Ann PUBLISHER
Journal of Law Sciences (Legisci)
e-ISSN : 3030-9549
p-ISSN : xxxx-xxxx

The Power of Scientific Evidence in the Evidence System for Forest and Land Cases

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Abstract. The development of evidence in cases of land and forest fires is regulated in Article 96 of Law Number 32 of 2009 concerning Environmental Protection and Management. In regulating the extent of evidence in environmental cases, the Supreme Court through Decree of the Chief Justice No.36/KMA/SK/II/2013 concerning the Implementation of Guidelines for Handling Environmental Cases. The research in this study is normative juridical legal research or library research. Meanwhile, the literature review uses various secondary data such as primary legal materials. The results of the study show that regulations on the use of scientific evidence (scientific evidence) as evidence in land and forest fire cases are contained in Laws, Ministerial Regulations and Supreme Court Decisions regarding the use of scientific evidence (scientific evidence) as evidence in land fire cases. The obstacle in using scientific evidence (scientific evidence) as evidence in land and forest fire incidents is that the causal relationship element is very difficult to prove so it requires scientific evidence.

Keyword: Scientific Evidence, Evidence, Land and Forest Fires

INTRODUCTION

The environment is an absolute part that cannot be separated from human life. Environmental damage, especially in Indonesia, is getting worse day by day. This damage is generally caused by human activities that are not friendly to the environment such as forest destruction and forest conversion, mining, air pollution, water, soil, and so on. Therefore, it is necessary to have a law that regulates the community so as not to damage the environment.

Environmental problems are getting bigger, widespread, and serious. It's like a snowball rolling, getting bigger and bigger. The problem is not local or translocal, but regional, national, transnational, and global. The impacts that occur on the environment are not only related to one or two aspects, but the hooks are related according to the nature of the environment which has a multi-link relationship that affects each other subsystem. If one aspect of the environment is affected by problems, then various other aspects will experience impacts or consequences as well.

On October 3, 2009, the government issued Law Number 32 of 2009 concerning Environmental Protection and Management (UUPPLH). This law is normatively and politically a product of the initiative of the House of Representatives of the Republic of Indonesia. However, empirically the role of the executive, especially the Ministry of Environment is very instrumental in preparing this RUUPPLH. Initially, the bill will be submitted by the executive, but it is considered that if through the executive it will go through a longer discussion among fellow executive agencies, while the working period of the DPR will end, then officials of the Ministry of Environment carry out an intense lobbying process with the DPR, especially Commission VII of the DPR willing to make the RUUPPLH as an initiative right of the House of Representatives of the Republic of Indonesia.

According to George Pring and Catherine Pring that science, economics, and technology continue to develop ahead of the law itself. The development of other sciences must be followed by the development of law as well. This must be a concern in order to provide legal space focused on regulation of a problem that will arise later. Therefore, following the development of environmental law without following an understanding of science is not enough for a law enforcer himself. This does not only apply to the ranks of investigators, but the role of judges in court. Judges must have good knowledge in solving environmental cases related to scientific evidence. Scientific evidence in terms of proving environmental cases where often in the judge's judgment found no or lack of evidence that corroborates the judge's belief. In addition, there are often differences in expert testimony in providing knowledge at the trial. This certainly has implications for the judge's decision which is very easily influenced by other variables if the judge's knowledge of scientific evidence can be said to be very limited. Therefore, judges are required to remain objective on the facts revealed at trial.

Environmental law enforcement has special characteristics, namely on matters related to *scientific*. The issue of environmental law enforcement today no longer talks about basic things of a conventional nature. Such as what is the motive and modus operandi by the perpetrators of environmental destruction. However, the main focus is how the role of *scientific* evidence can be transformed into legal evidence. So that later experts are needed who are able to translate and / or transform *scientific evidence* into *legal evidence*, especially when it has entered the judicial process. Considering that regulations related to scientific evidence have not been explicitly regulated by law. On the other hand, the knowledge of judges and other law officials such as prosecutors and police investigators on scientific evidence is also still limited. This will certainly have implications for the environmental law enforcement process in the future. The

importance of scientific evidence in the process of proving land and forest fire cases, opening up opportunities for many variations in research results as evidence submitted by both parties in court with different interests, and the limited knowledge of judges in analyzing scientific data will be the starting point for ecological injustice. In general, it can be said that there are still many challenges to utilize scientific evidence in handling environmental cases. Judges still face difficulties in interpreting scientific evidence as legal evidence due to judges' limited understanding of science. In fact, the judge's understanding of science is needed to determine and apply scientific facts to the legal framework, so that appropriate and accountable decisions can be made.

METHOD

The method of data collection in writing this law is library *research*. This technique is carried out to obtain secondary data, namely through the study of legal materials that are binding on the problem under study, consisting of laws and regulations, books, research results, papers, the internet, dictionaries, theses, and writing or notes related to the writing of this law.

DISCUSSION

Scientific evidence is evidence produced using scientific rules in obtaining it, so that what is produced is scientific evidence. This means that those who do it are experts in accordance with their competence, sampling methods also follow the applicable scientific method, as well as the replication (replication) used also according to the intensity used, for example using sampling, representative location, then analyzed in the appropriate laboratory then poured in written form such as expert certificates.

Forest and land burning is an act of damaging the environment by burning forests and land carried out intentionally by people or corporations, so it is included in environmental crimes. Forest and land burning can be said to be a form of crime and can be called a criminal offense because the act has an impact that can harm the interests of many people, and has fulfilled the elements of a criminal act so that there are sanctions for the perpetrators. Many arson crimes occur in Indonesia due to lack of public awareness of the importance of the environment.

Article 69 paragraph (1) letter h of the UUPPLH prohibits anyone from clearing land by burning. However, there is an exception in Article 69 paragraph (2) which states:

> *"The provisions referred to in paragraph h pay serious attention to local wisdom in their respective regions*."

Regarding this local wisdom, it is further explained in the explanation section of Article 69 paragraph (2), which states that the local earifan referred to in this provision is to burn land with a maximum land area of 2 hectares per head of family to be planted with plants of local varieties and surrounded by fire barriers as a deterrent to the spread of fire to the surrounding area.

The UUPPLH has regulated criminal sanctions that will be imposed on arsonists as a form of criminal liability, where the arsonists are obliged to account for their actions. Criminal sanctions given to parties who burn forests and land intentionally are regulated in several articles as follows:

1. Article 98, where criminal sanctions are given as a result of burning forests and land. In this article, it is seen that there is a material offense that emphasizes the consequences of deliberate forest and land clearance.
2. Article 108 regarding parties who burn land as described in Article 69 paragraph (1) letter h.
3. Articles 116 to 119 regulate criminal charges against corporations by explaining which parties in a corporation can be criminally sanctioned or held accountable, as well as about additional penalties that can be imposed.

Punishment is closely related to the issue of criminal responsibility as a form of criminal law enforcement, where in environmental crimes a *double track system* is applied, namely against perpetrators of forest and land burning will be sentenced to imprisonment and fines that are cumulative not alternative. Therefore, imprisonment and fines will be applied to perpetrators of forest and land burning crimes. In addition, the liability of this criminal act is also based on intentional or negligence.

Before imposing sanctions, it is necessary to prove that there is a criminal act that has been committed in the form of a mistake, either intentional or negligent by paying attention to delicacies, namely material or formal offenses. The formulation of the offense gives clues and directs what must be proven. The law considers everything that is included as an element in the formulation of the offense must be proved in accordance with the criminal procedure law, as well as in the burning of forests and land must be proved in court.

Based on various laws and regulations governing forest and land burning, it can be seen that the subject of this crime is a person or individual as well as a legal entity or corporation, so that in the case of burning forests and land as an environmental crime there is individual responsibility and responsibility of business entities (corporations) as perpetrators of

environmental crimes which will then be subject to criminal sanctions. Corporate liability is a complex issue regarding proving guilt, both intentionally and omittedly because proving various forms of violations of law committed by corporations is difficult and complex.

The Supreme Court has drafted guidelines for handling environmental cases that contain provisions on scientific and expert evidence. However, in many cases, judges give more weight to evidence other than scientific evidence in proving environmental pollution. Judges with legal backgrounds still have difficulty understanding scientific data submitted by experts to be converted into legal facts.

According to Keum J. Park that in the practice of proof in court, the relationship between science and law is very complex. Some experts argue that such complexity occurs because of the inherent purpose of both. Law and science sometimes have conflicting goals, since each has developed as a reaction to different social and intellectual needs. The purpose of law on the one hand is considered a means to fairly resolve human conflicts, while the purpose of science, on the other, is understood as an attempt to seek truth. Therefore, the goal of achieving justice from a legal point of view is not the same as finding the truth of scientifically valid results from the point of view of science.

In the process of handling cases in court, this mismatch between science and law often occurs. Experts on the one hand have a need to explain *uncertainty*, while lawyers on the other see the vetting process as an opportunity to undermine the value of scientific evidence, especially if it is perceived to be in their favor.

There are two important aspects to discussing scientific evidence and relevant expert testimony. First, the existence of a valid scientific method. That is, scientific evidence must be obtained on the basis of scientific methods. Secondly, the aspect of special knowledge. This aspect ensures that the opinions expressed are based on the expertise possessed. That is, after an opinion or scientific evidence is accepted as a scientific *knowledge*, the next step is to ascertain whether the expert opinion is based on expertise gained based on education, training and experience in the field related to the problem discussed in the case.

In proving forest and land fire crimes, a judge in examining evidence must be objective. The evidence in forest and land fires is often scientific. Scientific in the sense of the need for an expert explanation in a particular field to then be drawn a conclusion that scientific evidence is valid and valid, so that it can become legal evidence. The Decree of the Chief Justice of the Supreme Court Number 36 / KMA / SK / II / 2013 concerning the Implementation of Guidelines for Handling Environmental Cases provides an understanding of evidence considered valid and

valid. It is stated that based on Cassation Decision Number 1266 K / PID. SUS/2014 in cases of environmental pollution and/or destruction, defines that:

1. Evidence is considered valid if the process of taking it is carried out in order to *Pro Justicia* with procedural procedures stipulated in the Code of Criminal Procedure (KUHAP).
2. Evidence is considered valid if the process of taking and examining is based on the most valid, up-to-date, and recognized scientific methodology by experts in the field of science concerned.

Then in the same guideline, examples of scientific tools / evidence including expert statements, letters / supporting documents for sampling must be carried out with correct and valid procedures and carried out by credible and accredited people / organizations made detailed minutes.

In Cassation Decision No. 1266 K/PID. SUS/2014 obtained scientific evidence that was taken into consideration by judges in examining legal facts at trial. An explanation of scientific evidence can be found in the Decree of the Chief Justice of the Supreme Court Number 36 / KMA / SK / II / 2013 concerning the Implementation of Guidelines for Handling Environmental Cases in Chapter IV concerning Guidelines for Handling Environmental Civil Cases, that scientific evidence must be supported by expert testimony at the trial to make it legal evidence. Furthermore, it is further explained that examples of scientific evidence include letter evidence such as laboratory analysis results and calculation of compensation due to pollution and / or damage from experts.

Scientific evidence is a combination of several evidence tools regulated in the Code of Criminal Procedure and Law Number 11 of 2008 concerning Electronic Information and Transactions, namely expert statements, letters, and electronic evidence. This understanding can also be interpreted as the understanding of scientific evidence in proving forest and land fire crimes. In accordance with the Decree of the Chief Justice of the Supreme Court Number 36 / KMA / SK / II / 2013 concerning the Implementation of Guidelines for Handling Environmental Cases in Chapter V concerning Guidelines for Proving Environmental Crimes, that expert testimony is part of evidence.

After knowing the classification of scientific evidence above, it is necessary to conduct an analysis to answer the problem of how a scientific evidence can become legal evidence in an evidentiary process at trial. The change of scientific evidence into legal evidence cannot be

separated from the role of judges in assessing evidence. The judge must be objective by considering expert testimony. The process of transforming or changing scientific evidence into legal evidence is based on two applicable rules, both in accordance with laws and regulations and expert/doctrinal thinking. The validity of an evidence must meet 2 (two) conditions. First, scientific evidence must be legitimate. Evidence is considered valid if the process of taking it is carried out *in the context of pro judiciary* with procedural procedures stipulated in the Code of Criminal Procedure (KUHAP). Second, scientific evidence must be valid and authentic. Evidence is considered valid if the process of taking and examining is based on the most valid, up-to-date, and recognized scientific methodology by experts in the field of science concerned.

Scientific evidence in Cassation Decision Number 1266 K/PID. SUS/2014 can be known from expert information, namely DR. IR Basuki Wasis, M.Si and Ir. Ardhi Yusuf, M.Agr. In this case, the plantation land owned by PT. Mekarsari Alam Lestari (PT. MAL) is a peatland with a thickness of > 3 meters (more than three meters) whose soil PH based on expert information DR. IR Basuki Wasis, M.Si around 3.85 even though the ideal soil PH for oil palm is 5-6. To achieve a land PH of 5-6, PT. Mekarsari Alam Lestari (PT. MAL) must carry out liming and fertilizing which is costly and takes a long time. Then based on the expert information Ir. Ardhi Yusuf, M.Agr who explained from the former or residual burning that occurred evenly in several locations of PT. Mekarsari Alam Lestari (PT. MAL) and the type of fire that burns from north to south only on land prepared for oil palm planting, then the fire that occurs on PT. Mekarsari Alam Lestari (PT. MAL) is a deliberate act so that it is expected that the fire that will burn the expected target with measuring material is a log clump (path clump) and the presence of oil palm seeds that have been prepared to be planted immediately in a prepared location (burn site).

Based on expert information Ir. Ardhi Yusuf, M.Agr, due to land fires at PT. Mekarsari Alam Lestari (PT. MAL) include:

1. Causes damage to the surface layer of peat 1 (one) cm thick. The damaged layer cannot be restored to its initial condition, even if it comes back again it will take a long time provided that the burning condition should not be disturbed. As a result of this damage, it clearly interferes with human life and other living things because its function as a water storage is no longer running and it will pose the threat of floods and droughts.
2. The destruction of this layer will reduce the service life of the burned land, so of course it will reduce state income. Where the cost of ecological and economic losses caused by burning land in the plantation area of PT. MAL is IDR 87,705,875,000.00 (eighty-seven billion seven hundred five million eight hundred and seventy-five thousand rupiah).

3. As a result of burning the land has produced gases that can disturb the environment, humans and other living things.

Environmental law enforcement as an act and/or coercive process to comply with laws based on environmental provisions, regulations/or requirements. The Court as one of the law enforcement agencies has the responsibility to ensure good enforcement of natural resource environmental laws in Indonesia.

Enforcement of criminal law (criminal procedural law) is only based on the applicable criminal procedural law, namely Law Number 8 of 1981 concerning the Code of Criminal Procedure (KUHAP), especially regarding limited evidence as stipulated in Article 184 of the Code of Criminal Procedure. In the UUPPLH the matter of proof is specifically regulated. The specificity of the matter of evidence as mentioned in the Second Part on Evidence Article 96 states that valid evidence in the prosecution of environmental crimes consists of:

1. Witness statements;
2. Expert information;
3. letter;
4. Instructions;
5. Defendant's statement; and/or
6. Other evidence, including evidence regulated in laws and regulations.

Other evidence based on Article 96 letter f includes evidence in Article 164 HIR and Law Number 11 of 2008 concerning Electronic Information and Transactions, in addition to environmental cases there is a need for scientific evidence, such as the results of laboratory analysis, calculation of compensation due to pollution and / or damage from experts. In the case of forest and land fires, the element of causality relationship is very difficult to prove, especially regarding pollution by chemicals that require scientific *evidence*. Scientific evidence must be supported by expert testimony at trial in order to be used as legal evidence.

The magnitude of the influence of science and technology accompanied by the increasingly advanced model of environmental risk analysis has an influence on the role of judges as law formers. The development of science and technology has an impact on the quality of crime, so it must be balanced with quality and methods of proof that require knowledge and expertise. The criminal justice system as a way to prevent and overcome crimes that occur in the community, has a very large role to prevent and overcome environmental crimes. The

evidentiary stage is important in the criminal justice process in Indonesia to seek material truth. In this evidentiary stage, the agenda of the evidentiary hearing reflects events that occurred based on valid evidence. Proof of environmental crimes is regulated in Article 96 of the UUPPLH regarding valid evidence consisting of: witness statements, expert statements, letters, instructions, statements of the accused, and / or other evidence, including evidence regulated in the law. At the evidentiary stage, the judge can see from the evidence presented to the judge and the judge has the right to judge from the testimony and evidence.

The method of investigating environmental crimes as well as in the case of forest and land fires is almost similar to the method of investigating general crimes. The steps taken are also the same, only different from the type of criminal act. Against environmental crimes, requiring experts to say an environment is polluted, then it can be done to escalate the investigation into an investigation. This is important to do related to the authority of the National Police in conducting investigations must have a basis (*legal standing*). Environmental crimes are very difficult to investigate because in addition to sampling, it is also necessary to test samples taken to the laboratory. Testing to the laboratory to test the content levels whether it exceeds or not. Therefore, experts are needed to provide information about the content levels in the form of reports or letters, or Minutes of Examination by Investigators. This is what is called scientific evidence which will later transform into valid evidence before the court (*legal evidence*).

Examples of forms of scientific evidence:

1. Twigs and wood burned, Peat soil burned, Pioneer plants and Pickle fire residues (MAL-1), Block E-39, Each (one) sempel is packed in a large brown envelope.
2. Twigs and wood burned, Peat soil burned (MAL-II) Block D51 (there are burnt plants), Each (one) sempel is assembled in a large brown envelope.
3. Unburned soil, (MAL-IV) Blokd-52), 1 (sample put in a large brown envelope.
4. Burning wooden twigs, Burnt peat soil, Fire residual ash, (MAL-V), Block C-52, 1 (one) sample put in a large brown envelope.
5. Peat soil is not burned, Mal-V, Block C-53, 1 (one) sample is put in a large brown envelope.

Perpetrators who order to do, and who participate in unlawful acts intentionally commit acts that result in pollution and / or destruction of the environment committed by or on behalf of legal entities, companies, associations, foundations or other organizations and carried out by people both based on employment relationships and based on other relationships, who act within a legal entity, companies, associations, foundations or other organizations that are connected in

such a way that must be regarded as a continuing act, as regulated and threatened with crime in Article 41 paragraph (1) jo Article 46 paragraph (1), (2) Law Number 23 of 1997 concerning Environmental Management *jo Article 55 paragraph (1) 1st of the Criminal* Code jo Article 64 paragraph (1) of the Criminal Code.

The application of scientific evidence or scientific evidence has 2 (two) classifications of criteria for the application of evidence, namely:

1. Types of scientific evidence
    a. Descriptions of the hypnotized person to help or remember his or her past;
    b. Remarks from persons who are intoxicated;
    c. Use *Truth Serum Test*;
    d. *Blood typing test*;
    e. *The systolic blood pressure deception test*;
    f. *Mathemathical certainity* (*The Calculus of Probability*) or *The Frequency Theory of Probability*;
    g. Use of statistical tests to measure the likely error rate of a conclusion;
    h. The use of sniffer dogs to determine the perpetrators of murder, robbery, theft.
2. Models of scientific evidence that can be applied, namely:
    a. Chemical/blood tests on drunk people;
    b. Logging and speed detection (use of radar or VASCAR);
    c. Police laboratories, such as fingerprints (including fingerprinting, soleprints, and palmprints), chemical analysis of narcotics, tests for forgery of signatures, falsity of documents and others;
    d. Blood tests to prove the presence or absence of blood relations between mother and child;
    e. Urine test to prove the presence of narcotic abuse;
    f. *Test breathalyzer* to analyze all interpretations in proving the content of alcohol in the blood;
    g. Nalline test to prove narcotic use;
    h. DNA testing to prove the perpetrator of the crime;
    i. Microanalysis, to analyze very small objects, such as broken glass, wood fiber, soil type, and others;
    j. *Neutron activation analysis* to identify and compare physical evidence;

k. *Psychiatry test* and *Psychology* to look at the mental health of the perpetrator of the crime;
l. Sound analysis *Spectrographic Voice Identification* (*voice print*);
m. Use of photos, videos and others.

In environmental crimes, the element of causal relationship is very difficult to prove, especially regarding pollution by chemicals that require *scientific proof*. The role of experts is very important in the legal process of environmental pollution cases, that role includes uncovering the elements of delicacy, examining the validity of documents (area permits, EIAs), field research, legal sampling, and laboratory analysis. Limited knowledge of law enforcement officials and experts as well as lack of perfect facilities and methods are obstacles in proving environmental cases.

In addition, the magnitude of the influence of science and technology accompanied by the increasingly advanced model of environmental risk analysis has an influence on the role of judges as new law formers, including the understanding of environmental crime seen from the increasing importance of the role of experts to provide scientifically careful arguments to measure the impact or destruction in the field of environmental crime.

An expert who testifies at a court hearing can provide an overview related to his expertise to the panel of judges on the matter. Especially if this is connected with Article 183 of the Criminal Procedure Code which emphasizes that the decision must be proven by two valid evidence, so that when a judge does not know about something, expert testimony is needed to provide an overview to the judge in making legal considerations for the judge's decision.

Judges who hear environmental cases are sometimes not familiar with the scientific evidence presented except for judges who have followed the certification of the Supreme Court environmental judge and are certified by the Supreme Court Environmental judge. In addition, the statements as if true as presented by the defendant's Legal Counsel seemed several times to make the panel of judges doubt. For example, after a forest fire occurs then plants grow again, so it is said that peat is not damaged, even though the peat burns and disappears and does not come back again. Another example, for example, there are those who say *the hotspot has* expired *so that if it is not checked at the time of the incident then it is not true, even though all of it is not true, because the* hotspot is similar to CCTV whenever it can be seen and there is no *expiration.*

In reaching a truth, it is expected that judges need the support of various parties including expert testimony. In giving his statement, an expert is based on his special expertise. From this, it

can be obtained that an expert with expertise has a role to make light of a criminal case, so that the judge has a view based on the description above, it can be seen that the proof of environmental crimes. The function of experts in criminal evidence has indeed been significant along with the times.

Creteria about expert witnesses, especially the environment, is not easy to do, because there are limited experts who can provide understanding related to environmental sciences and / or other related sciences, so that judges can be convinced by the expert's testimony.

In practice, expert witnesses generally meet the minimum requirements, namely special education in related sciences (ecology, geology, hydrology, water conversion, chemistry, etc.) and the field of law that has sufficient experience so as to describe the real situation in the field measurably, helping the judge understand the causes of the facts that cause the effect and how likely the expert is to be said with writing that can be generally recognized in the field.

The expertise of a person who has no formal education and does not have sufficient experience in a sufficient span of time can make the expert testimony not strong enough to be used as a basis for judge's consideration. Moreover, in general, environmental crime cases are not easy to understand and understand, in general, legal practitioners still measure expert professionalism through formal education and experience as a generally accepted requirement, for that judges must still have arguments in determining the qualifications of experts they will receive.

Another difficulty judges may face is measuring the capacity of experts from fields that come from outside the legal science. The judge is obliged to assess whether an expert really has special knowledge and experience. The judge is free to determine who has special knowledge and experience in a particular field so that he can really provide his assistance as an expert. Even so, the accuracy of judges is an inherent obligation of a judge in determining expert qualifications.

Forest and land fires have become a public concern because they have a serious impact both in terms of economic, social and environmental whose smoke impacts reach surrounding countries and always recur every year because efforts to control forest and land fires have not been carried out optimally by stakeholders. With this consideration, National Police Chief Tito Karnavian issued Circular Number SE/15/XI/2016 concerning Forest and Land Fire Control. In this SE, it is explained that criminal acts related to forest and land fires can include acts in the form of intentionality or negligence and can be formal or material crimes, among others, one of

which results in exceeding environmental damage standards and / or ambient air quality standards.

The Chief of National Police requested that repressive and preventive measures be taken, where members of the National Police who handle forest and land fire cases must understand the evidence of elements of criminal acts related to forest and land fires, including:

1. Determination *locus delicti*, which can refer to indications or information on the presence of hot spots, hot spot distribution maps, hot spot mapping and/or coordinate point determination.
2. Determination *tempus delicti* with reference to expert opinion and satellite imagery.
3. Proof of the element of "whose goods" for corporations that can refer to permit documents, statements from environmental law experts, or corporate criminal experts to explain the construction of corporate criminal acts as referred to in Article 116 Law 32/2009, Article 113 Law 39/2014 and Articles 55 and 56 of the Criminal Code.
4. Proof of guilt is carried out by document verification and sampling (e.g. peat thickness after fire, water level in canals or presence / absence of fertilizer) and satellite images (historical and current). To prove the element of intentionality, refer to the Annual Work Plan document, Environmental Impact Analysis (Amdal), the results of supervision by the permit provider or analysis of financing for Land Clearing Without Burning (PLTB). To prove the element of negligence, it can refer to the availability of facilities and infrastructure, standard operating procedures for fire control, the existence of a closed canal system by maintaining the water level for peatlands, the availability of boreholes or water reservoirs.

CONCLUSION

From the discussion described above, conclusions can be drawn, namely:

Environmental law enforcement, especially in forest and land conservation cases, is a matter of proof because it questions various interests and has become one of the main and fundamental problems in the implementation of environmental law. This problem is related to the complex technical nature, the variety of disciplines involved and the requirements for valid evidence.

The power constraint in using scientific evidence as evidence is very difficult to prove so that scientific evidence is needed to encourage a more equitable law enforcement process so that legal certainty can be realized. The role of experts to explain scientific evidence is very important in the legal process of forest and land fire cases, that role includes revealing the elements of

delicacies, examining the validity of documents (area permits, EIAs), field research, legal sampling, and laboratory analysis.

Law enforcers still have difficulty understanding scientific data submitted by experts to be converted into legal facts. The position of scientific evidence in evidence in court cannot be separated from the influence of information provided by experts. Experts are needed to clarify scientific technical issues.

Limited knowledge of law enforcement officials and experts as well as the lack of perfect facilities and methods are obstacles in proving environmental cases.

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