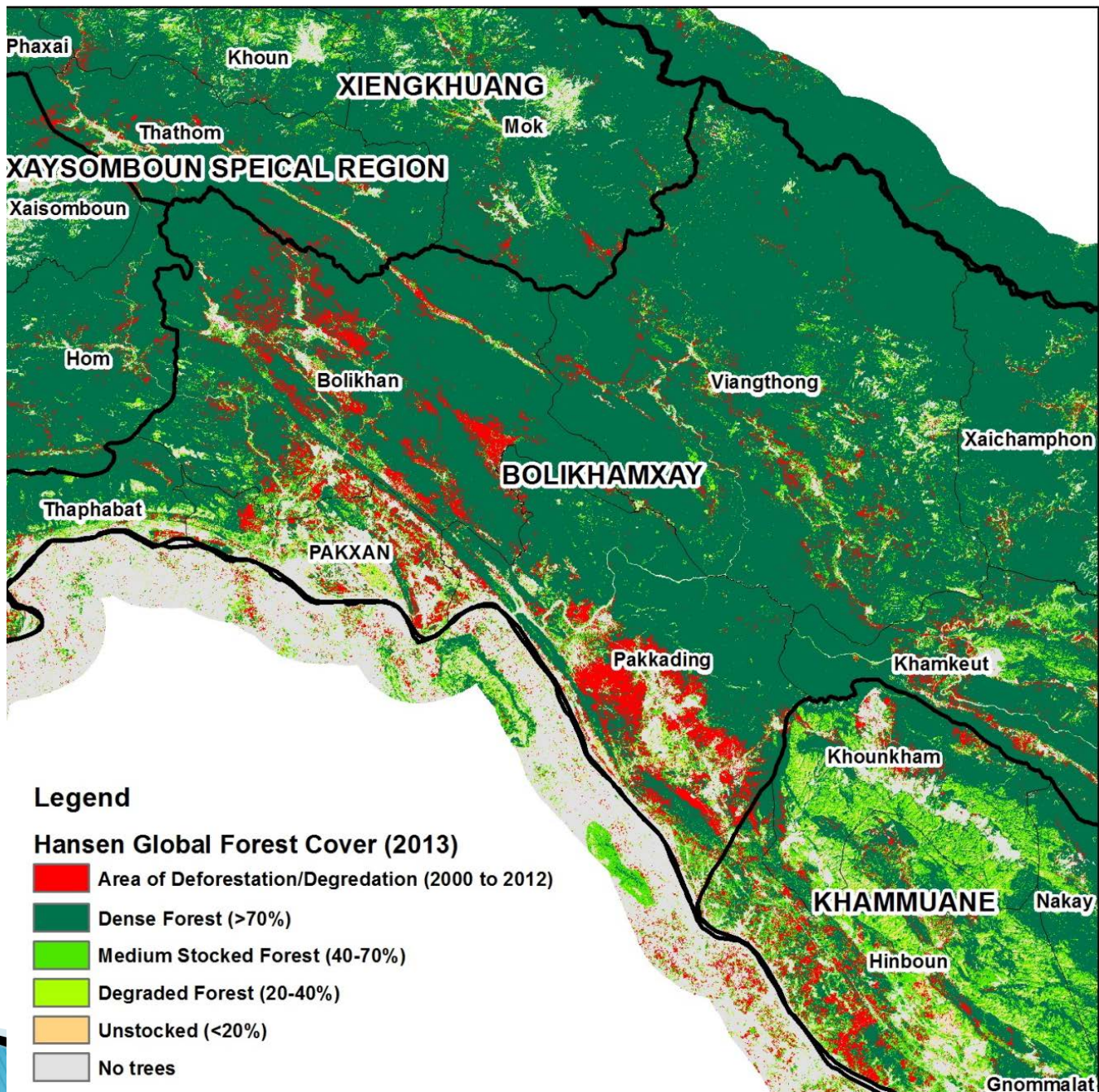
# 2018 01 22 FIRE HOSTSPOT IN 3 FOREST CATEGORIES





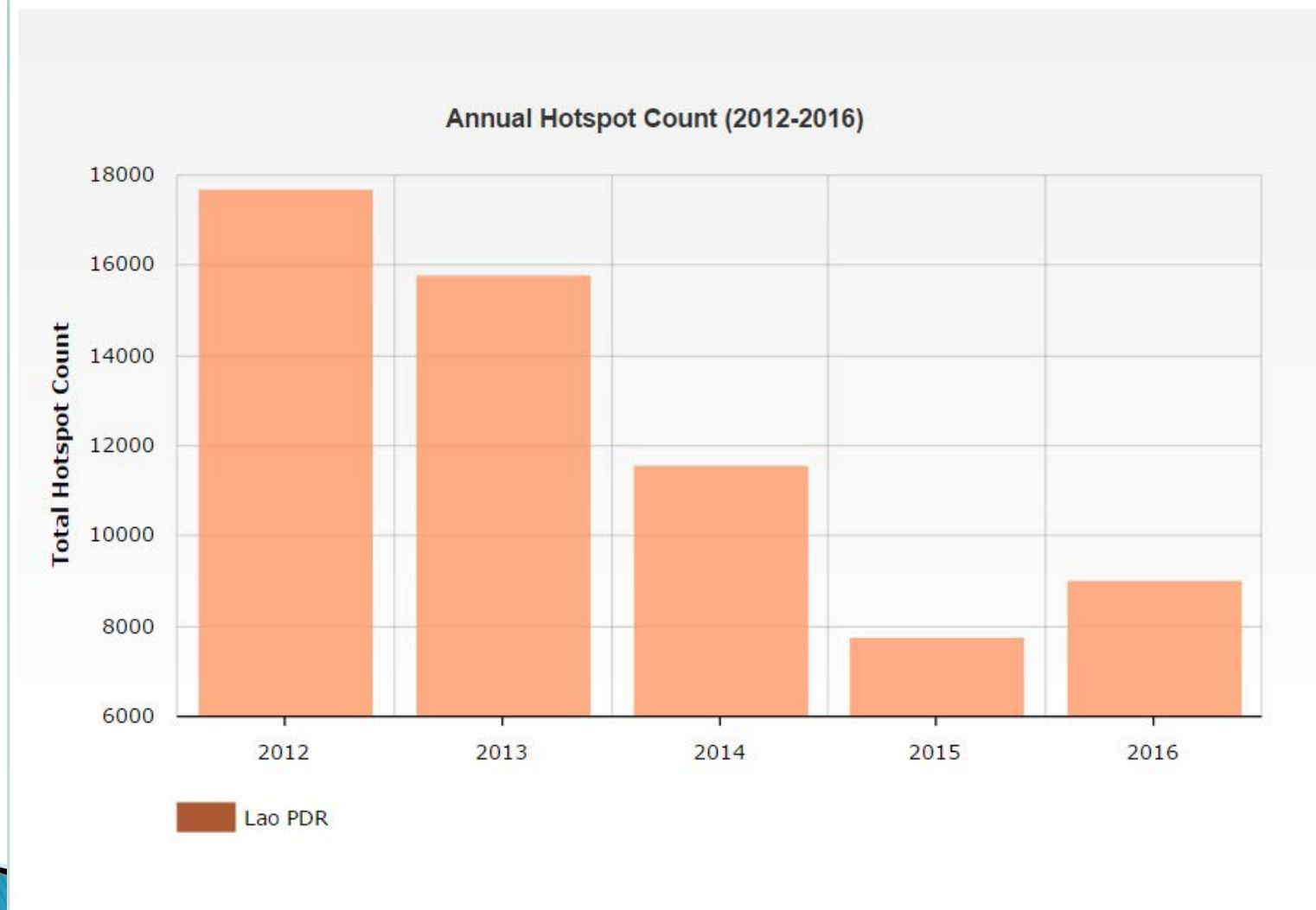
Map showing Forest Cover Changes in Luang Namtha Province (2000 to 2013)





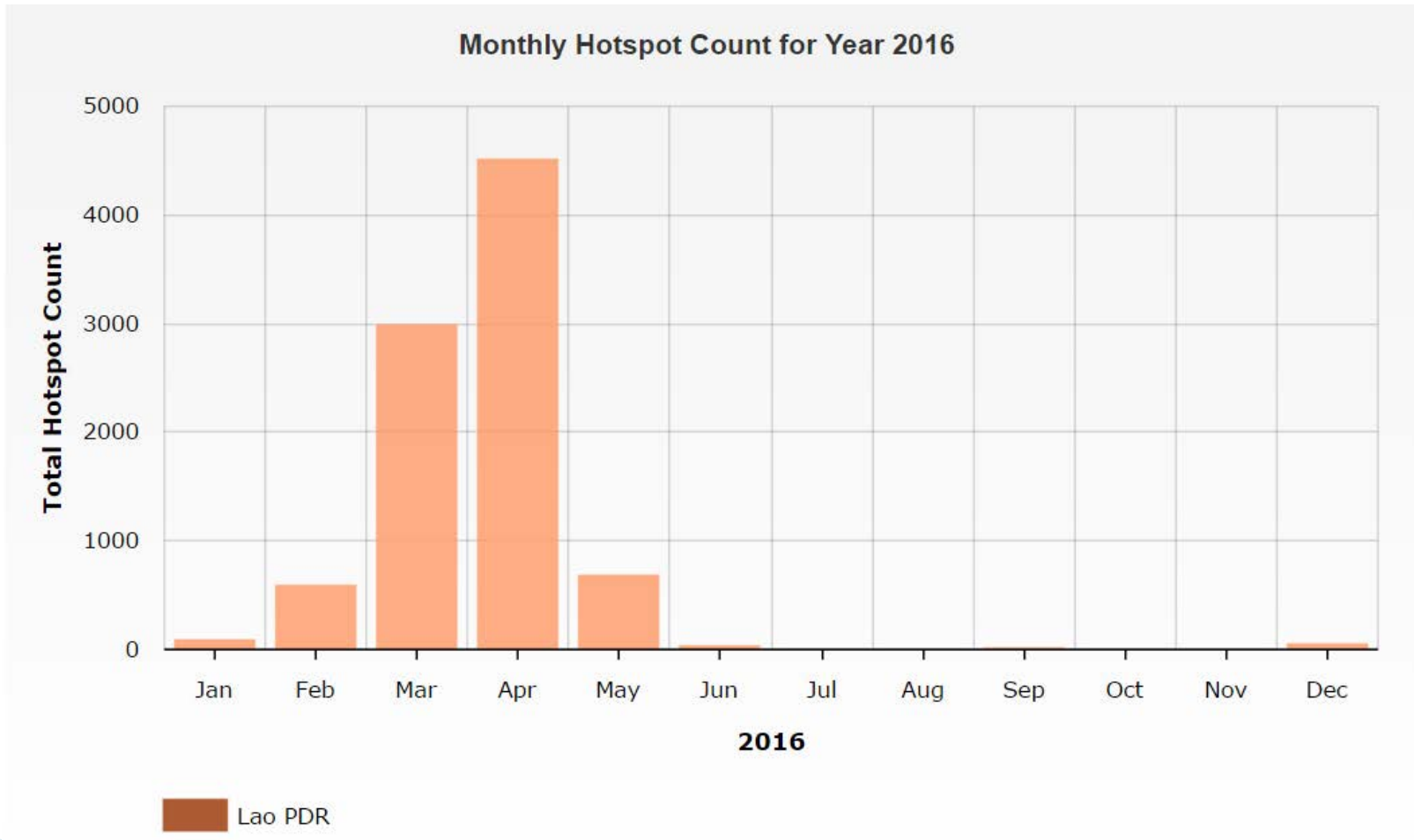
Map showing Forest Cover Losses in Bolikhamxay Province (2000 to 2013)

# Annual Hotspot Count (2012-2016)



Source: DATA from the ASEAN Specialized Meteorological Centre (ASMC)

# Hotspot Count in Laos (2016)



# Organization in Charge of Forest Fire Prevention

1. Department of Forestry Resource Management (DFRM), MAF
  - Responsible for forest fire framework and monitoring, collecting annual fire incident data since 2012;
2. TWG Mekong and TWG on Trans boundary Haze Pollution, Natural Resources and Environment Institute, MoNRE;
  - Monitoring and reporting the air quality;
3. Task Force on Peatland under the Department of Environment Quality and Promotion;
  - Task Force for the preparation of “Study on the Economic, Health and Social Impact of Haze in 2015 on the ASEAN Region” under Natural Resources and Environment Institute, MoNRE and DFRM, MAF
4. National Steering Committee on Peatland (bring all the concerned departments);
5. Department of Environment Quality and Promotion (DEQP) as the National Coordinator and Focal Point

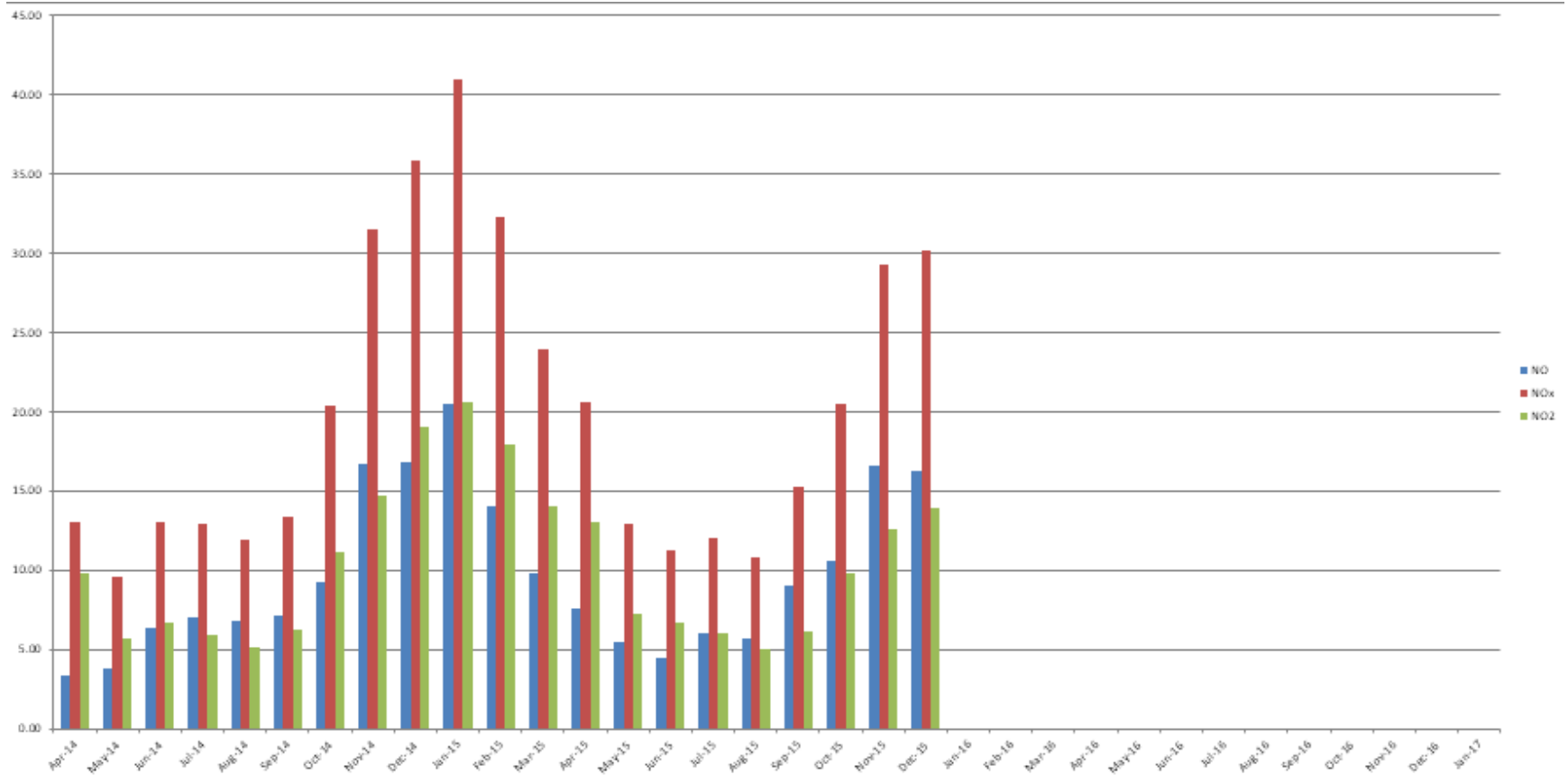
# Air Quality Monitoring in Laos

- ▶ MoNRE installed an Automated Ambient Air Quality Monitoring Stations at the Department of Meteorology & Hydrology in Vientiane on March 2014.
- ▶ Pollutants: NO, NO<sub>2</sub>, Nox, PM10
- ▶ Meteorological Parameters:
  - Wind (speed & direction)
  - Temperature
  - Pressure
  - Humidity, Precipitation
  - Rain

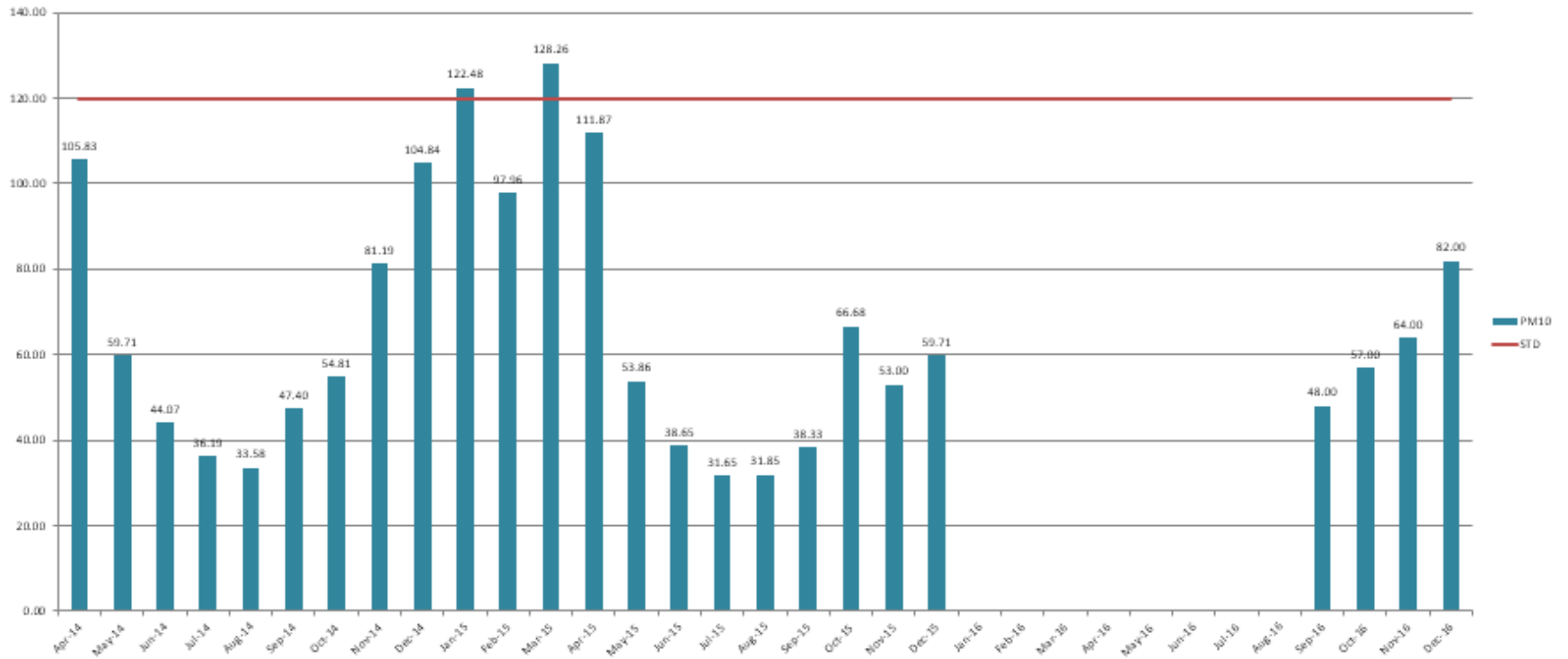
# Automated Ambient Air Quality Monitoring Station



# NO, NO<sub>2</sub>, No<sub>x</sub> Monthly Monitoring from 04/2014 to 12/2016



# PM 10 Monthly Monitoring from 04/2014 to 12/2016

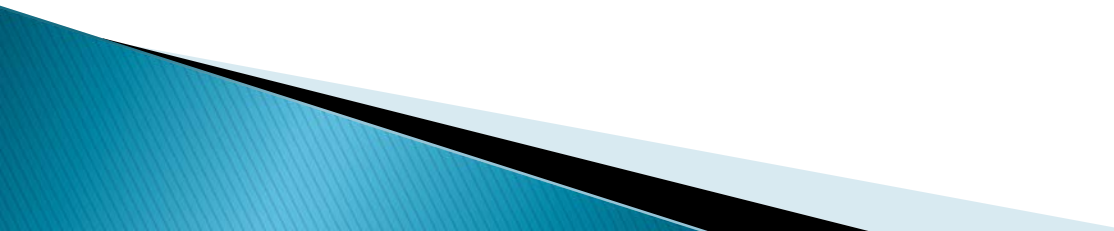




# Forest Fire Prevention and Suppression

Enforcement of Laws, regulations and national framework

- Law of Forestry, No 06/NA, Dated 24 Dec 2007;
- Forestry strategy toward 2020;
- Law on forest Fire Prevent No. 3827 in 2016;
- Environmental Protection Law, revised in 2012;
- MoNRE's vision toward 2030;
- Strategy from 2016–2025 and Five–Year Action Plans for Natural Resources Conservation and Environmental Protection;
- National Forestry Strategy for increasing of forest cover to a total of 70% of land area by 2020

- Instruction of Forest Wild Fire Prevention in dry season (MAF), No 3827/MAF, Dated 29 Dec 2016;
  - Communities agricultural and productions must be control;
  - Incase of emergency of forest fire the local authority should take responsibility;
  - Public awareness and knowledge of forest fire (e.g. meaning, causes, effects, prevention, participation in forest fire)
- 

# Natural Conservation & Environmental Protection in Laos



Environmental Protection Law (EPL)  
issued out in 1999 and revised in 2012

Legal Frameworks: (Legislation, Decrees...)

National Strategy on Environment 2006–2020

National Strategy on Natural Resources &  
Environment 2016–2025

Vision 2030

1<sup>st</sup> Five year Action  
Plan 2006–2010

2<sup>nd</sup> Five year Action  
Plan 2011–2015

3<sup>rd</sup> Five year Action  
Plan 2016–2020

# Forest Fire Prevention Activities



# Public Awareness Campaign

Public awareness about forest fires includes:

1. Understanding about forest fire: causes, effects;
2. Prevention methods;
3. Participation in the prevention of forest fire;
4. Law enforcement.



# Brochure for Public Awareness Campaign

## ເອກະສານໄຟຟ້າ



## ຄວາມຮູ້ກ່ຽວກັບ

## ໄຟຟ້າ

ກະຊວງ ຊັບພະຍາກອນທຳມະຊາດ  
ແລະ ສິ່ງແວດລ້ອມ

ກົມຄຸ້ມຄອງຊັບພະຍາກອນປ່າໄມ້



### ຄວາມຮູ້ເລື່ອງໄຟຟ້າສຳຫຼັບປະຊາຊົນ

ປ່າໄມ້ເປັນຊັບພະຍາກອນທຳມະຊາດທີ່ມີຄວາມຄ່າມະຫາສານຊຶ່ງເກີດຂຶ້ນເອງຕາມທຳມະຊາດ ປ່າໃຫຍ່ໄມ້ແກ່ເຮົາ, ໃຫ້ທີ່ຢູ່ອາໄສແກ່ສັດປ່າ, ໃຫ້ອາຫານແກ່ເຮົາ ແລະ ຕົ້ນໄມ້ບາງຊະນິດຍັງຈະສາມາດນຳມາເປັນຢາຮັກສາໄລກອີກດ້ວຍ ເປັນແຫຼ່ງກຳເນີດດິນ, ຫີນ, ແຮ່, ນ້ຳ ແລະ ຊ່ວຍຍ້ອງກັນທຳມະຊາດ.

### ພຶດຕິກຳຂອງໄຟຟ້າ

ໄຟຟ້າຄືໄຟທີ່ເກີດຂຶ້ນຈາກສາເຫດອັນໄດ້ຕາມແລ້ວດຸກດາມໄໝ້ເຊື້ອເພິກທຳມະຊາດໄປໂດຍອິດສະຫຼະ ບໍ່ມີການຄວບຄຸມ ທັງນີ້ບໍ່ວ່າໄຟຈະດຸກດາມໄໝ້ໃນປ່າທຳມະຊາດ, ໄຮ່ ຫຼື ສວນ.

ໄຟຈະໄໝ້ໄດ້ກໍຕໍ່ເມື່ອມີອົງປະກອບສຳຄັນ 3 ປະການຄື:

1. ອາກາດ: ການດຸກໄໝ້ຈະເກີດຂຶ້ນໄດ້ກໍຕໍ່ເມື່ອມີກົດອອກຊີເຈນ ຊຶ່ງອາກາດໃນປ່າມີກົດອອກຊີເຈນຢູ່ຢ່າງຫຼວງຫຼາຍ.
2. ຄວາມຮອ້ນ: ເຮັດໃຫ້ເຊື້ອໄຟແຫ້ງໄວ ເມື່ອມີອຸ່ນຫະພູມສູງຂຶ້ນຈະເປັນຕົວຊ່ວຍໃຫ້ການດຸກໄໝ້ເປັນໄປຢ່າງໄວວາ.
3. ເຊື້ອໄຟ: ຖ້າເຊື້ອໄຟມີນ້ຳໜັກເປົາ, ແຫ້ງຈັດ ແລະ ມີຈຳນວນຫຼາຍ ການດຸກໄໝ້ກໍ່ໄວ ທີ່ເຮັດໃຫ້ການຄວບຄຸມເຊັ່ນ: ກິ່ງໄມ້ແຫ້ງ, ຫຍ້າ ແລະ ອື່ນໆ.

### ສາເຫດຂອງໄຟຟ້າ

1. ໄຟປ່າເກີດຂຶ້ນເອງຕາມທຳມະຊາດ ເຊັ່ນ: ຫຼີກຕ່າ ຫຼື ການສຽງສີຂອງກົນໄມ້, ກິ່ງໄມ້ ໄຟປ່າປະເພດນີ້ມີໜ້ອຍຫຼາຍ ຫຼື ເກືອບບວກບໍ່ມີການເປັນໄດ້.
2. ໄຟປ່າທີ່ເກີດຂຶ້ນໂດຍການກະທຳຂອງມະນຸດຊຶ່ງເປັນບັນຫາໄຫຍ່ຫຼາຍໃນປັດຈຸບັນ ເພາະໄຟປ່າໃນບ້ານເຮົາມັກເກີດຂຶ້ນໂດຍການກະທຳຂອງມະນຸດ ເຊັ່ນ:
  - ເກີດຈາກການທີ່ຊາວບ້ານຈຸດພື້ນທີ່ເພື່ອເຮັດການປູກຝັງໃນໜ້າຝັງ ໂດຍບໍ່ມີການຄວບຄຸມດຸກໄໝ້ ຫຼື ໄຮ່ສວນ
  - ເກີດຈາກການຈຸດປ່າເພື່ອວ່າສັດ
  - ເກີດຈາກການຈຸດປ່າຫຼືເນື້ອດ້ວຍຄວາມໄວຄະນອງ ຫຼື ຮູ້ເທົ່າບໍ່ເຖິງການ ພວກນີ້ມັກຈຸດໄຟຫຼືເນື້ອໃນປ່າ ຫຼື ສວນປ່າອາດຈະຈິງໃຈຈຸດປ່າເພື່ອຄວາມສະໜຸກ ສະໜາມໂດຍຂາດຄວາມຮັບຜິດຊອບ ຂອງສົມບັດສ່ວນຕົວມະນຸດ
  - ເກີດຈາກຊາວບ້ານເຂົ້າໄປເກັບເຫາເຄື່ອງປ່າຂອງດົງເຊັ່ນ: ຂີ້ເສັ້ງ, ໜ້າໄມ້, ເກັບສິນ ແລະ ອື່ນໆ ທີ່ຢູ່ໃນປ່າ ຫາກບໍ່ລະມັດລະວັງໃນການຈຸດປ່າ ຫຼື ໃຊ້ໄຟຈະເປັນສາເຫດໃຫ້ເກີດໄຟປ່າໄໝ້ດຸກດາມເຂົ້າໄປຢ່າງກ້ວາງຂວາງໄດ້
  - ເກີດຈາກຕູ້ເກີນເຫງາເຂົ້າໄປໃນປ່າ ຫຼື ມັກທ່ອງທ່ຽວ ໂດຍຖິ້ມກິນຢາສຸບຕາມຂ້າງທາງ ໄຟອາດຕິດໄໝ້ ຫຍ້າແຫ້ງ ຫຼື ໄຟໄມ້ແລ້ວດຸກດາມຕໍ່ໄປໄດ້

# ບົດທີ 1: ຜົນກະທົບຂອງໄຟປ່າຕໍ່ຊີວິດ ແລະ ຊັບສິນ

## ອະທິບາຍ:

ມັນຈະງ່າຍທີ່ພວກເຮົາຈະວາດພາບຂອງໄຟໄຫມ້ປ່າຕໍ່ຊີວິດ ແລະ ຊັບສິນ. ສ່ວນຫລາຍພວກເຮົາ ກໍ່ເຄີຍໄດ້ປະສົບກັບເຫດການ ໄຟໄຫມ້ປ່າ, ພວກເຮົາເຄີຍຖືກໄຟໄຫມ້, ຖືກບາດເຈັບ ຫລື ສ່ວນທີ່ ເຫລືດກໍ່ ຂາດແຄນອາຫານ. ສິ່ງເຫລົ່ານັ້ນມັນໄດ້ ເປັນຜົນກະທົບຢ່າງ ປະຈັກຕາຢ່າງຊັດເຈນຕໍ່ຊີວິດຂອງມະນຸດ. ມັນງ່າຍທີ່ພວກເຮົາຈະເຫັນເຫດ ການດັ່ງກ່າວ ແລະ ມັນງ່າຍທີ່ພວກເຮົາຈະ ດັບມອດມັນ.



ໄຟປ່າຍັງມີຜົນກະທົບຫລາຍໆຢ່າງ ເຊິ່ງກະທົບໂດຍກົງຕໍ່ກັບຊີວິດ ແລະ ຊັບສິນຂອງຄົນເຮົາ, ແຕ່ມັນມີຄວາມອັນຕະລາຍຫລາຍກວ່າໝູ່ ເນື່ອງຈາກຜົນກະທົບດັ່ງກ່າວ ມັນໄດ້ຕາມມາຢ່າງ ຊ້າໆ ແລະ ພວກເຮົາ ບໍ່ສາມາດເຫັນມັນໄດ້ຢ່າງງ່າຍດ່າຍ, ໃນຈຳນວນຄົນຂອງພວກເຮົາບໍ່ຫລາຍປານໃດ ທີ່ມີສະຕິເຂົ້າໃຈຈຳບັນຫາດັ່ງກ່າວ. ຖ້າຫາກວ່າພວກເຮົາບໍ່ຮູ້ບັນຫາຂອງພວກເຮົາເອງ ພວກເຮົາ ຈະບໍ່ ສາມາດ ດັບມອດໄຟປ່າ ແລະ ກໍ່ບໍ່ສາມາດແກ້ໄຂບັນຫາດັ່ງກ່າວໄດ້.

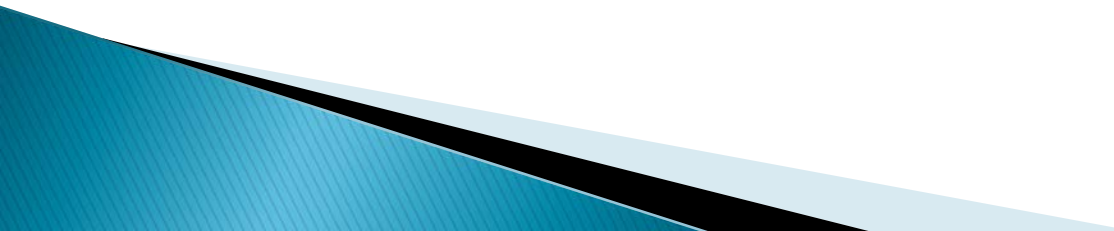
ຫລັກສູດຝຶກອົບຮົມດັ່ງກ່າວນີ້ມີຈຸດປະສົງ ເພື່ອຊ່ວຍໃຫ້ປະຊາຊົນຈິດຈຳ ແລະ ເຂົ້າໃຈຕໍ່ຜົນ ເສຍ ຫາຍອັນເນື່ອງມາຈາກໄຟປ່າ ແລະ ຊ່ວຍໃຫ້ພວກເຂົາຮູ້ວິທີປ້ອງກັນ ແລະ ດັບມອດໄຟປ່າໄດ້.

# The 12<sup>th</sup> TWG-Mekong and 6<sup>th</sup> MSC Mekong Meeting, 23–24 February 2017, Chiang Rai, Thailand





# Challenges

1. Systematic fire management system is lacking;
  2. Limitations forest fire prevention and suppression in remote areas;
  3. No advanced technology for haze monitoring and;
  4. Limited resources (e.g. skilled staff, experts, and budget) for haze pollution monitoring and control.
- 

# Thanks

