



RECONSTRUCTION OF SCIENTIFIC INVESTIGATION IN INDONESIA BASED ON JUSTICE

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Abstract

The purpose of this study is to analyze the process of scientific investigation in Forensic Laboratory (Forlab), the empowerment of scientific investigation by investigators, obstacles faced and finding scientific investigation based ideal of justice. This study uses empirical juridical approach that is related to the professional investigators and forensic laboratory examiner in conducting scientific investigations, also used a qualitative approach of the source of primary data and secondary data, then analyzed with systematic discussion as concluded. The problem is analyzed with proof theory and the theory of legal certainty so that it can be concluded find scientific investigation based on the ideal of justice.

Keywords: Reconstruction; Scientific Investigation; Justice.

1. Introduction

Indonesia adopts a negative proofment (*Negatief Wettelijke Bewijs Theorie*)³, it is a verification system that is based on the evidence that has been determined by the law and the judge's conviction in giving its decision on proven or not proven fault which the accused defendant. The verification system negatively regulated in the Criminal Procedure Code article 183 "The judge must not convict to one unless at least two legal evidence, he gained confidence that a crime actually occurred and that the defendant is guilty doing it."⁴ Tool valid proof article 184 of the Criminal Code is the expert testimonies, letters, instructions, statements of witnesses and the accused. Thus the judge in imposing punishment should be at least two items of evidence on the five items of evidence set out in article 184 of the Criminal Procedure Code. Evidence obtained from investigators from the crime scene and other places related to the criminal case, the acquisition of evidence from the crime scene for further investigation process / sheave into evidence through scientific principles supported by

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³ Moeljatno. 2000, Principles of Criminal Law, Rineka PT Cipta, Jakarta, p 54.

⁴ Law of the Republic of Indonesia Number 8 of 1981 on Criminal Proceedings.



the Forensic Laboratory as the main pillar supporting the investigation by whose contribution in the form of scientific evidence and expert testimony documentary evidence, that evidence of its two other objective case with the evidence in the form of instructions, witness testimony and the testimony of the defendant that is susceptible to subjective, so that when the investigators carry out scientific investigations it will obtain objective results thus will increase the confidence of judges. However, there are investigators who are less empowered scientific investigation, this is due to various factors. From the description the problem can be formulated; how the process of scientific investigation, whether the investigators had empower scientific investigation with the maximum and how the constraints faced and why the investigation have not been scientifically ideal that needs reconstruction. This study uses how the process of scientific investigation, whether the investigators had empower scientific investigation with the maximum and how the constraints faced and why the investigation have not been scientifically ideal that needs reconstruction. This study uses how the process of scientific investigation, whether the investigators had empower scientific investigation with the maximum and how the constraints faced and why the investigation have not been scientifically ideal that needs reconstruction. This study uses juridical empirical approach. This approach is used because of issues to be addressed relating to professional investigators and inspectors Police Forensic Laboratory in the implementation of scientific investigation. Juridical empirical approach is used with the hope to obtain a picture that is clear and intact on the background and details of the implementation of the inquiry scientifically by the police, as well as to determine the constraints faced in the implementation of the inquiry scientifically and find construction investigation scientifically-based justice ideal, it also uses a qualitative approach of primary and secondary data sources were analyzed descriptively with a systematic discussion next sentence concluded. The problem is analyzed with the theory of evidence in accordance with the verification system adopted in Indonesia and the theory of legal certainty by legislation which contains general rules to provide guidance to individuals to behave in society, both in relationships with other people and in relation to society.⁵ It can be concluded find scientific investigation based justice because it can contribute to the magistrate judge of conviction intact so that in deciding criminal cases do not hesitate.

b. Research methods

Research methods used is juridical-empirical approach. Juridical approach used to analyze various regulations and legislation on Investigation use Laboratory Forensic. While the empirical approach used to analyze the law not merely as a set of rules of law that are normative, but the law is seen as justice⁶.

⁵ Peter Mahmud Marzuki, 2008, Introduction to Law, Kencana, Jakarta, p. 158.

⁶ *Ibid.*

**3. Results And Discussion****a. The process of scientific investigation**

The process of scientific investigation of the role of forensic laboratories. Police Forensic Laboratory as a supporter of scientific investigation is⁷:

- 1) At this stage of the investigation helped to process the scene to determine the case is a criminal act or not.
- 2) At this stage of the investigation, if the investigation of the incident was a criminal act, then the event / upgraded to the investigation of the case. Forlab role in the investigation process contributed to the search and collection of evidence (WEIGHT) at the crime scene (the scene). WEIGHT collected after the next process scientifically examined so that the WEIGHT can talk through the mail in the form of the minutes of the examination results.
- 3) Forlab examination results can be used as a development case.
- 4) Forlab examination results can be used as evidence is a letter / statement of experts.

Supporting data of Police Forensic Laboratory as a supporter of scientific investigation is as follows:

Table 1

Example for special tools for the inspection support of scientific investigation

No.	Name for maintaining	Use	Work principle
2	Gas Cromatography Mass Spectrophotometer (GC-MS)	Examination of evidence: unknown materials, poisons, drugs, fire, explosive high explosive.	Decompose by heating in columns and in combination with molecular weight (without comparison)
3	Atomic Absorbance Spectrophotometer (AAS)	Examination of heavy metals such as cases of environmental pollution, poisoning, explosives, etc.	Determining the concentration of heavy metals by the excitation energy is absorbed
4	Ion Cromatography (IC)	Examination of cations and anions, organic acids, amino acids, explosives,	Decomposition of the compound in the form of cations and anions by

⁷ Interview with KBP Dr. Nursamran Subandi, M.Si, Head of the Laboratory Forensi Semarang Branch, Friday, July 6, 2018.



No.	Name for maintaining	Use	Work principle
		environmental and toxicology / poisoning	heating the column
11	LAB-X 3000 (X-Rays)	metal inspection	Irradiation with X-rays, excited
12	Lie Detector (Polygraph)	Test lie	Examination based on heart rate, perspiration
13	EMIT Solaris (Immunoassay)	Examination of the urine and blood drug detecting	Spectrofotometry
17	Radio Active Detector	Examination of radioactive elements	Detecting radioactive elements
18	Explosive Detector	High explosive examination of environmental pollution at the scene	Detecting explosive high explosive
36	FTK (Forensic) and EnCase	Analyzing acquisition from Image Master Solo	From the acquisition of Image Master Solo, then analyzed in detail in accordance with the relevant case
37	Vox Audio Forensic System	Examination of the evidence recorded voice (sound analysis)	Comparing the sound recording sound recording of evidence by comparison
38	Video Forensic System Clear ID Video Focus	Examination of evidence, recording the motion picture / video, for example on the side of the TV, mobile phones, cameras, video tape recorders, etc.	Enrichment or enhancement on the video frames

According to the authors based on data obtained mainly completeness of the instruments within their technological progress with a criminal offense that accompanies technological development, Police Forensic Laboratory as a supporter of the investigation can be scientifically prepared such that its role has been to support



the investigation scientifically but still not optimally if adjusted with proof theory and the theory of legal certainty, especially instruments for DNA data base, the data base Ballistic, Digital Forensics, etc⁸.

b. Empowerment of scientific investigation

Data examination of evidence / cases, examination of the crime scene (the scene), the expert witness and socialization that have been implemented Year period 2017⁹.

Table 2

Data examination of evidence / Case in Central Java Police ranks

Subdivision	Entry		Ends		The rest		%	
	Case	Weight	Case	Weight	Case	Weight	Case	Weight
FORENSIC CHEMISTRY BIOLOGY	55	2,452	55	2,452	-	-	100	100
- Chemistry	37	2.363	37	2.363	-	-	100	100
- Toxicology	13	46	13	46	-	-	100	100
- Biology / Serology	5	43	5	43	-	-	100	100
DRUGS FORENSIC	1,557	318.786	1,557	318.786	-	-	100	100
- Narcotics	1.271	18.452	1.271	18.452	-	-	100	100
- Psychotropic	74	59.382	74	59.382	-	-	100	100
- Dangerous Drugs	212	240.952	212	240.952	-	-	100	100
FORENSIC	81	1,562	81	1,562	-	-	100	100

⁸ Interview with Commissioner Setiawan Widiyanto, Head of Sub Division of Planning and Administration, Wednesday, July 4, 2018.

⁹ Interviews with the inspectors Semarang Branch Police Forensic Laboratory which Bowo Commissioner Nurcahyo, S.Si., M. Biotech, Commissioner Ibn Sutarto, ST, Commissioner Gde Buyung Dawn, ST, Adjunct Senior Commissioner Budi Santoso, S.Si., M.Sc., and Commissioner Toto Tri Kusuma, S.Si., Thursday, July 5, 2018.



Subdivision	Entry		Ends		The rest		%	
	Case	Weight	Case	Weight	Case	Weight	Case	Weight
BALLISTIC METALLURGY								
- Firearms	12	573	12	573	-	-	100	100
- Explosives	19	898	19	898	-	-	100	100
- Metallurgy	50	91	50	91	-	-	100	100
COUNTERFEIT MONEY FORENSIC DOCUMENT	53	3,419	52	3,418	1	1	98	100
- handwriting, signatures	22	59	21	58	1	1	95	98
- Print Product	6	60	6	60	-	-	100	100
- Counterfeit money	25	3,300	25	3,300	-	-	100	100
PHYSICS COMPUTER FORENSIC	274	357	273	356	1	1	100	100
- SpecialDetection	-	-	-	-	-	-	-	-
- Audio / Video	229	284	228	283	1	1	100	100
- Fire / traffic accidents	45	73	45	73	-	-	100	100
	2,020	326.576	2.018	326.574	2	2	99.9	100.0



According to the authors based on the data obtained by the implementation of the investigation can be scientifically empowered investigators well especially the case in Narcotic Drugs, murder, fires, misuse of firearms, explosives, digital forensics, but there are still things that are not optimally empowerment especially the case of traffic accidents, environmental pollution, and other industrial counterfeiting eat it when adjusted for evidentiary theory and the theory of legal certainty.

c. Obstacles encountered in the implementation of scientifically-based investigation ideal justice

1) Personnel

- a) Forensic Laboratory Personnel (Forlab); in addition still lacks the appropriate disciplines also need additional if later built bases Forensic Laboratory and the knowledge and skills not equally.¹⁰
- b) Investigators personnel; generally investigator know forensic laboratories to support investigations scientifically but there are still cases of cases can be supported but have not been empowered maximum, for example, the case of environmental pollution, digital forensics and once the investigation of traffic accidents, it is there are several factors: ignorance, factors far from the forensic laboratory, was already able to handle yourself, use outside experts forensic laboratories, with no forensic laboratories prosecutor has received the investigative files, because they have not been socialized intensive and effective about the existence / role of forensic laboratories throughout the police investigators, have not woken bases forensic lab every regional police even in the big cities¹¹.

2) Material, facilities and services

Conditions for maintaining (special tool) / instruments that are not upto date with limited quantity and base Forensic Laboratory limited, so less than the maximum in support of the investigation scientifically, for example for maintaining DNA to a data base of DNA, for maintaining data base Ballistic, for maintaining the Digital Forensic and for maintaining a complete environmental pollution is also underdeveloped Forlab Police and city in every major city around the Indonesia.¹²

a) The budget

Acompassion has not supported a budget that is up for the welfare of personnel (salaries, business travel for example, Fee for came to the scene, socialization to

¹⁰ Interview with Dr. Nursamran Subandi, M.Si, Head of the Laboratory Forensi Semarang Branch, Friday, July 6, 2018.

¹¹ Interview sampling some Central Java Police investigators, Polrestabes Semarang and several Police and the Police Board of the Central Java Police, dated 9 to July 12th 2018.

¹² Interviews with staff planning and administration, staff the Division of Chemical and Biological Forensic Staff of the Division of Forensic Ballistics and Metallurgy and staff the Division of Physics and Computer Forensics Forensi Laboratory Branch Semarang, Friday, July 13, 2018



area, training, an expert witness Etc.), provision for maintaining, care for maintaining and building / laboratory development of forensic laboratories, etc.¹³

b) Field of Systems and Methods

- i. Less socialized Police Regulation No. 10 of 2009 to the investigator on the handling of evidence for inspection by forensic laboratories to support scientific investigation of this case due to the limited number of forensic laboratory personnel, time, and the Forensic Laboratory base so that the implementation of scientific investigation is not running effectively and efisien.¹⁴
- ii. Still not up to the availability of SOP in case investigation of certain cases, for example the case in connection with the explosives, digital forensic, environmental pollution and so lain.¹⁵

d. Reconstruction Of Scientific Investigation In Indonesia Based On Justice

- 1) The investigation process is scientifically not be separated from the Police Forensic Laboratory to support the investigation of scientific role and is very significant in contributing mainly about legal certainty, because the results scientifically in the Police Forensic Laboratory set forth in the form of Minutes of Investigation Evidence that its interests to Pro Justitia (courts) that have legal value as evidence in the form of "letters" article 184 of the Criminal Procedure Code, if the judge still do not understand the letter then the inspectors can be present at the hearing to provide information on the results of the examination set forth in the letter was the result of information the examiner may have legal value as evidence is also in the form of "information specialist" therefore is a must application of investigation scientifically-based ideal justice.
- 2) Empowerment of scientific investigations involving the Police Forensic Laboratory conducted on a sub field of Forensic Ballistics Metallurgy, sub-areas of document and counterfeit money Forensics, Forensic Drug sub field, sub-field of Chemical and Biological Physics Forensics and Computer Forensics sub-field is still not ideal.
- 3) Obstacles encountered in the implementation of scientifically-based investigation ideal justice is located in the field of personnel, materiel, facilities and services, budgets and systems methodology.

¹³ Interview with Head of the Financial Affairs and Financial Affairs Staff Laboratory Semarang branch Forensi, Friday, July 13, 2018.

¹⁴ Interviews with officers of Planning and Administrative Affairs Section Laboratory Semarang branch Forensi, Friday, July 13, 2018.

¹⁵ Interviews with the administrative officer at the sub field of Forensic Ballistics Metallurgy, Chemical Biology and Physics Forensics Computer Forensics Forensic Laboratory Semarang branch, Friday, July 13, 2018.



- 4) Finding construction implementation scientific investigation ideal of justice based on field personnel, materiel, facilities and services, budgets and systems methodology and then to be used as a reference input to the discretion of the authorities.

4. Conclusion

Reconstruction Of Scientific Investigation In Indonesia Based On Justice is the priority become the ideal tool for checking the criminal action, especially in the case of drugs. The strategy included Personnel, Material, facilities and services, the budget, and Field of Systems and Methods.

5. References

- 1) Moeljatno. 2000, Principles of Criminal Law, Rineka PT Cipta, Jakarta.
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- 3) Peter Mahmud Marzuki, 2008, Introduction to Law, Kencana, Jakarta.
- 4) Interview sampling some Central Java Police investigators, Polrestabes Semarang and several Police and the Police Board of the Central Java Police, dated 9 to July 12th 2018.
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