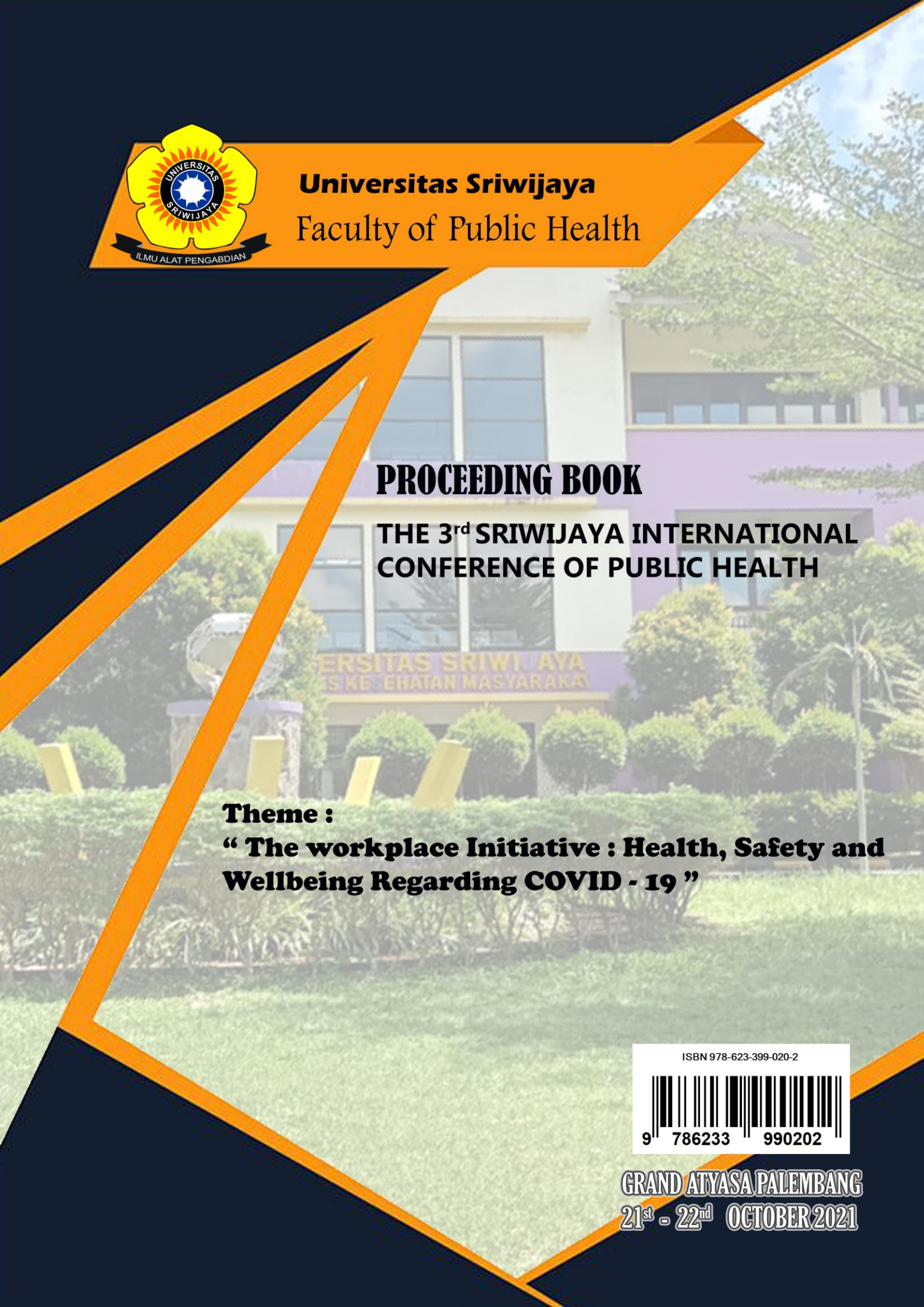

Universitas Sriwijaya

Faculty of Public Health

PROCEEDING BOOK

THE 3rd SRIWIJAYA INTERNATIONAL CONFERENCE OF PUBLIC HEALTH

Theme :

" The workplace Initiative : Health, Safety and Wellbeing Regarding COVID - 19 "

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GRAND ATYASA PALEMBANG

21st - 22nd OCTOBER 2021

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The Work Place Initiative: Health, Safety and Wellbeing Regarding COVID-19

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PROCEEDING
THE 3rd SRIWIJAYA INTERNATIONAL CONFERENCE ON PUBLIC HEALTH

The Work Place Initiative: Health, Safety and Wellbeing Regarding COVID-19

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PREFACE

On behalf of the organizing committee, I am delighted to welcome you to the 3nd Sriwijaya International Conference on public Health (SICPH 2021) during 21th october 2021 at Palembang South Sumatera, Indonesia. The SICPH 2021 is international conference organized by Faculty of Public Health, Sriwijaya University (UNSRI). I would like to extend my warmest welcome to all the participant of The SICPH 2021 under the theme ***"The Impact of Climate Change on Infectious Disease Transmission".***

The SICPH 2021 consists of keynote sessions from well known expert speakers in the field of public health, and academic paper sessions (oral presentations) who are coming from several region. This conference seeks to bring together academics, public health professionals, researchers, scientists, students and health stakeholders from a wide range of disciplines to present their latest research experience and further development in all areas of public health. We hoped that this conference will be usefull platform for researchers to present their finding in the areas on multidisciplinary realted to public health and health system issues.

This conference will provide opportunities to exchange ideas, knowledge, and development of the latest research among the participants. We will publish the paper as output from the SICPH 2021 in proceeding book with ISBN and selected paper will be published in Jurnal ilmu kesehatan masyarakat- SINTA 3 (a nationally-accredited journal). The SICPH 2021 is being attended by about 50 participants. I hope you enjoy the conference.

With regard to considerable conference agenda, we greatly appreciate any support and sponshorship derived from any govermental as well as private institutions for the success of the conference. Great appreciation is also handed to organizing committe of the conference for any voluntarily effort that bring to the succes of the conference.

The conference committee expresses its gratitude towards all the keynote speakers, authors, reviewers, and participanst for the great contribution to enssure the succes of this event. Finnally, I sincerely thank all the members of the organizing committee who have worked hard to prepare this conference.

Palembang, October 2021

Chair,

Anita Camelia, SKM., MKKK.

PREFACE

First of all, let us thank God, the Almighty, who has given His grace and guidance so that the 3rd Sriwijaya International Conference of Public Health (SICPH) with the theme of The Workplace Initiative: Health, Safety and Wellbeing Regarding Covid:19 can be held successfully. I welcome all of you to this seminar which has received great attention not only from university, but also other communities to submit papers to be presented in this seminar. I express my highest gratitude and appreciation the presenters.

The conference is divided in two session, the first session is speeches and the second session is round table discussion. In the first session, the invited keynote speakers were Prof. Dr. Tan Malaka, MOH, DrPH, SpOk, HIU (A Professor from Medical Faculty Universitas Sriwijaya), Prof. Dr. Retneswari Masilamani (University Tunku Abdul Rahman, Malaysia), Prof.Dr.Joselito L. Gapaz MD, M.PH(University of the Philippines) and Prof. Dr Tjandra Yoga Aditama, MHA,DTM&H, DTCE,SpP(C).FIRS (Professor from Griffith University, Australia)

Of course, this conference activity would not have succeeded without the support of all parties involved, as well as the presence of all participants in all regions in Indonesia and internationally. I especially thank to all the organizing committees for their hard work, perseverance, and patience in preparing and organizing this conference so that it can go well, smoothly and successfully.

Finally, through this conference let us extend the network and cooperation among all stakeholders of the public health sector, especially in Indonesia and in the world in general, to build a better public health world in Indonesia

Thank you for participating in this conference.

Dean of Public Health Faculty,

Universitas Sriwijaya

Dr. Misnaniarti, S.K.M, M.K.M

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NATURAL FACTORS AND WETLAND FIRES IN THE DISTRICT OF OGAN ILIR, SOUTH SUMATERA PROVINCE IN 2019

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ABSTRACT

Some of Wetland habitat have changed into residence for people and agriculture land or farm and fish ponds. The negative impact of the switch function of wetland relates to the land fire. Ogan Ilir is one of the district in South Sumatera that land fire often happens. One of the factors is nature, it is a long drought. The purpose of this research is to analyze the natural factors that can cause the wetland fire in Ogan Ilir district, South Sumatera. Type of the research is analitic descriptive research. The data obtained is primary data that is observation using checklist paper, deeply interview and land sample analysis which are observed in Laboratory dan secondary data namely the land fire that happened in Ogan Ilir district in 2019 which was taken from The Region Disaster Management Authority Ogan Ilir district. The land fire that happened in Ogan Ilir district from January until September in 2019 could reach the area of 738 acres with the characteristic of peat fired was 226.85 acres dan mineral land fired was 501,35 acres.10 % of land fire in Ogan Ilir district was caused by natural factors and 90% was caused by human.

Keywords: *Fire, Wetland, Natural factors*

ABSTRAK

Beberapa habitat Lahan Basah telah berubah menjadi tempat tinggal manusia dan lahan pertanian atau bahkan peternakan serta kolam ikan. Dampak negatif dari alih fungsi ini adalah lahan basah yang berkaitan dengan kebakaran lahan. Ogan Ilir merupakan salah satu kabupaten di Sumatera Selatan yang sering terjadinya kebakaran lahan. Salah satu faktornya adalah alam, khususnya pada kemarau panjang. Tujuan dari penelitian ini adalah untuk menganalisis faktor-faktor alam yang dapat menyebabkan kebakaran lahan basah di Kabupaten Ogan Ilir, Sumatera Selatan. Jenis penelitian ini adalah penelitian deskriptif analitik. Data yang diperoleh adalah data primer yaitu observasi menggunakan kertas checklist, wawancara mendalam atau mendasar dan analisis sampel tanah yang diobservasi di Laboratorium dan data sekunder yaitu kebakaran lahan yang terjadi di Kabupaten Ogan Ilir tahun 2019 yang diambil dari Badan Penanggulangan Bencana Daerah Ogan Ilir daerah. Kebakaran lahan yang terjadi di Kabupaten Ogan Ilir dari bulan Januari sampai September tahun 2019 dapat mencapai luas 738 hektar dengan karakteristik kebakaran lahan gambut 226,85 hektar dan kebakaran lahan mineral 501,35 hektar. 10 % kebakaran lahan di Kabupaten Ogan Ilir disebabkan oleh faktor alam dan 90% disebabkan oleh faktor manusia.

Kata kunci: Kebakaran, Lahan Basah, Faktor Alam

Introduction

Wetland is mainland which swamps or has high water ingridients permanently and seasonally. The ecosystem of wetland covers swamps, lakes, rivers, mangrove forests, peat forests flood forests, flood runoff, coast, farms and coral reefs. Wetland has important roles to humans lives because from its ecosystem it supplies clean water, biodiversity, food, various minerals, flood control, water reserves and climate change mitigation. Some of habitats of wetland have been changed into residence and agricultureor farms and fishponds.[1] The switch function of wetland happens because the increase of population growth so that the need of having land keep increasing. The negative impact of switch function of wetland realtes to the land fire. Land fire is one of disturbances that often happens. The forest and land fires is the incidents of the fire of land surface in which the fire is in the top position (litter, trees, bushes, etc) and the fire spreads slowly below the surface by burning the peat organics. According to theory of Brown and Davis that the process of fire is because there is triangle of fire. Triangle of fire is a simple form to describe the process of fire and the triangle consists of three sides, fuels, oxygen, and temperature that produce heat.

Based on the world histories, the greatest forest and land fires happened in 1997 which covered 25 million acres in the whole world.[2] In 2015 in Indonesia big forest and land fires happened. According to National Disaster Management Authority the forest and land fires that happened in 2015 was 2,089,911 acres or it was 32 times as big as the size of DKI Jakarta. This made our neighbore contries get the impact of smoke produced by the forest and land fire. South Sumatera is the second province that contributes smoke caused by the fire that covered 144,410 acres. Ogan Ilir is one on the districts in South Sumatera where forest and land often happen. One of the factors is natural factors that is a long drought, Based on the Forestry department of SouthSumatera, the forest and land fires that have happened in distrct of Ogan Ilir were 17.728 acres in 2014, 12.297 acres in 2015, 2.614 acres in 2017 and 3.925 acres in 2018. One of the factors that casues the forest and land fire is natural factor that the accumulation of litter, heat, thunder rain, and the friction of stones when the dry season comes. On the other hand, other factors are climate condition, woods vegetation, peat vegetation and the supply of water.[3] Extreme Climate condition like long drought may cause the vulnerability of forest and land fires if the land of peat that is flammable and the woods and grass vegetations.[4] Natural factors that cause the forest and land fires in 2015 were the climate anomaly of El Nino fenomenon in Pacific oceon that made Indonesia experience long drought. This shows that the cause of forest and land fires that happened in

Indonesia in 2015 was the same as the forest and land fires in 1997. El Nino is the fenomenon of heat of sea surface in Pacific Ocean in middle part to the East. In Indonesia the side effect of El Nino is long drought and less rain.[5]

Forest and land fires often happen in dry season specially in August, September, October in which the tree months the transition time happens.[6] On the othe hand the lackness of informations of the people about the characterictics of the land that causes forest and land fires in South Sumatera especially in district of Ogan Ilir and so far there are not any researches yet concerning natural factors causing wetland fire in the district of Ogan Ilir, South Sumatera. In that case the research needs to be carried on to analyze natural factors that can cause wetland fire in the district of Ogan Ilir

Method

The design of the research used is qualitative research which has character of descriptive analysis. Descriptive analisis is a method which is useful to describe to the objects that have been researched by data and samples gained as they were without doinganalysis and making conclusion in general. The steps done on the research were deeply interview. Observation and analysis of land samples that was done at the laboratory of PT Sampoerna Agro. Data obtained were presented in narration. To point the location of samples gained used routine notes of land fire incidents of The Region Disaster Management Authority Ogan Ilir district. Then the data of land fire obtained was proceded and presented in pictures using application of Geographic Information System (GIS). The source of information on the research was chosen based on purposive sampling that consists of the operator of Pusdal OPS PB of The Region Disaster Management Authority Ogan Ilir district, the special task force of the Region Disaster Management Authority Ogan Ilir district, Head department of Agriculture of the district of Ogan Ilir, dan Team of region peat Restoration of Anggota Tim Restorasi Gambut Sumatera Selatan province.

Data Validity used on the research was triangulation method. Data triangulation is to compare dan re-check the degree of trust of information result that have been obtained by using different time and tools in the qualitative research.

Results

Incidents of Land Fire

Based on the results of document study of routine report of The Region Disaster Management Authority Ogan Ilir district the data of size of surface area of land fire in the district of Ogan Ilir from

January to 23 September 2019 was 738 acres.

Table 1. Data of Land Fire in Distrct of Ogan Ilir 2019

Subdistricts	Urban Villages / Villages	Size of land fire (acres)	Number of locations of fire
Pemulutan Barat	Pulau Negara	17	8
	Arisan Jaya	17	7
	Teluk Kecapi	14	1
	Talang Pangeran Ulu	3	3
	Sri Banding	3	2
	Ulak Kembahang	1,5	1
Pemulutan	Muara Baru	44,5	10
	Ibul besar I	3	3
	Simpang Pelabuhan Dalam	2,5	2
	Teluk Kecapi	4	2
	Pegayut	1,3	2
	Suak Batuk	3	1
	Ibul Besar II	3	1
	Muara Dua	3,75	3
	Sukarame	8,5	2
	Babatan Saudagar	2	1
Indralaya	Tanjung Seteko	30,85	7
	Indralaya Mulya	4,5	5
	Sejaro Sakti	6	2
Indralaya Selatan	Meranjat III	9	4
	Tanjung Dayang Selatan	11,5	4
Tanjung Batu	Beti	0,1	1
	Burai	21,5	5
	Sri Banding	5	1
Rantau Alai	Sukananti Lama	4	2
	Mekar Sari	12,5	2
Muara Karang	Muara Kuang	0,2	1
	Tanabang Ilir	1	1
	Naga Sari	2	1
	Karang Anyer	5	1
Indralaya Utara	Timbangan	18,8	6
	Tanjung Batu	4,35	5
	Palem Raya	24,5	9
	Lorok	27,5	9
	Pulau Semambu	23,5	10
	Sungai Rambutan	40,6	18
	Suak Batok	27,05	12
	Permata Baru	8	5
	Bakung	98	22

The three highest regions that experienced land fires in the district of Ogan Ilir were subdistrict of Pemulutan Barat with size of land fired 55.5 acres which consisted of villages of Pulau Negara, Arisan Jaya, Teluk Kecapi, Talang Pangeran Ulu, Sri Banding, dan Ulak Kembahang I. subdistrict of Pemulutan with the size of land fired 75.55 acres which consisted of villages of Muara Baru, Ibul Besar

I, Simpang Pelabuhan Dalam, Teluk Kecapi, Pegayut, Suak Batok, Ibul Besar II, Muara Dua, Sukarame, dan Babatan Saudagar. Subdistrict of North Indralaya with the size of land fired 102.35 acres which consisted of villages of Timbangan, Tanjung Baru, Palem Raya, Lorok, Pulau Semambu, Sungai Rambutan, Suak Batok, Permata Baru, dan Bakung. From the data above it can be concluded that subdistrict of North Indralaya was the the biggest subdistrict that experienced land fire in 2019 with the size of land fired 102,35 acres especially at Bakung village in which the results showed that the size of fire land area was 98 acres with the characteristic that peat land got the most land fire. In that case some of the region of the three subdistricts have become the point of locations on this research.

Land Characteristics

Some of regions in the district of Ogan ilir which have become the lokations of research were villages of Bakung, Simpang Pelabuhan Dalam, Ibul Besar III, Muara Baru, Sungai Rambutan Village, Pulau Semambu, Talang Pangeran Ilir, Arisan Jaya, and Pulau Negara. Based on the results of observation of land characteristic only viilages of Bakung and Pulau Negara that have the characteristic of peat land, the other is Rawa Lebak. For type of land of the majority region in the district of Ogan Ilir, after observation, have the type of mineral land namely alluvial type. But when the observation was on progress at Village of Bakung there is one location which its peat land is joined with land of alluvial mineral and this is caused by the digging around the land

> *"Almost most of the whole Indralaya has the type of land like that. So there no words of peat. What really exists is raw peat in the swamp. That makes people missundestand that swamp means peat while it is not correct because there is a rule. There are regions where the depth of peat at kuang about 50-100 CM. They are at Bakung of Pulau Kabal, and around Sriwijaya botanical garden. There is a place where its depth of peat meets the requirement of ministry of environment but only a little especially for Board of Peat Restoration (BRG) or TRGD in the province that can not meet the category of hydrology of peat because it is only a little nearby but others are thin swamps*

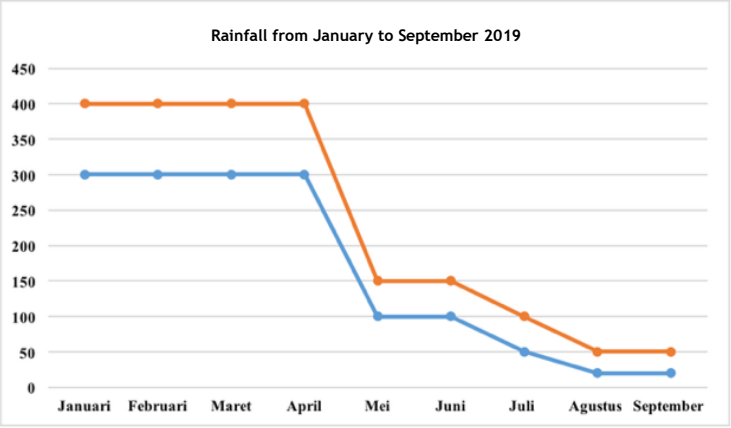
Factors of Rainfall

When the dry season comes usually the rainfall will be little too. Based on the documents study, the data of rainfall in the district of Ogan Ilir then the district of Ogan Ilir is the region that has wet

tropical climate (type B). The dry season in the district often happens about in May to October while the rainy season happens about in November to April. The average rainfall per year in the district of Ogan Ilir is 1,096 mm per year and the average rain is about 66 days per year.

"...Low rainfall of course influences the land fire. If the rainfall is low then the land will be dry. When rain comes only once a week then the percentageof of land fire will decrease. Rain can prevent 4 to 5 flammable spots because if the land is wet it will be hard to get land fire.*".*

Based on the data of Meteological, Climatological and Geophysical Agency class I Palembang the data of rainfall from January to September are as follows:



Picture 2. Rainfall in the district of Ogan Ilir 2019

Description: 0 – 100 mm: low; 101 – 300 mm: average; 301 – 500 mm: High; > 500 mm: Very High.

Factors of Soil Content

The test of content of C-Organik was carried out on this research because when the carbon is released to the athmosphere it has the impact of the increase of concentration of *Green House Gas* in athmosphere that this will increase the global warming.

"*It depends on the type of the land in Ogan Ilir. The land here is mineral land so that it is not easy to burn. It is different from the peat land that is very easy to burn because it has litter of*

platations. Mineral land when it is burned it burns only the surface that makses it easy to kill out. But when the peat land get burnt it is hard to kill out. In Ogan Ilir there is a classification of peat land because the depth is only 50 cm and North Indralaya there is a region of peat land while at the edge of the road the type of the land is mineral land so when it is out of fuel then the fire will stop".

In this research the samples of land obtained will be tested in the laboratory to see how much C-Organic in the land. This is because C-Organic or carbon is the biggest source emission when land fire happens. From 15 locations that have become the spoints of research only four of them were taken the sample of soil because composite samples become one. This is caused the type of land of many sources have the same land characteristic, vegetation and topography.

Tablel 2. The result of test of C-Organic Content

No.	Samples	C-Organic Content (%)
1.	Point II (Bakung Village)	1,53
2.	Point III (Bakung Village)	43,76
3.	Point VII (Ibul Besar III Village)	4,10
4.	Point XIV (Pulau Negara Village)	18,07
Metode Tes Sampel		Walkey & Black

Factors of Vegetation

Based on the results of observation the type of vegetation in fifteen sample locations the results obtained are as follows.

Table 3. The Results of Vegetation Observation

Points of Observation	Vegetation
Point 1 Bakung	Purun dan Gelam
Point 2 Bakung	Purun dan Gelam
Point 3 Bakung	Palm
Point 4 Sungai Rambutan	Shrubs
Point 5 Simpang Pelabuhan Dalam not burnt	Shrubs
Point 6 Simpang Pelabuhan Dalam burnt	Gelam and shrubs
Point 7 Ibul Besar III	Shrubs
Point 8 Muara Baru	Palm
Point 9 Sungai Rambutan	Shrubs
Point 10 Sungai Rambutan	Shrubs
Point 11 Pulau Semambu	Shrubs and Gelam
Point 12 Talang Pangeran Ilir	Shrubs
Point 13 Arisan Jaya	Shrubs
Point 14 Pulau Negara	Shrubs
Point 15 Pulau Negara	Shrubs and Gelam

"*swamps in Ogan Ilir are very flammable, they are shrubs vegetation, weeds, kurun, gelam, seduduk and gelam. They cannot cause fire by themselves, they need sparks to get burnt"*

Factors of Water Supply

Based on the results of observation in fifteen sample location the results obtained are as follows.

Tabel 4. The Result of Observation of Water Supply

Points of Observation	Water Suplly
Point 1 Bakung	Dry
Point 2 Bakung	Dry
Point 3 Bakung	Dry
Point 4 Sungai Rambutan	Dry
Point 5 Simpang Pelabuhan Dalam not burnt	Dry
Point 6 Simpang Pelabuhan Dalam burnt	Dry
Point 7 Ibul Besar III	Dry
Point 8 Muara Baru	Dry
Point 9 Sungai Rambutan	Dry
Point 10 Sungai Rambutan	Dry
Point 11 Pulau Semambu	Dry
Point 12 Talang Pangeran Ilir	Dry
Point 13 Arisan Jaya	Dry
Point 14 Pulau Negara	Dry
Point 15 Pulau Negara	Dry

"...In the dry season, of course, the water will decrease. As for the water supply, it depends on the terrain. If there is a pond, the water is a lot, the pond is like a pond. but if the pond is small, it means that the number is also decreasing and it also depends on the quality of the ditches around the swamps, if the ditches are small, the water supply will automatically dry up, but if it's deep it's not. When the grass is dry, it burns quickly, but if there is water in it, it will not burn."

Factors of Wind Direction

Wind direction in this research was analyzed as factors that could make the area of fire spread because the wind direction could bring the hotspot to the undefined area

"When the land fire happens wind influences the fire jump. If the wind blows hard then the fire will spread widely because wind can make the fire jump to undefined area".

Discussion

Natural Factors that Causes Land Fire

The land fire that happened in the district of Ogan Ilir in 2019 made 738 acres burnt. The number of land fire that happens many times in the district of Ogan Ilir of course makes the government of Ogan Ilir do some prevention and control of land fire. The efforts that have been done by the government of Ogan Ilir are as follows:

1. To form the Society of Fire Care (Masyarakat Peduli Api/MPA). Society of Fire Care is the people who live near the place which land fire often happens. The MPA was pointed willingly by The Region Disaster Management Authority. The main duty of MPA is to doing patrol in the area of land fire near the place where they live especially in the months when land fire often happens or in in dry season. When there is hotspot in the village where they are in charge MPA will soon report to The Region Disaster Management Authority then The Special Task Force (SATGAS) will directly go to the scene and kill the fire.
2. To install notices and warning boards of fire
3. To give informations to the society concerning prohibition of firing land with the authorities. Whie giving informations the authorities will tell the punishment to those who fire the land so that the society will be afraid of doing it.
4. To extinguish the fire together. Although having done some efforts of supervision and prevention but land fire may still happen in the district of Ogan Ilir. The people who get invlolved in extinguishing the fire are The Region Disaster Management Authority and the society nearby. If the land fire happens then extinguishing will be soon done to preven its spread

Based on the document study, interview and observation the result taken was that there are some types of land in Ogan Ilir, they are mineral alluvial, mineral utisol, and peat. Mineral land is a group of land that has organic content is less than 20% or has layer of organic material with the thickness of less than 30 cm. This mineral land was formed from weathering and ruin of stones and river alluvial. It is different from the peat land which was formed from the result of weathering of organic materials such as leaves, wood twigs, and shrubs in the condition of saturated with water and shrubs in the condition of saturated with water in very long time (thousand years) so that the organic materials in peat land is very high. Mineral land obtained from the result of observation shows the type of mineral alluvial and utisol

land. But there is only one type of utisol land in the location of observation. Mineral alluvial land is the land that was formed from the result of mud alluvial of river and is in the lowland. This kind of land rally suits to agriculture because it is very fertile while utisol land is the land which is defined as infertile land.

This was because the washing and weathering that happened intensively made utisol land have low nutrient, high acidity and low organic materials. From the observation land characteristic shows that there are types of peat swamp, peat land and swamp. These three kinds of land have differences. Peat swamp is the land that has the thickness of peat swamp less than 50 cm while peat land is more 50 cm. Swamp is the land swamp that the puddles happen because the overflowing of river or rainfall in the are of basin bottom. From the documents study of routine report of The Region Disaster Management Authority the district of Ogan Ilir shows that the land fire that often happens in the district of Ogan Ilir, from Januarary to September were Peat land with the percentage of 80% and swamp land 20%.

From the documents study and interview above, the factors of rainfall were one of the trigger of land fire in the district of Ogan Ilir because when month of May comes to September the district of Ogan Ilir will get low rainfall with the frequency of 0 – 100 mm so that this will support the data of land fire that happens in August and September in which at tose months land fire increases. During July to August the probality of land fire increases every year around July to October.[3] Besides, based on the supervision of NOAA satellite, June to October are the months when land fire can happen more often.[7]

To handle the low rainfall, The Region Disaster Management Authority South Sumatera Province has daone one of the efforts to prevent the land fire spread out by doing Weather Modification Technology. This technology is making artificial rain so that it will make the forest and land wet. The activities of Weather Modification Technology have been done in the districts of Ogan Komering Ilir, Ogan Ilir, Musi Banyuasin, Banyuasin dan Muara Enim. The efforts of making artificial rain is done by seeding salt or Natrium Chlorida (NaCl) in clouds that tend to rain and it has been done since 30 August 2019.

According to BPPN (1982), the category of C-Oganic contents <1% is very low, 1-2% is low, 2-3% is average, >3% is high. From the analysis of C-Organik content on the land above it can be concluded that the content of C-Organik of land in point II (Bakung Village) is low, point III (Bakung Village) is high, point VII (Ibul Besar III Village), dan point XIV (Pulau Negara Village) are high. The content of C-organik on the laboratory test shows that the content C-Organik in the location of observation point III (Bakung Village) that has hogher peat land characteristic than the content of C-

organik in the other observation locations.

From the result of content of C-Organic that has been done, peat land has much more C-Organic than alluvial mineral land. The more fire intensity that happens; high fire temperature, and the more C-organic burnt then the faster decrease of the number of C-organic in the soil.[8] So the content of C-organic on the land fired will be lower than the land unfired. This shows that the fire may decrease the value of C organic in the soil.[9] the Carbon missing in the land surface is caused the existence of carbon evaporation and the conversion of organic material tobe ash so that the contents of carbon in the soil will decrease after fire.[10] After the land was burnt, C-organic that decreases may increase again when the land is back to normal. C-organic that decreases because of land fire can increase in 8 months. This is caused by the weathering of land vegetation.[11]

Vegetation is one of the factors that can cause land fire spread. Like peat land that has the composition of plantation litter pile that has been wethered. Then when land fire happens it will be more difficult to extinguish the fire because the fire also happens below the surface. This is different from the mineral land that is easier to extinguish the fire because the fire only happen on the surface. Fire is a fenomenon of natural physic that is produced from the rapid combination of oxygen and the temperature of fuel which becomes into heat, light and light up.[12] From the interview the information obtained that vegetation factors can cause fire itself but it must be together with the fire source first, like the lackness of society awareness in littering the ciggarettte butt and opening new land. This causes vegetation burn and spread so that land and forest fires happens widely. Besides the result of interview shows that 90% the land fire is caused by humans and natural factors only 10%.

Most of the people said that one of the natural factors that causes land and forest fires was the accumulation of pile trash of leaves, heat, thunder and friction of the stones when the dry season comes. Considering the people opinions it can be notified that the society knowledge on the factor of fire is very low. The accumulation of pile trash of leaves, heat and the friction of the stones are the factors that can influence the fire behavior but they do not cause the fire.[13] This is also supported by the theory of triangle fire which tells that if fire is formed it needs chemical reaction involving oxygen, fuel, sparks with high heat. In the nature oxygen and fuel like woods and peat are much available but the source of sparks is hard to show up naturally. In this case the human factors are very important. The dry water supply in the land is beacause of low rainfall. According to Meteorological, Climatological and Geophysical Agency class I Palembang, during Januar to July 2019 the water supply in the district of Ogan Ilir shows sufficient catogary with the frequency of 60-100%. While in August and September the

water supply in the district of Ogan Ilir shows the category unsufficient with the frequency of 0-40%. So during these two months land fire also increases in the district of Ogan Ilir based on the data of The Region Disaster Management Authority of the district of Ogan Ilir. Not only low rainfall but also channel building cause the low water supply. The results of observation show the locations that have channel seperators are Villages of Bakung, Muara Baru and Desa Arisan Jaya, while the other villages that become the locations of observation do not have channel seperators. The channel seperators in these three villages show the dry water supply. The existence of the locations are far from the river flows. The dry lands that cause fire and low water supply makes The Region Disaster Management Authority find it hard to extinguish the fire. The water supply needed by the people while extinguishing fire really influnces the susceptible fire disaster.[7] Besides, building channel seperators in peat land will make the conditions of hidrology of peat land change and give impact to the condition of hidrology in peat land. And the height of water in downstream of the channel seperators will be lower than upstream.[14]

Accoding to Meteorological, climatological and Geophysical Agency class I Palembang, wind direction in Ogan Ilir tends to the East with the average speed of 1-11 knots. The East of the district of Ogan Ilir is the border of the distrct of Ogan Komering Ilir dan Ogan Komering Ulu Timur. The district of Ogan Komering Ilir (OKI) is the region where land fires happen most in 2019. Wind is one of the important factors of weather factors that influences the forest firesand. Wind can cause forest fire in some ways. Wind can help the driness of fuels as water carrier that has been evaporated from the fuels. Wind also pushes and develops the fire by supplying wind constantly and improvement through the slope of fire lighthen that keeps spreading to the part that may not be burnt.[15] the blow of wind will make the possibility of fire light bigger than its source (matches, torch, lighting, etc). Once the fire lights then the burning will develop together with the wind blows. Besides wind determines the direction of fire and has positive correlation with the speed of fire, but the size of the fire depends on the water content of fuels.[16]

Conclusion

The result of research shows that the types of land that fire often happens is the district of Ogan Ilir is alluvial mineral land, utisol mineral land, and peat land. While the rainfall when the extreme fire is happening tends to be low with the frequency of an 0-100 mm and the lowest happens in August and September with the frequency of 0-20 mm. The result of C-Organic test on the fired land in the district of Ogan Ilir shows that C-Organic on peat land is more than C-organic on mineral land. In other case,

the factor of vegetation in land fire is not the main factorof land fire but only the factor that influences the behavior of fire. But the factor of dry water supply in the land influences land fire then it is known that the direction of wind in the didtrict of Ogan Ilir tends to the East

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Conflict of Interest

The authors declare that they have no conflict of interest

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