# POST-FIRE ACTION

## Indonesia's Effort on Handling Land and Forest Fire in 2015

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### Post-Fire Action Phase

What is meant by the post-fire action is an effort or activity carried out in the span from a fire has taken place, the fire was declared extinguished and during the fire are still visible (except for law enforcement and rehabilitation could last longer). The scope of Post-Fire action is as follows: a) Investigation of the causes of fire (Fire Cause Investigation); b) Counting Losses Fire-Area; c) Handling on Impact Fires; d) Law enforcement; and e) Rehabilitation

### Law Enforcement Measure

Ministry of Environment and Forestry used two approaches in the effort to enforce law, those approaches are multi Law instrument implementation approach i.e.: Administrative Law, Criminal Law, and Civil Law; and Multidoors Law Enforcement approach, that was by implementing all regulation in one case, which include the enforcement of Environment Protection and Management Act, enforcement of Forestry Act, enforcement of Estate Act, and enforcement of other criminal laws.

As one of the efforts in managing forest and land fire, Ministry of Environment and Forestry had established Special Task Force (SATGASUS) team who responsible for surveillance of land and forest fire, which included identification, clarification and verification of land and/or forest fire problems; composing and signing the Surveillance Resumes; and composing and submitting the result of surveillance work to provincial coordinator. SATGASUS is field team which involved the Environment Supervision Official (PPLH), Forest Ecosystem Management (PEH), and Forest Rangers (Polhut).


Data on burnt land/forest was derived from Landsat image from the Directorate General of Forest Planology and Environment Ministry of Environment and Forestry. Based on the data obtained, surveillance was conducted gradually. Based on the image, surveillance (Period I and Period II) was conducted toward 27 companies starting from 16 September to 11 October 2015, in which 14 companies had been penalized administratively. The 14 companies included 6 IUPHHK-HTI companies (business license for utilization of timber from plantation forest ), 6 estate companies, and 2 IUPHHK-HA companies (business license for utilization of timber in natural forest).

During Period III and Period IV (14 October-14 November 2015) there were 41 companies (25 IUPHHK and 16 estate) with an estimation of burnt area more than 1,000 ha, which would be/were being supervised. The companies were located in Riau, Jambi, South Sumatera, West Kalimantan, Central Kalimantan, and East Kalimantan.

## POLICY AND MEASURES FOR RECOVERY AND PREVENTION

Based on study of Agricultural Land Resources Office (Balai Besar Sumberdaya Lahan Pertanian) in 2011, Sumatera has 6.4 million ha peatland or 43.2% of the total Indonesian peatland, while Kalimantan has 4.7 million ha or 32.1% of the total Indonesian peatland, and Papua has 3.6 million ha or 24.8% of the total Indonesian peatland.

In its natural condition, peatland functions as carbon sink, and contribute to the reduction of atmospheric greenhouse gasses. When peatland was logged down and drainage channel was built in it, then the carbon stored in the peat would be easily oxidized and transform into CO2. In addition, drainage development on peatland would cause subsidence of peatland surface. Therefore, a careful planning is needed in converting peatland.

Extensive use of peatland had been increasing in several provinces with extensive peatland areas, such as Riau, Central Kalimantan, and West Kalimantan, along with canal development. Adinugroho, et al. (2004) suggested that the cause of peatland fire includes land conversion, vegetation burning, and activities in using natural resources, canal development in peatland and land tenur problem.

In land conversion, fire usually caused by sparks from land preparation for agricultural activity (burning), industry, road development, buildings, etc. Sparks caused fire and resulted intentional but uncontrolled vegetation burning, which cause a jump of spark, for example: the opening of industrial plantation forest and estate, and land preparation by the community.

Fire is caused by human activities during natural resources uses such as burning of bushes, which inhibit people's access to resource use, and the use of fire by illegal loggers or fish hunters to cook in the forest. Their negligence in putting off the fire could cause forest and land fire.

The canals in peatland are commonly used as timber transportation and irrigation. Canal, which is not equipped with appropriate water control gate, could cause the loss of water from peatland layers, which dried the peatland and made the land prone to fire. Then in land tenure problem, fire is often used by local people to re-claim their rights on the land or even take over open access land nearby.

Fire, once occurred in peatland, would be hard to be extinguished. Peatland fire has its own characteristics which distinct it from fire in mineral soil such as peat fire is usually ground fire, which makes it difficult to predict the movement of fire. Fire in peatland spread slowly and unaffected by the wind. It is also without sparks, which makes it hard to detect and control. Peatland fire is dominated by smoldering process which produced high emission and haze disaster and it could stands within a long period of time with spread acceleration about 0.025 cm/hr. Based on those conditons, it needs more effort in exterminating the fire, sometimes the Manggala Agni using peatland injection to make the land soaked with water (become mushy).

Fire on peatland could impacted the peatland ecosystem, such as the decrease of physical quality of peatland ecosystem, the changes of chemical characteristics of peatland, disturbance of decomposition process of peatland, loss of natural vegetation seeds, and the destruction of peatland hydrological cycle. Peatland is vulnerable ecosystem, which would need more effort to recover the ecosystem to its previous condition before the disturbance or destruction, one it is disturbed or destructed.

Land and forest fire in 2015, until 30 September 2105, had covered 1.7 million ha (Ditjen Planologi dan Tata Lingkungan, KemenLHK). In relation to that, the President of Republic of Indonesia had provide directives related to measures that should be taken in managing fire, particularly in peatland, i.e.: a) One Map Policy which aimed to integrated data of peatland use permit distribution and provide reference for peatland governance, b) Moratorium of peatland use permit, c) Conduct review/evaluation toward old permits, and d) Conduct peatland recovery effort through hydrology restoration and rehabilitation.

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