ASEAN Experiences on Judicial Utilization of Scientific Evidence in Environmental Justice Cases

Cecep Aminudin[1], Efa Laela Fakhriah[2], Ida Nurlinda[3], Isis Ikhwansyah[4]
[1,2,3,4]Padjadjaran University, Faculty of Law, Bandung - Indonesia
Email : cecepaminudin@gmail.com

Abstract--Scientific evidence is one of legal and evidentiary challenges in the court settlement of environmental disputes in ASEAN. The issue of scientific evidence in court is related to the outcome of environmental justice cases settlement. The aim of this article is to discusses some available references in ASEAN countries to counter the challenges with the judicial utilization of scientific evidence in environmental justice cases. The research uses qualitative method to analyse secondary data. This article discusses some available reference such as joint assignment of the experts, internal court guidelines, independent courts appointed experts, court register of experts and partnership of court with the academic and scientific community, convene panels of judges, environmental education for judges and the in-house technical experts in ASEAN countries. These references could be group into the three categories which relates with procedural laws; experts' side, litigants' side and court side. Dealing with scientific evidence is a challenge for the ASEAN court to assess the case properly in order to make a right and just decision. Several experience and solution have been developed by ASEAN judiciary to better equipped themselves with the capacity needed. While the possibility of corresponding the rules of procedure and model rules for environmental cases including the evidentiary rules could be explored in the future, the region national experience could be learnt by each jurisdiction owing to the same characteristics of environmental cases and the common vision to realize environmental justice and sustainable development in the region based on the rule of law.

Keywords- ASEAN; Environmental Justice; Scientific Evidence.

I. INTRODUCTION

Expert and scientific evidence is one of legal and evidentiary challenges in the court settlement of environmental disputes in Asia including ASEAN countries. Understand expert and scientific evidence, and weigh and evaluate the complex evidence faced by judges in their judicial decisions. The long delay in trial is often the result of a failure to understand expert and scientific testimony. The main challenge for obtaining expert evidence is the difficulty in evaluating two conflicting evidence from experts, the high cost of obtaining expert evidence and the lack of experts in various technical fields.[1]

Adjudication as a means of settling disputes and as a form of social ordering is a process of decision by impartial judge or arbitrator that allow to the affected party a form of participation which consists in the opportunity to present proofs and reasoned argument.[6]

The 2019 United Nations Environment Program (UNEP) report mentions the technical and scientific problems that are often encountered in handling environmental cases related to the imbalance of specific knowledge among the parties involved and the need for solutions to improve the quality of legal decision making and ensure access to justice.[11]

II. PROBLEMS

This article describes and discusses the particular evidentiary rules and legal experiences in ASEAN countries which could be understand as an effort to overcome the court challenges in the judicial application of scientific evidence.

III. RESEARCH METHOD

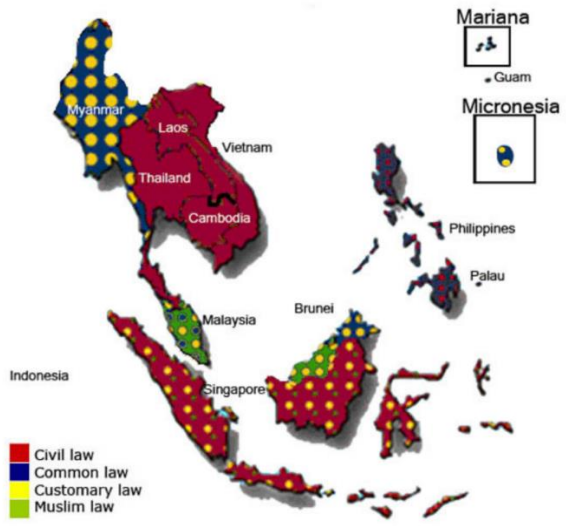
The type of research used in this study is normative legal research that places more emphasis on library research. This is descriptive research using secondary data. Analysis of the data used in this study is a qualitative analysis which is then presented in a descriptive form.

IV. DISCUSSION

A diverse legal system of ten Association of South East Asian (ASEAN) member countries as shown in figure 2 spread from civil law system in Cambodia, Laos, Thailand, Viet Nam, Indonesia and common law system in Brunei, Malaysia, Myanmar and Singapore while mixed of both common law and civil law could be found in Philippine. Muslim law could also be found in Brunei, Indonesia, Malaysia and Singapore while customary law could be found in Myanmar other than in Brunei, Indonesia and Malaysia.

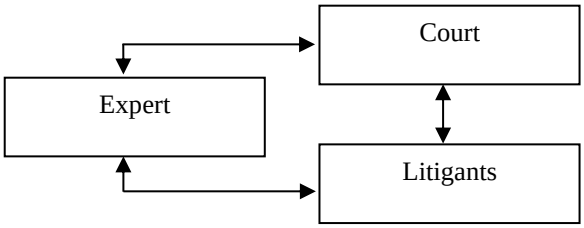
ASEAN Chief Justices' Roundtable on Environment which held in Jakarta on 5–7 December 2011, produce a Common Vision on Environment for ASEAN Judiciaries. The roundtable brought together chief justices and their designees from the highest courts of Indonesia, Lao, Malaysia, Myanmar, Philippines, Singapore, Thailand, Cambodia, and Vietnam, acknowledge the common environmental challenges faced by ASEAN which require rule of law as a foundation of good governance to resolve it.[7]

Figure 1 legal system of ASEAN countries.[12]



The Common Vision states the agreement of the ASEAN judiciaries to develop an action plan for justice, governance, the rule of law and sustainable development. One such plan is that the ASEAN judiciary will implement special procedural rules for environmental cases where these cases already exist and where they do not yet exist to consider developing and implementing them. The rules of this procedure can include rules of evidence specific to environmental cases, acceleration of cases, special remedies, compensation, and other ground-breaking environmental processes.[7]

Figure 2 parties involved in judicial utilization of scientific evidence



Some available references to counter the challenges are joint assignment of experts, internal court guidelines, independent courts appointed experts, court register of experts and partnership of court with the academic and scientific community, convene panels of judges, scientific and technical matters in environmental education for judges and in-house technical experts.[1] These references could be group into the three categories, experts' side, litigants' side and court side. The experts, litigants, and court side aspects also related with the procedural laws and guidelines (figure 2).

2.1 Procedural Law and Internal Court Guidelines

Internal court guidelines could be a useful instrument to assist judges in dealing with expert and scientific evidence. The following description elaborate Philippines, Thailand and Indonesia experiences in developing internal court guideline.

Philippines Experience. Rules of Procedure for Environmental Cases which issued by Supreme Court in 2010 direct the procedure in civil, criminal and civil environmental cases. The Rules of Procedure regulates the applicability and standard for application of precautionary principle as evidentiary rules. This application is regulated in Rule 20 which says that "when there is a lack of full scientific certainty in establishing a causal relationship between human activities and environmental impacts, the court must apply the precautionary principle in resolving cases before it" and "the constitution of community rights to a balanced ecology and health must be given the benefit of these doubts. " The following factors, including threats to human life or health, injustice to current or future generations or prejudice to the environment without legal consideration of the environmental rights of those affected can be

applied as a standard for the application of the precautionary principle which can be considered.

Given its supplementary status, as mentioned by Aldecoa-Delorino in Mulqueeny & Cordon (2013), Rules of Procedure allow scientific evidence and expert testimony on scientific and technical issues to environmental cases. While witnesses' opinions cannot be accepted as evidence, the court can solicit opinions from experts about a particular problem or problem that requires special knowledge, skills, experience, or training, that must be hold by the experts for the first time.[8]

There is no precise standard for measuring witness competency to fulfil the qualifications as an expert witness. But enough, that expertise is strengthened by education and training, familiarity with facts, and authority or standard quotations as a basis for his opinion. Evaluation of the credibility and the evidentiary value of the witness assessment is subject to the court judgment. Thus, expert witnesses can be impeached and or the probative value of their judgment can be agreed by the presentation of conflicting evidence from the opposing party, contradictions in the testimony of expert, and other expert testimonies on the matter.[8]

Facing the opinions of conflicting experts, the court must give greater weight and confidence to a more complete, and scientific opinion. The testimony must be received with caution since the expert paid by the parties. The court must consider expert opinions only as advisors, but they could not solicit expert opinions. There are a number of examples that can have a conclusive effect, such as when inadequate general knowledge and all the facts present are proven.[8]

In giving weight and authority to expert opinion, according to Delorino in Mulqueeny & Cordon (2013), the court considers the abilities and character of the expert witness, the bias of experts in supporting parties, the fact he was a paid witness, and any other problems that were worthy of his approval.[8]

In deciding environmental cases, technical or scientific evidence is important, especially in assessing evidence which cannot be properly, safely, and or adequately evaluated by the senses. According to Delorino in Mulqueeny & Cordon (2013), this type of evidence can be object or real evidence, documentary evidence, or testimonial evidence.[8] When the actual object or real evidence cannot be presented before the court, Article 21 of the Rules of Procedure regulates admissibility of photographic, video and similar evidence and the status of entries in official records as *prima facie* evidence. Photographs, videos, and similar evidence of events, actions, transactions of wildlife, by-products or derivatives of wildlife, forest products or mineral resources that are the subject of a case must be accepted when confirmed by the person who took the same, by several other people who be present when evidence is taken, or by someone else who is competent to testify about its accuracy. Entries in official records made in the performance of their duties by Philippine public officials, or by someone in carrying out their duties specifically ordered by law, constitute the main evidence of the facts stated in the document. Delorino in Mulqueeny & Cordon, (2013) stated that Documentary evidence can consist of permits, licenses, records, scientific publications, analyses, and environmental impact assessments when offered as proof of their contents. Proof of testimony can be oral or written, such as written statements in the form of questions and answers.[8]

Finally, according to Delorino, the standards specified in American jurisprudence, Frye-Schwartz and Daubert-Kumho, have been agreed to some degree. The standard in these cases have been quoted in Philippines jurisprudence. The scientific or technical agreements, which prove DNA evidence, require the judge to consider the relevance, competence, and materiality of the evidence. Basically, the court first looks at whether it is legally or technically valid evidence, and whether it is convincing which can be applied correctly to the facts of the problem.[8]

Quoting the landmark case of *Herrera vs. Alba*, G.R. No. 148220, 15 June 2005, Delorino in Mulqueeny & Cordon (2013) mentioned that the limiting tests for admissibility established by Frye-Schwartz and Daubert-Kumho go into the very weight of scientific or technical evidence. Therefore, in assessing the evidentiary value, or credibility of scientific or technical evidence, the court must consider the samples collected, chain of custody, contamination of samples, question of samples testing, whether appropriate standards and procedures are accepted in conducting tests, qualification of analyst who conducts tests, and

approved test results, taking into account whether the theory or method used can and has been approved and subject to peer review and publication, and general acceptance of standards and controls to ensure the truth of the data produced.[8]

Thailand Experience. In 2011 the Supreme Court of Thailand was issued the Recommendation of the President of Supreme Court of Thailand concerning Environmental Procedure which stipulates that during the trial, the court may request opinions or cooperation from experts or related institutions including collecting samples from natural resources and the environment, examining impacts, etc.

The data can be used for adjudication and problem solving for emergency problems and problems with natural resources and the environment or health, existing and potential damage, or environmental improvement and the value of wasted natural or ecological resources and step by recovery, protection, preservation or restoration of natural, environmental or ecological resources.

In weighing input from expert witnesses, the court can consider reasonable considerations and theories outlined by the expert, any possible scientific deviations, knowledge and background observations, profiles on issues of great substance or conflict of interest related to this issue.

Indonesian Experiences. In 2013 the Supreme Court Chief Justice was issued Decree No. 36/KMA/SK/XI/2013 on the guidelines for environmental cases. This guideline direct judges to follow up on laws related to the Environment, taking into account the interests of environmental protection. This guideline also explains how judges must consider the ability of experts in overcoming problems caused by scientific considerations and damage considerations.[3]

2.2 Expert Side

2.2.1 Court Register of Experts

A court register of experts from individual, government, scientific and technical institutions who could be appointed to act as experts could be a solution for courts and to find appropriate experts competent in their field in accordance with the need of the case to help the court. This could be conducted in partnership of court with the individual, professional, academic and scientific community to recruit scientists and researchers as experts in court cases.

Philippines Experiences. According to Delorino in Mulqueeny and Cordon (2013), based on Philippine experience, agreement proves to be difficult. Investigators, officers and prosecutors must overcome significant obstacles including debate and rescue to avoid giving evidence, avoiding support from local government units, unacceptable from local communities, contaminated samples, fake documents, and proof of ownership. Requested and submitted some evidence to the public prosecutor or judge is also difficult, if not possible. The Department of Environment and Natural Resources is the main government agency tasked with enforcing environmental law, collecting violators, and collecting evidence for the use by prosecutors and court awards in environmental cases. Thus, the Supreme Court has decided before the court can make a decision, asking the department about deciding the court, in some cases, is needed. Courts must rely on scientific and technical expertise from other divisions of government. Therefore, adequate training, and close coordination between, law enforcement agencies and prosecutors are urgently needed within agreed terms.[8]

Thailand Experiences. The low tariffs approved by the court for the cost of expert witnesses and whether a registered expert court is necessary is still a discourse in Thailand.[8]

2.2.2 Expert Communication and Joint Report

Singapore Experience. Questioning expert witnesses, mostly during cross-examination, according to Menon, that may be difficult. This is because expert witnesses work in fields that are new or unfamiliar to most judges. The experts consider their side as the party expert, so they consider the opposing party as an enemy. In this context, he discusses the philosophical ideas that underlie Singapore's use of expert evidence. First, it is important to consider the experts about their need to work with a mindset, not from the advocates of certain parties, but rather for court aids. Second, the court must encourage experts to comment on each other's opinions. Furthermore, the court must encourage experts to hold a meeting and submit joint reports, which contain sections where they are

developed according to opinion. Dealing with expert witnesses in the opposite way as is done in Singapore may be very valuable experience. Asking questions about related issues to solve needed environmental cases is better than asking permission with a related problem, which might be best discussed by the judge asking the experts about the problem, and the facts contained in these cases.[8]

2.2.3 Independent Courts-Appointed Experts

The disadvantages of adversarial approach to resolving environmental cases is when the disputant propose their own expert or party experts and their opinions may differ. Independent courts-appointed expert or experts committee to study the case and provide a recommendation to the court could be one solution when the conflicting opinion of party expert arise and or the judges need independent opinion to assess the facts disregard the conflicting opinions of the party's experts.[10]

Cambodia Experience. According to Article 143 of Cambodia Civil Rules of Procedure the court can request expert testimony with the request of a party. When such expert testimony is requested, a document that complements matters that are the source of expert testimony must be given at the same time. However, if there is an irrevocable reason, the document can be given within the period specified by the court. The court must listen to the other party's comment. The court will determine the subject matter and discussion space of expert testimony delivered after discussing other opinions. In this case, this document discusses the subject matter and discussion space for expert testimony must be given to expert witnesses. Furthermore Article 144 of the Civil Rules of Procedure says the expert witnesses shall be designated by the court. Any person having the necessary education and experience to provide expert testimony has the duty to provide such testimony.

Lao Experience. Article 31 of Lao Civil Procedure Law provide provision on expert. An expert is an individual with knowledge and experience in a particular field and is considered by a competent institution, and must be able to clarify issues related to his area of expertise. In the case of being asked to approve items of evidence that need to be questioned with scientific, technical, commercial, accounting and other matters, the court must issue approval to appoint an expert to connect if required by each participant in the process or according to the court's own decision. The expert must verify the evidence in the instructed agreement. After the expert has finished testifying, the expert must submit his opinion report to the court within the allotted time and must be responsible for his opinion and must keep information in a confidential case. To verify evidence, the court can take testimony from more than one expert and more than once. In re-proving evidence produced by an expert, a large number of experts are needed.

Philippines Experience. In Philippines, judges can consult with their own experts, especially when the parties experts provide conflicting opinions and the judge is confused about which opinion is correct.[8]

Thailand Experiences. In Thailand, as explained by Prapot Klaisuban in Mulqueeny & Cordon (2013) the administrative court can appoint expert witnesses, examining places, people or other objects related to the case, and transfer the matter to another administrative court for approval. The administrative court may consider impartiality, knowledge, experience, work records, principles and theories conveyed by experts to a reasonable extent, and conflicts of interest in the appointment of experts. Because expert opinions can be convincing and misleading, courts must carefully approve expert qualifications and opinions.[8]

Vietnam Experience. According to Article 79 of Civil Procedure Code, expert-witnesses required to have necessary knowledge and or experiences in the fields where exist objects needed to be expertise. The expert could be called by courts or requested by the involved parties. Article 80 of the Code stipulates rights and obligations of expert-witnesses which includes to read documents in the case files which are related to the expertise objects and to petition courts to provide documents necessary for the expertise, to question participants in legal procedures about matters related to the expertise objects, and to be present under the courts' summons to explain and answer questions related to the expertise and their conclusions in an honest, well-grounded and objective manner.

Experts also have the right and obligation to ask the court in connection with the issue of the impossibility of performing expertise because the

things needed are outside of their professional capabilities.

Expert witnesses must refuse to take a job or be replaced if they fall into one of the cases specified in the Code and the Law on Judicial Expertise; they have participated in procedures in a capacity as a defence counsel advising the legal rights and interests of those involved, as witnesses or interpreters in the same case or they have acted as court officers in cases such as in the capacity of judges, members of community jurors, ombudsmen, court clerks, prosecutors or inspectors.

Myanmar and Brunei Experience. The Myanmar Evidence Act specifically mentions the scientific opinion of expert as one type of opinion which could be provided by the experts. The act stipulates that when the court has to form an opinion upon a point of foreign law, or of science, or art, or as to identity of handwriting or finger impressions, the opinions upon that point of persons which called experts who specially skilled in such foreign law, science or art, or in questions as to identity of handwriting or finger impressions, are relevant facts. The similar provision could also be found in Brunei Evidence Act.

2.3. Party Side: Expert Fees and Burden of Proof

Malaysian Experience. The issue of expert fees affordability could be inferred from the West Malaysia residents' case who file a lawsuit against an Australian company that has an agreement with the Malaysian Government to process toxic materials in West Malaysia. Residents lose their cases due to lack of expert evidence regarding threats posed by toxic substances and with the assumption of regularity in approval of Australian companies' environmental impact assessments.[2]

Cambodia Experience. The inadequacy of evidence available to the prosecution also become an issue in Cambodia other than other biggest challenges namely the insufficient number of judges and prosecutors, interference by corrupt court officials in proper case adjudication, and the limited involvement of the public.[2]

Vietnam's Experience. Tuong explained based on Vietnam's experience, Vietnam is currently studying the best way to resolve environmental cases, which parties are involved and what procedures must be carried out. The plaintiff also faced difficulties in gathering evidence and assessing damage.[9]

Thailand Experience. The high litigation fees for court costs or trial fees and attorney's fees provide a significant disincentive to litigation that was started to protect the environment in Thailand. The economic imbalance between the parties can be strengthened by the fact that most affected people are usually poor and lack financial resources while there is no class action litigation used in the Thai procedural system. The hostile nature of the judicial process that is contrary to the inquisitorial process makes environmental litigation at an unfavourable stage because in environmental cases most involve causal issues and the task of presenting evidence lies with the accusing party which can result in unfair trials for the environment litigation especially in cases of pollution. In addition, the lack of environmental or scientific expertise at Bench can also cause reluctance to review the findings of facts and assumptions about the causes and consequences made by parties who have access to relevant expertise.[13]

The Thailand Supreme Court Decision No. 3621/2551 year 2009 in water pollution case has relaxed the plaintiff's standard of proof by using the approach of proximate cause. Accordingly, "causation" does not need a perfect scientific certainty how the damage occurred and a high probability is sufficient. The court has also transferred the burden of proof to the defendant. The court stated in its ruling that the defendant, the motorcycle parts manufacturer, failed to prove with preponderance of evidence that the water released from the defendant's factory sewer and discharged into the public sewer was clear and not contaminated by chemicals used in the defendant's production process and not harmful to all fish in the plaintiff's farm. Therefore, the defendant must be held responsible for his wrong actions.[13]

The problem of experts fees affordability which could lead to the imbalance between the parties in the access to scientific and specialized knowledge in adjudication as indicate in Malaysia, Vietnam, Cambodia and Thailand might be better resolved by the Legal Aid provision which include the aid for expert fees or the shifting burden of proof rules or court judgement as shown by Thailand experience.

2.4 Court Side

2.4.1 Specialised Environmental Court and Judges Education

Specialised environmental court or judges and environmental education for them in their continuing professional development course to includes scientific and technical matters could be seen a solution to address judges' knowledge.

Indonesian Experiences. Indonesia Judicial Certification Program on Environment was started in 2011 with the Chief Justice Decree No. 134/KMA/ SK/IX/2011 as a means for building expertise in environmental adjudication. The decree established a judicial certification program on the environment for judges presiding over the courts of first instance and the court of appeals, and required a panel of three judges to hear environmental cases. One of these judges must be a certified environmental judge who has attended an environmental law training program provided by the Supreme Court Judicial Training Centre and must pass a qualification examination. The decree also states that if the court does not have a certified judge to decide on an environmental case, the presiding judge of the court may ask the presiding judge of another court in the same circuit to appoint a certified judge to hear the case in an ad hoc basis which is referred to as "mobile certified judge".[3]

One civil case demonstrated several breakthroughs made by the Indonesian judiciary. First, the courts recognized the legal standing of both state and regional government institutions to sue violators for compensation and other relief. The state's responsibility to protect the environment entails enforcing environmental laws and monitoring the competence of government institutions. Second, the court established the causal relation between an unlawful action and the damage done to the environment by linking scientific evidence with legal evidence. The court specifically accepted National Aeronautics and Space Administration (NASA) satellite images as evidence that the fires occurred within areas controlled by the defendant company, coupled with the testimony of expert witnesses and verification made by local judges. Third, the court accepted the environmental valuation of damage presented by the government based on pertinent government regulations, standards, and methodology. The evaluation took into account the areas that had already lost their use as water reservoirs and biodiversity and genetic resources, the volume of carbon released, the losses suffered by the local economy, and the cost of rehabilitating the peatland's ecological functions. In doing so, the court considered the state's responsibility to protect the environment, the intergenerational equity principle, the polluter-pays principle, and the right to a healthy environment as a human right. The verdict showed that effective environmental law enforcement is possible if all agencies concerned perform their responsibilities and show willingness to use their resources.[4]

The Malaysian judiciary has started its effort in the field of environmental justice with the issuance of the Chief Registrar's Practice Direction No. 3/2012 on 27 August 2012, entitled "The Establishment of the Environmental Court". According to it environmental cases are assigned to the designated court. The objective of environmental court is to improve the administration of criminal justice in cases relating to environmental issues. With this special court, environmental cases can be monitored and resolved in a more efficient manner. The aim of establishing an environmental court in Malaysia is to expand and improve access to environmental justice, to provide rapid disposal of environment cases, to utilize expertise relevant to specific fields, to closely monitor environmental cases and to ensure that environmental cases not to be taken lightly, to ensure uniformity of decision making in environmental cases, and to increase public participation and trust.[5]

While specialised court and judges could build the expertise in environmental adjudication, another consideration such as limited number of environmental cases like in Brunei Darussalam might be the reason for not set up specialized court in which the environmental cases could be held by the existing court system.[4]

2.4.2 Convene Panels or Division of Judges and in-House Technical Experts

Convene panels and or division of judges could also be explored as one solution to deal with scientific evidence. Furthermore, appoint in-house technical experts who could advise the court on

technical matters could be another solution to deal with scientific evidence in environmental adjudication. The objective of having environmental courts is to have specialist judges, who are able to hold technical environmental issues better than ordinary judges. However, in countries with environmental courts, non-judge commissioners are also appointed to help judges understand some of the technical issues.[8]

Environmental case resolved by Indonesian District court involving environmental damage in Bangka Island by two defendant who are corporations. The defendant was involved in mining activities which caused a depth of 10 meters by excavation as wide as 20 meters. The plaintiff, Ministry of Environment's, filed a lawsuit and demanded compensation for environmental damage equivalent to around $ 3.1 million. The defendant questioned the plaintiff's method for determining environmental damage. The court held a panel of judges to consider scientific and technical evidence. The Panel ruled that the evidence supporting the defendant had caused environmental damage alleged by the plaintiff and provided claimed compensation.[1]

V. CONCLUSION

Dealing with scientific evidence is a challenge for the ASEAN court to assess the case properly in order to make a right and just decision. Several experience and solution have been developed by ASEAN judiciary to better equipped themselves with the capacity needed. Court register of experts, expert communication and joint report, and independent courts-appointed experts are among solution from the expert side. From the party side, rule on expert fees and burden of proof is an issue. While from the court side, specialized environmental court, judge's education, convene panels or division of judges and in-house technical experts could be elaborated as a solution.

While the possibility of corresponding the rules of procedure and model rules for environmental cases including the evidentiary rules could be explored in the future, the region national experience could be learnt by each jurisdiction owing to the same characteristics of environmental cases and the common vision to realize environmental justice and sustainable development in the region based on the rule of law.

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