

# Management, Exploitation and Contract Labor of the Pine Merkusi Forest in Tanah Gayo during the Dutch Colonial Period

Sufandi Iswanto <sup>1, \*</sup>, Nurasiah Nurasiah <sup>1</sup>, Teuku Kusnafizal <sup>1</sup>, Muhammad Haikal <sup>1</sup>,  
Zulfan Zulfan <sup>1</sup>, Abdul Azis <sup>1</sup>, and Ramazan Ramazan <sup>2</sup>

## AFFILIATIONS

<sup>1</sup>. Department of History Education, Syiah Kuala University, Banda Aceh, Indonesia

<sup>2</sup>. Department of History Education, Samudra University, Langsa, Aceh, Indonesia

Correspondence:

[sufandiiswanto@unsyiah.ac.id](mailto:sufandiiswanto@unsyiah.ac.id)

RECEIVED 2022-02-26

ACCEPTED 2022-10-21

**COPYRIGHT © 2022 by Forest and Society.** This work is licensed under a Creative Commons Attribution 4.0 International License

## ABSTRACT

This article examined the history of the merkus pine forest in the Dutch colonial era in Tanah Gayo, Aceh Province, Indonesia. The researcher focused on finding facts about (1) forest management and exploitation; and (2) the life of the contract labor. In this study, we employed the historical method using primary sources, which consisted of documents or archives, reports, pictures, and records of the Dutch people's journey to Tanah Gayo. In addition, the secondary sources were books, newspapers, thesis, and relevant articles. The author found three very basic problems. First, before the arrival of the Dutch colonials, most of the merkus pine forest was part of ulayat lands and customary forests. The forest itself was regulated by custom and might not be owned by individuals. In addition, the community was traditionally given the right to use the resources in the forest. During the Dutch colonial period, the forest management system adopted many systems and rules from Java, but these rules were interpreted by the Dutch according to the purpose of exploitation so that it seemed unclear. Second, the contract labor were Javanese, but these workers were actually part of human exploitation.

## KEYWORDS

Management; Exploitation; Contract labor; Pine merkusi forest; Tanah gayo; Ulayat; Dutch colonial.

## 1. INTRODUCTION

The Merkusi pine (*Jungh & de Vriese*) is one of the pine species that grows in Indonesia and belongs to the *Pinaceae* family (Istomo et al., 2000; Richardson et al., 2007). The merkus pine tree has many benefits and functions. From an ecological aspect, it functions as a hydrological plant and soil protector from landslides. Its leaf litter containing allelopathic substances can inhibit the growth of herbs. In addition, pine forests are home to various animals and plants (Sallata, 2013; Senjaya & Surakusumah, 2007). From an economic aspect, the wood can be used for making matches, pulp, building construction and others. While the sap, when processed, will produce rosin, resin, and turpentine which are widely used for industrial materials. The resin is used as an ingredient in soap, paint, solvents, adhesives, thinners, and others. Meanwhile the turpentine is used as an ingredient in the manufacture of perfumes, medicines, and others (Awaluddin, 2016; Wijayanto et al., 2019). The social aspect is that pine forest entrepreneurs are able to create jobs and labor (Sallata, 2013). Because of its benefits, the merkus pine tree has long been one of the most widely cultivated trees.

In Indonesia, Merkus pine can mostly be found on the island of Sumatra, especially in Jambi Province, North Sumatra Province, and Aceh Province. As a pioneer plant, Sumatran Merkus pine is also known as *tusam* (Darmawan et al., 2018; Kalima et al., 2005). Currently, Aceh Province is the province with the largest merkus pine forest in

Sumatra. These pine trees grow in the highland area of Tanah Gayo (Andini et al., 2022; Ikramatoun et al., 2020). The Tanah Gayo region covers three regencies, namely Central Aceh, Gayo Lues, and Bener Meriah regencies. In the area, pine trees grow wildly and well. Apart from being located in the highlands right in the middle of Aceh Province, Tanah Gayo is also a fertile area that is integrated into the "Barisan Mountains of Sumatra". Rainfall and humidity are quite high with average temperatures ranging from 12°C to 23°C. All of this is inseparable from its position at an altitude of 1,300 meters above sea level (Iswanto et al., 2020; Melalatoa, 2003; PaEni, 2016). To this day, the pine trees still populate the hills and mountains although statistically, the number is estimated to be decreasing due to massive sap tapping and illegal logging. This has led the local government to impose a ban on cutting down the trees.



**Figure 1.** Tanah Gayo Area Map  
[Source: (Sabani, 2018)]

The reduction in the size of pine forests is inseparable from the Western capitalist system of the Dutch colonial era and continued during the New Order. Prior to the 20<sup>th</sup> century, most pine forests were part of customary forests and communal lands. Almost all forests were part of the territory of independent local kingdoms, such as the Linge Kingdom, Bukit Kingdom, Petiamang Kingdom, and Syiah Utama Kingdom (Iswanto et al., 2012). Regarding property rights over land and forests, the Gayo community divides them into two: (1) land without a master is called *hakullolah* or Allah's right; and (2) land that is owned is called *hakuledem* or Adam's right. All of these laws refer to the teachings of Islam (Lauta et al., 2016). Land or forest that is not managed is referred to as communal land. The land is communally owned and not individually owned. Customary land includes forests including merkus pine forests, grasslands, animal grazing areas (*peruweren*), large rivers, lakes and others. All customary land is regulated and controlled by *sarak opat*, which consists of four institutions: *reje* (king), *imem* (religious leader), *petue* (customary administrator) and *sudere* (people's representative). If a community wants to own land for the purpose of farming, it must obtain the approval of *sarak opat* and pay a sum of money (*uang teranu*), which is kept as village or royal treasury. Customary forests such as pine forests are usually utilized by the community as a place for side livelihoods such as

hunting and releasing livestock (Iswanto, 2021). At that time, several areas were covered in pine trees and became part of the customary forest, including Isaq, Lampahan, Baleq (Balik), Pante Raya, around Laut Tawar Lake (Lut Tawar), and areas in Gayo Lues. Although pine trees can be found in almost all areas of Tanah Gayo, Gayo people know little about their benefits. The plant, referred to by locals as *uyem*, is only used as firewood, lighting, and mosquito repellent (Asnah, 1996; Jongejans, 1939; PaEni, 2016). Sometimes they bring them to the coastal areas of Aceh to sell them (Sufi, 2001; Sufi & Wibowo, 2013). Local communities harvest forest products in moderation without destroying them (Iswanto, 2020). However, since the early 20<sup>th</sup> century, the arrival of Dutch colonials had changed the position and order of the forest. The pine forest began to receive foreign interference. Not only did the Dutch colonials unilaterally take the customary forest, but they also caused damage to the pine forest due to the relentless exploitation of the sap. Contract laborers were specifically brought in to maximize the yield of sap tapping and invited private companies to invest. The forest environment has been further degraded by road construction and the construction of refineries.

This paper specifically analyzes the history of merkus pine forest management in Tanah Gayo by the Dutch colonial government and finds that this management was part of the exploitation of the forest: the price and demand for resin and turpentine from processed pine resin in local and international markets encouraged the Dutch colonial government to take over the merkus pine forest from local communities. The merkus pine forests that previously had status as customary forests and communal lands have been taken away unilaterally: forests that previously served as a place to fulfill side economic needs are slowly disappearing. Forest management was carried out by applying unwritten and unclear laws and policies, the rules for managing pine forests were only laws adopted from the island of Java specifically for teak forests. All laws were favorable to one party, the Dutch colonials. From 1910 to 1942, the pine forests managed by the Dutch reached an area of 109,000 hectares, and it became the largest pine forest ever managed by the Dutch colonials in Indonesia. To meet the need for labor, they also took advantage of the ethical policy's transmigration program and succeeded in bringing contract workers from Java to Tanah Gayo. The laborers were bound by binding contracts, and the Dutch made various efforts to prevent the laborers from returning to their home areas. For example, the Dutch opened a gambling field that made the workers lose and had to go into debt to Chinese merchants who became Dutch colonial accomplices. This finding shows that the management of the merkus pine forest in Tanah Gayo by the Dutch colonial government was part of the expansion of the Western capitalist system in the colony. The pine forest management system was also different from forest management on the island of Java, which was only intended as a reforestation plant, not as part of exploitation. As the main actor, the Dutch colonial had exploited indiscriminately. Not only did they exploit natural resources (land and pine forests) but also human resources, namely contract coolies from Java. The exploitation had an impact on the reduction of large pine trees due to the wrong and relentless tapping system. Forests that were previously untouched by human hands began to experience environmental damage.

This research analysis also refers to several studies that show that exploitation during Western colonialism was part of the expansion of the Western capitalism system in each colony. Exploitation is a form of relationship between one party who uses its power to gain benefits at the expense of the other party (Tomaskovic-Devey & Avent-Holt, 2019). Exploitation itself takes various forms, ranging from land extraction, timber forest products, and non-timber forest products such as sap

(Danthu et al., 2016). Further states that such exploitation can take the form of land extraction, timber forest products, and non-timber forest products such as tree sap. Regarding its purpose and impact, Richard & Amit mention that its purpose is inseparable from the economic or trade interests of Western capitalists. The impact is to cause various problems, such as social injustice, human insecurity, political instability, and law and order (Richard & Amit, 2009). Exploitation of natural resources such as forests sometimes coincided with exploitation of human resources, such as laborers. Therefore, exploitation during Western colonialism can be contextualized as the exercise of power that abuses its power, such as employers who deliberately minimized wages but maximize effort (Tomaskovic-Devey & Avent-Holt, 2019). However, the impact of exploitation on the environment tends to be ignored. Bankoff & Boomgraad stated that, so far, Southeast Asian historians in studying the management of natural resources such as forests, especially during the colonial period, tend to ignore the impact on the environment but focus more on the central trade (Bankoff & Boomgaard, 2007). In fact, the Western capitalist trade system has brought many environmental changes. All of this is inseparable from human activities in managing forests massively, which has an impact on forest ecological damage (Grove, 1995). This was also the case with the management and exploitation of the merkus pine forest in Tanah Gayo by the Dutch Colonial Government.

## 2. RESEARCH METHODS

The period of this research was limited to the period when the Dutch colonial government occupied Tanah Gayo, namely from 1904 to 1942. Since this study examines forest management in the past, the appropriate method is the historical method. The historical method was a systematic set of rules or principles, especially in gathering sources. In collecting sources, researcher could do it systematically but still had to assess the sources critically (Garraghan, 1957; Iswanto et al., 2021). The principles were then used as signs that must be used. These signs were at the same time a stage that researcher had to carry out in their research (Pranoto, 2010). These stages could be divided into five stages, namely topic selection, heuristics, verification, interpretation, and historiography (Kuntowijoyo, 1999). The elaboration of each of these stages in accordance with what the researcher did is as follows: *First*, the selection of research topics was a problem or object that must be solved through scientific research procedures (Sumargono, 2021). The topic in this study was a problem related to the exploitation of the merkus pine forest in Tanah Gayo, especially during the Dutch colonial period. This topic was very important to study because it had a tremendous impact on land conversion due to unclear laws, the arrival of Javanese workers, and very few studies.

*Second*, heuristics was the stage of gathering sources related to the topic. The sources collected included primary and secondary sources. The primary sources used in this research were Dutch documents or archives accessed through the Leiden University Libraries Digital Collections and KITLV pages. Primary sources or the main sources used in this study include the report of Jan Jongejans entitled "*Land en volk van Atjeh Vroeger en nu*" (Country and people of Aceh past and present) 1939; a report from Antonie te Wechel entitled "*Oorspronkelijke Bijdragen, De Dennenboschen Van Noord-Sumatra*" (Original Contributions, the Pine Forests of North Sumatra) 1931; a report from R. Broersma entitled "*Atjeh als Land voor Handel en Bedrijf*" (Aceh as Country for Trade and Business) 1925; and a translated book by J. Stroomborg entitled "*Dutch East Indies 1930*" (Dutch East Indies 1930) 2018. All of these sources are important notes in this research, besides being written directly by the Dutch, they are also written in the range of years that correspond to the year of this research. While

the secondary sources used that were relevant to the research topic. Secondary sources in the form of books and newspapers collected through library studies such as Syiah Kuala University Library, Aceh Cultural Value Conservation Center Library, Center for Social Science Research Institute Syiah Kuala University, Aceh Archives and Libraries, Aceh Regional Libraries, and relevant articles from various manager.

*Third*, verification or the stage where the researcher criticized the sources that had been collected in the previous stage. Criticism itself was done in two ways, namely internal criticism and external criticism. Internal criticism was done by checking the contents of the document, whether the document was properly written in the year listed. In addition, whether these sources had anything in common with other sources that had been criticized. Based on the results of criticism of primary sources, several Dutch documents had been found whose validity had been tested. Fourth, interpreting the sources that have been verified in the previous stage. In this section, the sources are arranged into an arrangement of historical facts. The sources used are only those that have passed internal criticism and external criticism. The arrangement of these facts then includes facts regarding the management, exploitation, and contract labor of the Merkus pine forest in Tanah Gayo during the Dutch colonial period from 1904 to 1942, and *finally*, historiography, which is the final stage in historical research. This stage is the stage of doing history writing from the interpretation of historical facts that have been previously compiled into historical writing.

### 3. RESULTS AND DISCUSSION

#### 3.1 Management and Exploitation of the Merkus Pine Forest in Tanah Gayo

The beginning of the 20<sup>th</sup> century became an important record in the history of Tanah Gayo. In February 1904, there was a war between the Gayo people and the Alas people (one of the ethnic groups living in Tanah Alas, now Southeast Aceh Regency) against the Dutch colonials. The war became known as the Gayo-Alas War and was part of the Aceh War which had been going on since 1873 (Gayo, 1983). The war lasted for months. With sophisticated equipment, the Dutch were finally able to subdue the Gayo and Alas people (Melalatoa, 1982). Since then, the Dutch colonial government began to establish its government bureaucracy in Tanah Gayo (Madjid, 2014). At that time, Tanah Gayo was part of the Afdeeling Noordkust van Atjeh (North Coast of Aceh), and was led by an assistant resident based in Sigli (now Pidie Regency). *Takengon* (now the capital of Central Aceh Regency) was then designated as the capital of the *Onderafdeeling Gayo*, which was divided into two areas: the *meegebied* area (lake area or Gayo Lut) and the *dorotstreet* area (plain area or Tanah Gayo). At the time, the Dutch called Tanah Gayo *Daalen Gebergte* after the Dutch leader in the Gayo-Alas War, Lieutenant Colonel G.C.E van Daalen.

Initially, the Dutch colonial government planned to make Tanah Gayo a base for plantations, such as tea, coffee, tobacco, fruits, potatoes, and vegetables (Beets, 1934). In addition, the Dutch government also intended to open plantations of quinine, pepper, patchouli and cotton. All these plans were part of the expansion of the Western capitalist system outside Java. However, due to inadequate road access, the plan was temporarily delayed (Iswanto et al., 2020). The Dutch colonial, which was intent on extracting natural resources, continued to explore almost all areas of Tanah Gayo. In late 1906, the Dutch colonials discovered a large merkus pine forest with large and tall trunks. The pine forest was located in Baleq Village (now Pondok Balik, Ketol Sub-district, Central Aceh Regency). Antonie te Wechel, a Dutch professor who was assigned to Tanah Gayo in his report, said that the merkusi pine forest was thriving with a large trunk size. The average height of the old trees reaches 70 meters and the diameter reaches 145 cm. Wechel also mentioned that the pine forest is like

an ancient pine forest, but still gives a balanced impression because it is still overgrown with young merkus pines (Wechel, 1931). The discovery also coincided with an increase in local and international market demand for resin and turpentine. The need for resin and turpentine as raw materials for the manufacture of paints, solvents, and others made their prices soar. The Dutch colonial realized that the pine forest could provide great benefits, especially to cover the cash shortage due to the war. In addition, the Dutch colonial began to accelerate the construction of the Bireuen – Takengon (*Gajoweg*) highway, which had begun in 1905.

The year 1910 marked a new chapter in the history of the management and exploitation of the merkus pine forest in Tanah Gayo. The Dutch colonial unilaterally designated the merkusi pine forest in Baleq Village as a pine forest development complex directly managed by the Dutch Colonial Government (Gonggrijp, 1944; Jongejans, 1939). The forest complex covers an area of 1 hectare (Wechel, 1931). At the end of 1910, the complex was designated as the first research area for merkus pines in Sumatra. In early 1911, the Dutch Colonial Government commissioned the Dutch Forestry Service called *Dienst van het Boschwezen* to conduct the first research on the pine sap. The results came out in 1912 stating that the merkus pine resin from Baleq Village had good quality (Broersma, 1925; Stroomberg, 2018). The release of the research results prompted the Dutch Colonial Government to expand the complex to 2 hectares (Wechel, 1931). In addition, they encouraged accelerating the construction of the Bireuen – Takengon road by increasing the number of forced laborers (Iswanto et al., 2021).

The designation of the merkusi pine forest complex in Baleq Village as a development area and research center was the starting point for the transfer of the pine forest to foreign parties. As part of customary forest and communal land, the pine forest began to lose its status. According to local customary law, the pine forest is part of *hakullolah* land or no-master's land controlled by the *sarak opat*. Despite its status as no-master's land, the community has customary rights to extract natural resources from the forest. All of this is regulated to maintain the sustainability of the forest which is closely related to local wisdom. At that time, the Dutch Colonial began to take over the forest with a land lease system. The land lease system was carried out in the form of cooperation between the Dutch colonial and the local king. Actually, the agreement was forced by the local kingdom. According to Jongejans, the land lease system also applies to lands or forests that are used as plantations for tea, coffee, pepper, patchouli, and other plants (Jongejans, 1939). However, the land lease system was quite short-lived as it was only in effect from 1910 to 1912. The end of the land lease system was due to the lack of resistance from the Gayo people. Therefore, in the following years the lands and forests of merkus pine began to be taken unilaterally by the Dutch Colonial Government. Various policies were enacted with the aim of taking unilateral profits and it became part of the Western capitalism system in Tanah Gayo.

In 1913, the Dutch colonial government, which increasingly felt it had full control over Tanah Gayo, commissioned the *Dienst van het Boschwezen* to take over the merkus pine forest complexes in Baleq Village without a lease. The forest complexes remained under the control of the Dutch Colonial Government. However, at that time, there was no clear law on the system of forest management. Nurjaya once mentioned that at that time forest management outside Java and Madura was never clearly regulated, especially regarding forest ownership rights, permanent forests, forest protection, retribution for logging, and collection of non-timber forest products. In some areas such as West Sumatra, Riau, Palembang, Lampung, and several other areas, regulations have been made but these regulations have weaknesses and tend to overlap (Nurjaya, 2005). In Java and Madura, long before the 20<sup>th</sup> century, forest

management policies were clearly regulated in the form of laws although irregularities remained. Meanwhile, on the island of Sumatra, these rules were not made clear. All of this shows that there are differences in the forest management system on the islands of Java and Madura and on the island of Sumatra (Sukirno, 2018; Susmiyati, 2020). Uniquely, however, the Dutch colonial adopted many of the land and forest management regulations that applied in Java. These regulations had a tendency to be politically and economically favorable to the Dutch colonial side only.

Since the land lease system was abolished, the law of *territorialization* was established, and it was one of the regulations adopted from Java. Budiono stated that *territorialization* was a way for the state (Dutch Colonial) and private capital owners to exercise their authority. With this law, they could then exercise control over the natural resources designated as part of *territorialization*. The law regulates the separation of forest and non-forest areas, then determines the political boundaries of the forest area which creates political and economic forest boundaries (Budiono et al., 2018). The law also changed the status of the merkus pine forest in Baleq Village into a protected forest area, which contains political and economic elements. The law also prohibited local communities from entering the forest area. Since then, the status of the merkus pine forest in Baleq Village as customary land governed by customary law has been lost (Iswanto, 2021). In fact, in addition to supporting the economic life of the community, ecologically it is also a place for various animals and plants that are far from human intervention.

On the other hand, the weakening of the position of customary land is actually not only due to the factor of unilateral forest extraction by the Dutch colonial. Van Vollenhoven, a Dutch researcher, once stated that the position of customary land and customary forests was getting weaker because of a shift in community livelihoods from forest management to farming or rice farming. In contrast to earlier times, people still tended to use the forest as part of their livelihood. Politically, the Dutch colonial administration did in fact introduce various new crops to the community that could be sold in the market. This political system has made people start to care less about the position of customary forests (Safitri & Moeliono, 2010; Vollenhoven, 2013). The influence of *Domeinnota*, which developed in Java, made the Dutch colonial power feel more powerful over forests outside Java. *Domeinnota* was a memorandum that indoctrinated the Dutch to feel powerful and have full rights over the land, including its natural resources to achieve the goals of the capitalist system.

In 1914, construction of the Bireuen - Takengon (*Gajoweg*) highway was completed. The completion of the road further encouraged the Dutch colonial to carry out its mission of expanding the capitalist system by encouraging outside traders and private companies to come to Tanah Gayo (Sufi & Wibowo, 2013). Since then, outside traders such as Chinese, Minang, and Acehnese have come to Tanah Gayo (Iswanto et al., 2022). The few private companies that were willing to invest were German and American companies. Unfortunately, both companies canceled their intentions due to the economic depression. The Dutch colonial then focused on opening up land for coffee, tea and other crops. In 1924, the economic depression was declared over, and quickly the Dutch colonial administration re-enacted the territorialization law with the intention of expanding its merkus pine forest complex. The complex was the merkus pine forest around Laut Tawar Lake, not far from Takengon City. The forest complex beat the pine forest complex in Baleq Village. The forest complex is still managed by the *Dienst van het Boschwezen* based in Takengon (Jongejans, 1939). At the same time, the demand for resin and turpentine in both local and international markets is on the rise. The need for raw materials in the industry had made the price of resin and turpentine very high. The Dutch Colonial Government did not want to waste this

opportunity and to ensure that the quality of resin and turpentine from Tanah Gayo was of good quality. In mid-1924, the Dutch Colonial Government ordered the Forestry Bureau to conduct a second or follow-up study. In particular, the Dutch Colonial Government brought botanists who worked in Dutch laboratories in Java to Tanah Gayo. According to Rusdi, since then the Gayo community began to realize that the expansion of the forest complex was intended to extract the sap. In addition, the community learned that pine resin can be used to make asphalt, paint, adhesives, batik materials, and others (Rusdi, 2011). As early as 1925, the results of the research came out and showed that the resin and turpentine from the merкуси pine forest complex at Laut Tawar Lake were as good as some pine resin samples from other areas (Stroomberg, 2018). This shows that at the time of the research, pine resin samples were taken from several forest areas in Tanah Gayo, and it was stated that overall, the merkus pine resin in Tanah Gayo was of good quality. Since then, the expansion of pine forest complexes has been vigorously pursued and exploited continuously.

Then to expedite the exploitation business, in mid-1925, the Dutch government for the first time built a pine resin processing factory to produce resin and turpentine. The factory was built in the merkus pine forest complex in Baleq and the factory was named *Caoutchouc Bedrijf Lands*. The factory was also designated as the first pilot factory in Tanah Gayo (Jongejans, 1939). *Caoutchouc Bedrijf Land* itself was a state-owned company or a Dutch State-Owned Enterprise. The construction of the *Caoutchouc Bedrijf Lands* factory in Baleq was initially still simple, especially from the engine. The factory was directly controlled by the most important *Gouvernements Onderneming* (plantation officials). At the beginning of its operation, the *Caoutchouc Bedrijf Lands* factory could only accommodate and refine pine resin from Baleq and Laut Tawar Lake. The processed resin and turpentine were then sent to Java. Jongejans stated that at that time, the factory had succeeded in refining by producing 5 tons of resin (Jongejans, 1939). The resin which was sent to the island of Java then made mercury pine from Tanah Gayo known, especially among Dutch East Indies officials and other Europeans in Batavia. In addition, several private companies that previously hesitated to invest their capital began to visit the pine forests directly in Tanah Gayo.

The request of private companies to invest their capital in the merkus pine forests increasingly made the Dutch expand their pine forest complex. In addition, the market demand for resins and turpentine had also made the prices soar. Therefore, at the end of 1925, *Dienst van het Boschwezen* under the Dutch Colonial Government, opened and re-established a new complex of pine forest areas in Lampahan (Walad, 1971). The complex was originally designated as an area specifically focused on pine nurseries (Khalisuddin et al., 2012). However, in early 1926, its status changed to that of wiretapping. This determination was followed by the determination of four other areas, namely Ratawali, Burni Telong, Pante Raya, and Bidin (Walad, 1971). Just like other areas, the five areas had actually been overgrown by wild pines, it was just that some of the land from the area was still empty. Therefore, for reasons of reforestation and the determination of territorialized areas, the seeds in Lampahan were then brought to the four areas to be planted. On the way, it turned out that pine seedlings that were ready to be planted were also brought to the Isaq (Linge) area and around the Laut Tawar Lake area (Khalisuddin et al., 2012). At first, these two areas were not included in the discourse of pine forest development, but in the following period, the two areas were also used as development areas. Thus, the number of pine forest areas managed by the Dutch was very wide. Some areas that had been overgrown at that time were ready to be tapped. Jongejans provided data, at that time the forest area



taken from the community and managed by *Caoutchouc Bedrijf* Lands under the control of the Dutch Government was getting wider. Hundreds of hectares had been part of the exploitation that had continued in subsequent times (Jongejans, 1939). In those years, all plantation and forest capital was held by *Caoutchouc Bedrijf* Lands under the Dutch Government, no longer the Forestry Bureau. The reforestation program itself could be said to be a program from *Caoutchouc Bedrijf* Lands which had never been done before by the Dutch Forestry Service. Even though in fact, reforestation was just random because the forest, in fact at that time, there was no forest degradation in Tanah Gayo.



**Figure 2.** The *most important Gouvernements* onderneming in Baleq  
[Source: (KITLV Universitas Leiden, 1930a)]

Then in 1927, the Isaq (Linge) merkus pine forest, which was not a priority area initially, was designated as a priority area. The area was indeed quite far from Takengon City, but because the demand for the export market was increasing, it was not surprising that in the end it became a priority. The journey that previously could only be traversed by footpaths began to be transformed into roads that could be passed by vehicle transportation. The road was not a barrier for the Dutch, as long as the workers still fulfilled it, it would not be an obstacle. The amount of resin that continued to increase did not match the capacity of the *Caoutchouc Bedrijf* Lands factory in Baleq. The factory was not able to produce in large quantities. In the middle of 1927, *Caoutchouc Bedrijf* Lands made repairs by replacing several engines and the engine was replaced with a French-made engine. Before being repaired, the factory was only able to produce 51 tons and after being repaired, it was able to produce resin up to 187 tons (Iswanto, 2020; Jongejans, 1939; Wechel, 1931).

In that year Java was issued a Forest Regulation specifically for the islands of Java and Madura. As for the island of Sumatra, the regulation did not apply, only a small amount influenced Sumatra. As according to Gamin, the regulation was different from the previous regulations. However, outside of Java and Madura, at that time, there was still no basis in the general law that stipulated the basis for the appointment of permanent forests, protection, and others. At that time, several laws were enacted in several regions, namely: (1) Agrarian Regulations; (2) Forest Protection Ordinance; (3) Cultivation Ordinance; and (4) Logging Regulations (Gamin, 2019). However, the

forest management law on Sumatra Island was different from the forest ordinances of Java and Madura. However, according to Sukirno, at that time, outside the islands of Java and Madura, the issue of land, including uncultivated forests, had not been regulated until the 1930s. Even though, the Dutch had promised to recognize the rights of indigenous peoples to the land that had been cultivated as well as the surrounding land. *Uncultivated* land was listed in *Agrarische Besluit*, but in reality it was never implemented (Sukirno, 2018). Indeed, since the beginning of the arrival of the Dutch in Tanah Gayo, the laws for managing forests and lands had remained unclear. Similar to previous years, the Dutch still never made clear rules, they only recognized agricultural lands that had been cultivated not for uncultivated land and forests. All areas such as tea plantations, coffee, tobacco, quinine, and others were formed of land grabbing from local communities.



**Figure 3.** Caoutchouc *Lands Caoutchouc Bedrijf* Baleq factory in 1928  
[Source: (KITLV Universitas Leiden, 1928)]

The resin and turpentine which were sent to Java and Amsterdam made the merkus pine forest known, not only in the Dutch East Indies but also outside the Dutch East Indies. This had stimulated the curiosity of the Dutch East Indies government officials in Batavia. Because of this curiosity, in 1928 finally A.C.D. de Graeff, who at that time served as Governor General of the Dutch East Indies, visited the Tanah Gayo for the first time. The visit was specifically carried out to see firsthand the complexes of pine forest areas and coffee plantations in Tanah Gayo. During the visit, Graeff was also accompanied by several expert staff from the Pathology Laboratory, Bureau of Dactyloscopy, Broadcasting Stations, and several expert staff from other agencies (KITLV, 2005). Graeff's own visit to Tanah Gayo seemed to give a signal of full support for the exploitation of the forest in Tanah Gayo, especially for merkus pine and coffee plantation expansion. Since then, not only pine forests but coffee plantations had also been expanded and this expansion had increasingly had an impact on the loss of forests in Tanah Gayo.

As usual, almost all plantation and forestry products had to be collected, so in 1930 Dienst van het Boschwezen conducted a data collection on pine forests in Tanah Gayo. The data collection was specifically for the pine area in Takengon and its surroundings. The forest area at that time had reached 49,600 hectares (Walad, 1971). This area did not include the pine forest complex in Linge. For the Dutch, it was a great achievement. For 30 years, they had benefited from the pine forest. Although there

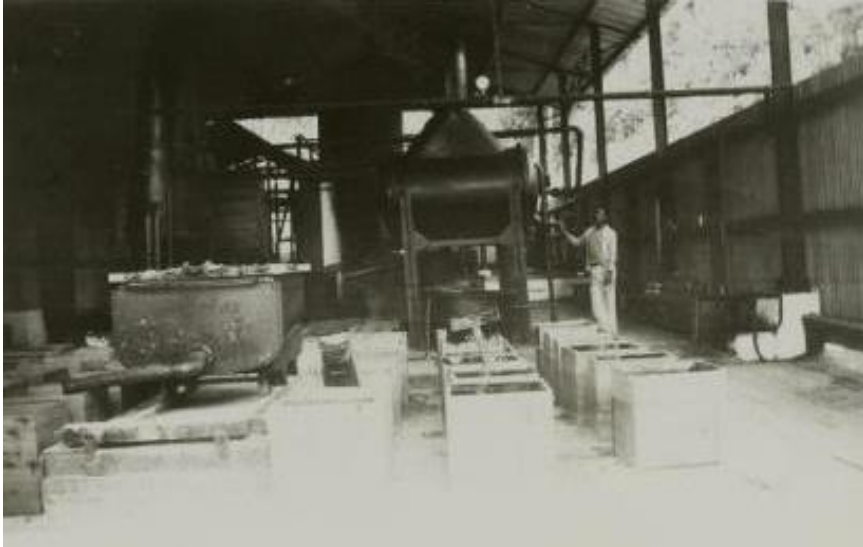
had been several times the prices of resin and turpentine had dropped due to the presence of pine products from America. At least according to Wechel, in the 1930s coolies were able to tap up to 600 pine trees a day without rushing. The coolies had been equipped with hollow axes specially designed to make it easier for the coolies. So that in that year, each month, it was able to produce around 60,000 kg of resin every month (Wechel, 1931). In 1933, the Netherlands increasingly benefited from the young pine forests that were ready to be tapped. The young trees in fact provided more benefits than the old pine trees, from the quality of the resin also turned out to be better than the old pine trees. In that year, the Netherlands also began to cooperate with several private companies (Jongejans, 1939). Actually, many private companies wanted to invest their capital, but because the capital spent was quite large, especially for land rent, transportation, and having to pay workers to the Dutch, in the end not many dared to invest. If many private parties invested their capital, then exploitation would certainly be more widespread.



**Figure 4.** A.C.D. de Graeff visits the merkusi pine forest in Baleq  
[Source: (KITLV, 2005)]

In its management, *Dienst van het Boschwezen* employed workers who were not only tasked with tapping but also maintenance. The maintenance of the pine tree itself was fairly easy, the workers only needed to protect themselves from burning dry leaves that had fallen. In addition, the stem was sufficient to clean mushrooms, ferns, and weeds which were not harmful to the pine. The difficulty in managing this was in transporting sap from the trees, most of the pine trees themselves were in the middle of the forest far from transportation routes, but *Dienst van het Boschwezen* relied on labor. Sometimes to meet the workforce, especially when transporting the sap, *Dienst van het Boschwezen* took and hired workers from the collaboration with labor supply companies. Even though in reality the number of workers still could not be fulfilled. Previously, because the cost of investing was too high, private companies were reluctant to invest. It was only in 1933 that several companies invested their capital. However, in Takengon itself, there were only companies from Germany and China. Meanwhile, forest exploitation did not only occur in Takengon, but in those years exploitation continued to increase to the Gayo Lues area and a small part of the Tanah

Alas area, where private companies from America, Japan, China, and Germany invested a lot of their capital until finally after 1942 they were taken over by Japan. All pine forests managed by private companies remained under the supervision of the Dienst van het Boschwezen led by the Terpentijn Onderneming Gouvernements. They were obliged to pay the land rent and the cost of seeds on the Dutch side. This policy had also added to the benefits for the Dutch. At that time, the number of Javanese contract labor who were said to be part of the transmigration division was also increasing.



**Figure 5.** Baleq Resin Factory Machine 1931  
[Source: (Winter, 1931)]

In early 1938, the complex of the pine forest was expanded again to an area of about 35,000 hectares. This amount was only the area in the Takengon area. In Gayo Lues, the area reached 25,000 hectares. Because the distance from Takengon to Gayo Lues and Tanah Alas was quite far, so in Gayo Lues also established pine resin distillation factories. As for the Tanah Alas area, the sap was transported to Gayo Lues to be refined. The limited number of factories had also made the private sector sometimes had to rent factories owned by the Dutch government. The results of the sap distillation in the form of resin and turpentine were then brought to Java and outside the Dutch East Indies, especially to Europe by means of being transported by ship through the ports of Ulel hue and Sabang. From the *en volk van Atjeh vroeger en nu* Land report data (1869-1944), it could be seen the amount of resin and turpentine production from Tanah Gayo. The following presents the production of resin and turpentine from exploitation of the Tanah Gayo merkus pine forest.

**Table 1.** Amount of Resin and Turpentine by Year from Tanah Gayo

Year	Amount of Resin/Kgs	Amount of Turpentin/Kgs
1925	5000 Kgs	-
1926	100.000 Kgs	26.000 Kgs
1927	238.000 Kgs	76.000 Kgs
1933	790.000 Kgs	237.000 Kgs
1937	2.120.000 Kgs	612.000 Kgs
1938	4.300.000 Kgs	1.320.000 Kgs

Year	Amount of Resin/Kgs	Amount of Turpentin/Kgs
<b>Total</b>	7.553.000 Kgs	1.271.00 Kgs

Source: (Jongejans, 1939; R. Broersma, 1925).

In general, the pine trees in Tanah Gayo had an average trunk height of 70 meters with a trunk diameter of more than one meter which had provided advantages for the Dutch colonial side. Every day pine tree trunks were able to produce an average of 17-25 grams of sap (Jongejans, 1939). This amount was included in a large number, because in general the average merkus pine tree was only able to produce as much as 7-20 grams of sap. According to Kuspradini et al. (2016), the amount and quality of merkus pine sap was strongly influenced by the altitude where it grew. In addition, the age of the tree was also very decisive. Tapping of merkus pine trees in Tanah Gayo was generally only carried out on trees that were over 10 years old and on average most of the pine trees, there were over 20 years old.

Table 1, the data shows that since 1925 the amount of resin production was 5000 kg (5 tons) and the amount of turpentine was not recorded. These results were the result of two pine forest areas, namely the Baleq pine forest and the Laut Tawar Lake area. In 1926, the amount of resin increased to 100,000 kg (100 tons) and the amount of turpentine to 26,000 kg (26 tons). The expansion of the pine area complex in 1925-1926 had a major influence on the increase in the amount of resin and turpentine in 1927, where the amount of resin increased to 238,000 kg (238 tons) and turpentine to 76,000 kg (76 tons). As for the years 1928 to 1932, no data was found on the amount of production which was probably due to the economic depression that occurred. As according to Zuhdi, at that time, the international trade network itself was weakening due to the economic depression that started with the decline in stock prices on Wall Street, United States. At that time, there was a decrease in demand and an increase in production which ultimately had an impact on the amount of production, but it was not proportional to the low demand due to the sharp increase in prices (Zuhdi, 2002). This problem was also likely to have an impact on resin production in Tanah Gayo.

In 1933, the amount of resin and turpentine increased significantly from previous years. Where in that year the amount of resin was 790,000 kg (790 tons) and turpentine was 237,000 kg (237 tons). Meanwhile, for the years 1934 to 1936, no data were found on the amount of resin or turpentine production. However, according to Wichel's report, since 1930, the results of tapping could produce around 60,000 kg (60 tons) of resin per month. Wichel's description was not accurate, but at least Wichel gave an idea that the use of hollow axes by workers could make wiretapping easier. Possibly in that year the amount of resin production had reached thousands of tons. However, in the period between 1934 and 1935, export goods were still in a period of sharp decline. Therefore, it was not possible to export and the situation began to improve in 1936. In 1937, the amount of resin amounted to 2,120,000 kg and turpentine amounted to 612,000 kg (612 tons). Whereas in 1938, the amount of resin and turpentine jumped sharply. The amount of resin was 4,300,000 kg and turpentine were 1,320,000 kg (1,320 tons). Then when totaled as a whole, resin reached 7,553,000 kg or equivalent to 7,553 tons and turpentine reached 2,271,000 kg, equivalent to 1,320 tons. This amount was the result of the pine forest that the Netherlands claimed as its own, which was 109,000 hectares. As for the following years, there were no more exports of resin and turpentine from Tanah Gayo, indeed since 1939, the development of ideology that coincided with the expansion of power eventually brought many countries into the conflict that led to World War II.

### 3.2 Contract Labor in Merkus Pine Forest Tanah Gayo

The history of workers or contract labor in Tanah Gayo could not be separated from

the history of the opening of roads, plantations, and pine forests of merkus in the era of colonialism. But it was also closely related to ethical political policies (*Ethische Politiek*) or politics of reciprocity. According to Gonggrijp, it all started at the end of the 19<sup>th</sup> century, the standard of living of the people on the island of Java at that time was very low and very worrying. All of that was the impact of the forced cultivation system (*culture stelsel*) or liberal politics. In addition, the increase in population was also considered a factor in the declining level of welfare of the people of the island of Java. This view of Javanese people's life mostly occurred in rural areas. Their lives were constantly deteriorating and sinking even though the situation was not complete (Gonggrijp, 1928). The inequality that occurred between the population that continued to increase was not in accordance with the agricultural output which continued to decrease making people live in adversity. The farmers in Java no longer had land to farm because it had been taken by the Dutch colonial side and it had been going on since the 1880s (Ginkel, 1917). In addition, the mentality and cultural system of the Javanese people at that time was not suitable for engaging in economic activities such as trading, all because the Javanese had not received education. Education at that time was only for certain groups such as nobles, not for ordinary people. Those who depended on the advance payment system made them suffer even more, coupled with the burden of exploitation from the policies implemented by the Dutch colonial government (Koentjaraningrat, 1984). Regarding education, it could not be the standard of living of the natives, but the standard of education was more appropriate to be the standard of living of the Dutch. The suffering of the Javanese people at that time caused a debate among the Dutch which led to criticism of the policies made earlier.

At the beginning of the 20<sup>th</sup> century, there was a political change from liberal to ethical politics (Wasino & Hartatik, 2017). This change was the result of criticism and suggestions from a Dutch legal expert, namely C.T. van Deventer who worked in the Dutch East Indies. He criticized the policies made and established by the Dutch East Indies Government which he thought were inhumane (Hardjono, 1982). The criticism was mainly for the exploitation of indigenous people from the *culture stelsel* policy (Putra, 2019). This policy was considered the cause of the decline in the level of community welfare and that was what lied behind the emergence of ethical politics (Hartono, 2012). Van Deventer gave advice to the Dutch East Indies government to repay the indigenous people. The suggestion was then made by Queen Wilhelmina into a new policy, namely ethical politics which included programs, irrigation, education, and emigration.

Irrigation and education programs began to be implemented, especially for the island of Java. As for the emigration program, the program was designed to reduce the population in Java. The program then gave rise to a new term, namely Colonization (Iswanto et al., 2020; Susilo & Isbandiyah, 2018). Initially the program was named *Kolonisatieproof* and changed to *Kolonisatie* (Dahlan, 2014). The purpose of sending Javanese people out of Java was to improve their lives. In a new place, it was expected to live independently. Despite the fact that there were still various problems caused by Dutch policies for their own benefit.

At first the colonization program was considered as part of the Dutch East Indies government's concern for the indigenous people for the conditions they were experiencing. But behind that, all the programs were still directed to the interests of the Netherlands itself (Dahlan, 2014). At that time, many Javanese people participated in the program, they were moved out of Java, one of them was to Sumatra Island. At that time, most people joined the program because they hoped to improve their lives by getting new land in the new place, but in reality, most of them were used

as contract labor. Although actually at the beginning of the 20<sup>th</sup> century, the term contract worker no longer appeared, but the contract worker system still mostly referred to work agreements during the *Koeli Ordonantie* era (Iswanto, 2020). Likewise with the contract labor who were brought in by the Dutch government to Tanah Gayo.

The arrival of contract labor, which was said to be part of the colonization program to Tanah Gayo, could not be separated from the need for labor in plantations, forestry, and road construction (Iswanto et al., 2020). Since 1905, the Dutch colonial government had intended to use the colonization program to bring the Javanese people to Tanah Gayo. However, these labors were not for plantations but for the opening of the Bireuen-Takengon highway. However, new workers were brought in in 1906 and 1907. The workers were then employed with Acehnese from Tangse, Acehnese from Bireuen, Chinese, and a small number of Gayo people to build the road. These workers were forced to work, sometimes because of the starvation, many workers died (Iswanto, 2021). Whereas before the 20<sup>th</sup> century, the forced worker system had been abolished but in reality, the system had not completely disappeared. Thus, it could be said that these workers did not come as workers but as forced workers.

The establishment of the merkus pine forest in Baleq Village in 1910 as a pilot and research complex became a new chapter in the history of plantation and forestry workers in Tanah Gayo. Actually, from 1910 to 1920, the Dutch did not need contract labor to work in the pine forest in Baleq village. This was because apart from being still in the research stage and not extensive. In the span of that year, it could also be said that there had been no resin or turpentine production process. However, because of the research results that came out in 1912, the Dutch Forestry Service felt the need to carry out maintenance on the pine forest complex in Baleq. Therefore, in early 1914, after the workers on the Bireuen – Takengon road project finished building the project, they were then transferred as laborers to the pine forest complex in Baleq. It was not known how the salary system they got, but at that time they were placed in huts and every day they were given the task of cleaning the bushes in the pine complex. Then in 1917, the Dutch Forestry Service proposed to the Dutch government to bring in Chinese workers from a labor supply company in Singapore to be employed in the pine forests in Baleq Village, but the proposal and plan were rejected by the Dutch government because they preferred local workers, especially Javanese people.

In this case, there were several factors that made the Dutch government not choose to bring in Chinese workers but preferred Javanese workers. These factors include: (1) because it was not in accordance with the colonization program plan which aimed to move Javanese people outside Java. The program can be used by making the Javanese people as workers in Tanah Gayo; (2) Javanese workers were easier to manage and to be forced than Chinese workers; (3) Javanese workers were more experienced in the plantation and forestry sector, because previously in Java itself plantations were opened earlier, in contrast to Chinese workers who were more experienced in development and trade; (4) Javanese workers were considered to have low education so it was difficult to escape the rules and carry out social movements or resistance; (5) the wages of Javanese workers were cheaper than those of Chinese workers; (6) Javanese workers were more easily deceived by promising high wages and housing, so that they would not have to be forced to participate; (7) Javanese workers had very little chance of escaping, apart from the distance between their place of work and their place of origin; and (8) the consideration of the economic depression also forced the Dutch to save their budget.

However, on the one hand, the considerations that made the Javanese people work certainly contradicted the colonial program which was part of ethical politics.

Thus, it could be said that the colonization program was only an excuse to be able to bring Javanese workers to Tanah Gayo. In general, Javanese people did not really know much about the location of Tanah Gayo, but because of the circumstances and economic pressure, they had no other choice. In the end, many people participated in the colonization program. In fact, the program would bind them with a work agreement that made them unable to let go and do much.

After the Dutch made these considerations, in 1920 for the first time Javanese contract labor were brought to Tanah Gayo. These contract labors were specifically brought in to work in plantations and forests. At that time, they were better known as Java Contracts or Java Colonization (PaEni, 2016). The term Javanese Contracts or Java Colonization is a designation made by the Gayo community. According to the Gayo people, the Javanese who came were workers who were contracted by the Dutch and because they had their own residential complex, it was called colonization. The arrival of Javanese contract labor was indeed quite slow when compared to other areas of Aceh. This was because the Dutch were only able to occupy Tanah Gayo in 1904 and the exploitation of the pine forest itself had only really begun in 1910 and commercial plantations were only in 1918 (Iswanto et al., 2020). The arrival of contract labor in 1920 coincided with the golden age of the Dutch East Indies government's economy. At that time the price and production of plantation, forest, and mining products increased very high. So that the problem of costs for the workers themselves was not an obstacle. Contract labor were brought in to work on the coffee, tea, quinine, patchouli, pine, and cotton plantations, although cotton was not very successful.



**Figure 6.** Barracks for mercusi pine workers in Baleq  
[Source: (KITLV Universitas Leiden, 1930b)]

Between 1920 and 1924, local and international market demand for resins and turpentine was increasing. The increasing demand was inseparable from the emergence of industries in the manufacture of batik, soap, paint, and so on. At that time, the price of resin and turpentine also increased. Therefore, in 1924 the Dutch brought in Javanese contract labor specifically to be employed in the merkus pine forests, both in the pine forest complex in Baleq Village and the pine complex in Laut Tawar Lake. In general, they were young unmarried workers who were estimated to be in large-scale numbers. Considering that, the workers who were brought in were not



only pine forest workers but also workers for plantations, such as the Blang Gele Coffee plantation (Wilhelmina Coffee Plantation), Pondok Baru coffee plantation, Silih Nara coffee plantation, Janarata tea plantation, and Redelong tea plantation. Not to mention the plantations of quinine, patchouli, vegetables, tobacco, fruits and cotton which were not mentioned much in the Dutch documents or reports. The selection of young workers certainly had its own reasons for the Dutch colonial. Besides their strength, they were stronger and did not have the burden of having to take care of children. At that time, these workers lived in barracks that were deliberately built by the Dutch. The barracks were built in a pine forest complex, especially for the pine forest complex in Baleq. Meanwhile, the workers of the pine forest complex in Laut Tawar Lake lived in the barracks built in Takengon City.

In 1925, the Dutch Forestry Service expanded the pine forest complex in five areas, including Lampahan, Ratawali, Burni Telong, Pante Raya, and Bidin. At that time, management and maintenance were carried out with more incentives in order to get even greater results (Walad, 1971). There were about a hundred workers employed in these pine forest areas (Jongejans, 1939). Once a week, they were assigned to clean the bushes that grew near the pine trunks to facilitate the tapping process. As for the daily tasks, they were assigned to take the sap and transport it to the factory. In addition, they were also assigned to plant pine seedlings in new areas such as the Isaq area and five previously designated areas. With the presence of these workers for the first time at the end of 1925, the *Caoutchouc Bedrijf* Lands factory was recorded to have produced 5 tons of resin. However, according to the Netherlands, this amount still could not meet market demand and on the other hand the price of resin and turpentine continued to rise. Therefore, apart from expanding its pine forest area, the Dutch also demanded that the workers worked even harder. Since then, the labor of contract labor began to be exploited. Sure enough, in 1926, the factory was able to finally produce 100 tons of resin and 26 tons of turpentine. This number was much higher than the previous year.

The expansion of the pine forest complex and other plantations still did not match the number of workers. Therefore, to meet the needs of labor in pine forests, the Dutch sometimes moved workers from coffee and tea plantations to pine forests (Iswanto et al., 2020). The transfer was carried out unilaterally without the consent of the workers. Even though, it was contrary to or not in accordance with the contract agreement and the workers felt that working in the pine forest was much more difficult than in the plantation. In addition, the pine forest itself was difficult to reach because it was located in the interior. But apart from feeling powerful, the Dutch also continued to look for ways to move the workers. For example, if there were workers who fought with their co-workers, they would be transferred to the pine forest complex. In 1927, the Dutch imposed working hours for the workers. They worked from 08.00 until around 15.00-16.00. Every day they would work in pine forests where generally on 1 hectare there were about 126 pine trees with an average trunk diameter of 51 cm and an average height of about 47.5 meters. Some young workers were employed in the factory. They were controlled by plantation inspectors (Iswanto, 2020; PaEni, 2016). In 1927, various efforts were made by the Dutch to increase the amount of resin and turpentine production. In addition to expanding the pine forest complex and manpower, the Dutch also implemented a system of increasing the number of wiretapping wounds at the base of the trunks of mature pine trees, which previously only had three to four wounds. This system was to increase the yield of sap and resin and turpentine. Sure enough, since 1927 the amount of latex production has increased and this is evidenced by the increasing amount of resin and turpentine production in the following years. The consequence of this system is that mature pine

trees die more quickly because of the massive sap that is released. So that in post-independence Indonesia, mature pine trees, which are called ancient forests, are rarely found. It is estimated that since then many neighborhoods around the pine forest have experienced landslides because many mature pine trees have died. In addition, the activities carried out in the pine forest continuously have certainly damaged the forest ecosystem, especially in the factory area.

From 1928 to 1932, it was a bleak period for the workers because they were affected by the global economic depression. In those years all plantation and forestry activities stopped. Thus, automatically they did not get wages, not infrequently the workers who did not meet the necessities of life had to make loans to the Dutch and Chinese traders. This then made it increasingly difficult for the workers to break away from the Dutch. After the economic depression ended, in 1933, the activity in plantations and forestry was active again. At that time the price of resin and turpentine continued to increase in the international market, especially in Europe. Although the amount of resin and turpentine production continued to increase, but the number of workers' wages had not been increased. Indeed, the amount of wages they receive was in accordance with their needs, but on the other hand, the amount of wages was not in accordance with the demands of work which were getting heavier and higher day by day. Especially since the introduction of the system for adding wiretapping wounds, which was increasingly burdensome for the workers. Even though the area of pine forest complex itself until the end of 1938 was recorded at 109,000 hectares (Iswanto, 2020). The heavy workload made some workers ask to return to Java. Unfortunately, they still could not return, because many of them were in debt with Chinese traders. Actually, the debt was deliberately designed by the Dutch by involving Chinese traders in gambling which was held every week in the coffee plantation complex. With this debt bond, the workers certainly could not return.



**Figure 7.** System adds tapping wound  
[Source: (Jongejans, 1939)]

From the beginning, there was a scene that was not found in the merkus pine forest, namely local workers. Indeed, since the opening of the pine forest complexes, the Dutch had never recruited local people as workers. It seems that the Dutch were reluctant to involve the local community because the work was quite heavy. If it was

forced, it could lead to unexpected social movements or resistance. In addition, the Dutch deliberately introduced new types of plants to local communities with the aim of making people forget that their *ulayat* lands and customary forests had actually been exploited (Iswanto, 2020). In terms of health facilities, the workers had not fully received health facilities. Those who lived in plantations were included in the rural part (rural hygiene work) and only got health education. In Takengon, there was only one health post and one Central Malaria Bureau. Workers affected by diseases such as malaria, leprosy, and smallpox would be separated from other workers. To reduce the number of infected, the Dutch would usually carry out counseling to villages and vaccinations to prevent transmission.

The year of 1938 marked the end of the history of exploitation of the merkus pine forest in Tanah Gayo. Since 1937, the Dutch East Indies government's economy had been shaken by the global economic crisis. However, the production of resin and turpentine continued until 1938. This situation was then exploited by Japan to invest in the Dutch East Indies (Indonesia) with the main aim of being able to enter and dominate Indonesia. Meanwhile, in parts of Europe, America and East Asia, the political situation was heating up. Finally on September 1, 1939, World War II began which made all plantation activities and the merkus pine forest completely stopped. At that time, the life of the workers was really very sad. The cessation of plantation and pine forest activities made them no longer get wages. Contracts that should not have expired but must expire. The wages they got previously were not enough to meet the needs of daily life, not infrequently they had to be in debt to Chinese traders. Apart from being in debt, the workers were also unable to return to the island of Java since the Dutch themselves were starting to get busy in dealing with world politics. In the end, most workers chose to live in Tanah Gayo and those who were called the first Javanese came to Tanah Gayo before Javanese transmigration during the New Order era (Iswanto, 2020).

#### 4. CONCLUSION

This paper shows the history of the merkusi pine forest management system carried out by the Dutch colonial government in Tanah Gayo, Aceh Province from 1904 to 1942. The forest management was part of the expansion of the western capitalist system in its colonies in carrying out the capitalist system, the Dutch colonial government by using its power of authority had been exploiting indiscriminately. As the main actor, the Dutch colonial government was an actor who benefited from the system but on the other hand harmed local communities, the environment, and contract workers in Java.

Since establishing its power, the Dutch colonial government had carried out the expansion of its capitalist system by taking land (forests) from local communities. The takeover of the forest is aimed at the exploitation of its non-timber forest product, namely merkusi pine resin, which was sold in local and national markets. Interestingly, although at that time there was a law on forest management adopted from the island of Java, it was never made in writing and was not in accordance with its implementation. For example, the implementation of territorialization which aims to separate forest areas from non-forest areas, but in reality, this regulation turned out to be a weapon for the Dutch colonial government and private capital owners to exercise their authority in controlling forests. Territorialization has created a political and economic forest. Since then, the pine merkusi forest, which previously mostly had status as part of *ulayat* and customary forest as well as functioned as a side livelihood for the community, turned to the Dutch colonial side and its existence began to disappear.

In addition to exploiting its natural resources, to launch the expansion of its capitalist system, the Dutch colonial side also exploited human resources, namely contract workers. These contract workers were specially imported by the Dutch colonials from Java to work in the pine merkusi forest complexes. Although at first the Dutch colonial government planned to bring in Chinese workers from a coolie-collecting company from Singapore, in the end the plan failed and was replaced by contract workers from Java. Actually, there are several reasons why the Dutch colonial government chose Javanese contract workers to Tanah Gayo, such as Javanese people being easier to manage, more experienced in forestry and plantations, low education so as to minimize the occurrence of social movements, lower wages, and distance from location which not allowed workers to escape. All of these reasons were then packaged in a reason as part of the emigration program (*kolonisatie*) which was part of an ethical political program. In addition, to attract the interest of the workers to participate in the program, the Dutch colonial party had made promises such as providing land, jobs, wages, and decent housing. Despite the fact that the workers never got the proper land and housing as promised. On the one hand, they were given jobs as laborers in the merkusi pine forest, but actually the work and wages were not comparable. Every day, they were forced to work in pine forest complexes. The workers found it difficult to escape, apart from being bound by a work agreement but also because they were in debt to Chinese merchants who were deliberately regulated by the Dutch colonial government. This phenomenon showed that there had been a structured semi-slavery of Javanese contract workers in Tanah Gayo.

The novelty of this article is that there is no separation between exploitation of natural resources and human resources, both of which go hand in hand and have been structured. Exploitation of natural resources such as land and pine merkus forest will not run without the exploitation of human resources, namely workers. In addition, exploitation of the merkusi pine forest and contract workers is a form of colonialism. By using their power to gain profit, the Dutch colonial government sacrificed other parties, namely the local community, the forest, the workers, and the sustainability of the forest ecosystem.

Massive collection of pine sap by adding tapping wounds to mature pine tree trunks and the establishment of a pine resin refining factory is a form of destruction of forest ecosystems. The technique of adding tapping wounds has caused many mature merkusi pine trees to die prematurely. Since then, the decline in the number of large adult merkusi pine trees has become increasingly difficult to find and this decline has made water absorption continue to decrease. The consequence of all this has allowed landslides to occur in several forest areas. Meanwhile, the establishment of the merkusi pine resin refining factory has also had a negative impact on the environment around the factory. The factory which operates almost every day has polluted the surrounding ecosystem.

**Author Contributions:** **Nurasiah:** Conceptual and draft writing; **Teuku Kusnafizal:** Editor (interpretation); **Muhammad Haikal:** Source collection (heuristic); **Zulfan:** source collection (heuristic); **Abdul Azis:** data collection (heuristic) and interpretation; and **Ramazan:** heuristic, interpretation, and historiography

**Competing Interests:** In this writing there is a difference of opinion between the authors. The difference is because the available sources are very limited, so that the authors in data collection sometimes have to take secondary data instead of primary data. But all that can be overcome by consulting with historical observers.

**Acknowledgments:** Thanks to the late Drs. Rusdi Sufi (Aceh historian) who has always motivated me to do this research, and for Prof. Dr. Wardo, M.Hum who has given motivation and

encouragement to the writer when he was studying at Sebelas Maret University (UNS). Because of them, we were motivated to carry out this research. Thanks to Syiah Kuala University.

## REFERENCES

- Andini, R., Melinda, V., Pardede, E., Yanti, L. A., Hmon, K., Moulana, R., & Indrioko, S. (2022). Morphological variation of Aceh Pinus (*Pinus merkusii*). *IOP Conference Series: Earth and Environmental Science*, *951*(1), 012091. <http://dx.doi.org/10.1088/1755-1315/951/1/012091>
- Asnah, H. H. A. (1996). *C. Snouck Hugronje: Gayo Masyarakat dan Kebudayaan Awal Abad ke-20*. Balai Pustaka.
- Awaluddin, S. (2016). *Nilai manfaat ekonomi tegakan pinus di desa bissoloro kecamatan bungaya kabupaten gowa* [Undergraduate thesis]. Universitas Muhammadiyah Makassar.
- Bankoff, G., & Boomgaard, P. (2007). Introduction: Natural Resources and the Shape of Asian History, 1500–2000. In Bankoff, G., Boomgaard, P. (Eds.), *A History of Natural Resources in Asia* (pp. 1–17). Palgrave Macmillan. [https://doi.org/10.1057/9780230607538\\_1](https://doi.org/10.1057/9780230607538_1)
- Beets, K. T. (1934). *Het Gajo-Land "Takengon"*. Amsterdam.
- Broersma, R. (1925). *Atjeh als Land voor Handel en Bedrijf*. Gebrs, Cohen.
- Budiono, R., Nugroho, B., & Nurrochmat, D. R. (2018). Dinamika Hegemoni Penguasaan Hutan di Indonesia. *Jurnal Analisis Kebijakan Kehutanan*, *15*(2), 113–126.
- Dahlan, M. H. (2014). Perpindahan Penduduk dalam Tiga Masa: Kolonisasi, Kokuminggakari, dan Transmigrasi di Provinsi Lampung (1905-1979). *Patanjala: Jurnal Penelitian Sejarah dan Budaya*, *6*(3), 335-348. <http://dx.doi.org/10.30959/patanjala.v6i3.164>
- Danthu, P., Razakamanarivo, H., Deville-Danthu, B., Fara, L. R., Le Roux, Y., & Penot, É. (2016). The short and forgotten history of rubber in Madagascar: The first controversy between biodiversity conservation and natural resource exploitation. *Bois et Forêts des Tropiques*, *328*(2), 27–43. <http://dx.doi.org/10.19182/bft2016.328.a31300>
- Darmawan, W., Nandika, D., Afaf, B. D. H., Rahayu, I., & Lumongga, D. (2018). Radial Variation in Selected Wood Properties of Indonesian *Merkusii* Pine. *Journal of the Korean Wood Science and Technology*, *46*(4), 323–337. <https://doi.org/10.5658/WOOD.2018.46.4.323>
- Gamin. (2019). *Resolusi Konflik Kawasan Hutan: Antara Peran Negara dan KPH*. Penerbit Deepublish (Grup Penerbitan CV Budi Utama).
- Garraghan, G. J. (1957). *A Guide to Historical Method*. Fordam University Press.
- Gayo, M. H. (1983). *Perang Gayo Alas Melawan Kolonial Belanda*. Balai Pustaka.
- Ginkel, A. T. van. (1917). *De Emigratie en kolonisatieproeven der Indische Regeering dalam KoloniaalTijdschrift*.
- Gonggrijp, G. (1928). *Schets Eener Economische Geschiedenis van Nederlandsch-Indie*. De Erven F. Bohn.
- Gonggrijp, J. R. C. (1944). *Overzicht van de economische ontwikkeling van Atjeh sedert de pacificatie (tijdperk 1923-1938)*. Van Stockum.
- Grove, R. H. (1995). *Green imperialism: colonial expansion, tropical island Edens and the origins of environmentalism, 1600-1860*. Cambridge University Press.
- Hardjono, J. (1982). *Transmigrasi dari Kolonisasi Sampai Swakarsa*. Gramedia.
- Hartono, M. (2012). Realisasi Politik Etis Di Bojonegoro Pada Awal Abad XX: Kajian Sosial Ekonomi. *Mozaik: Kajian Ilmu Sejarah*, *6*(1). <https://doi.org/10.21831/moz.v6i1.1536>

- Ikramatoun, Khairulyadi, & Riduan. (2020). Pemberdayaan Masyarakat melalui Pengelolaan Hutan Pinus di Kecamatan Linge Aceh Tengah. *Jurnal Sosiologi Agama Indonesia (JSIA)*, 1(3), 238–249. <https://doi.org/10.22373/jsai.v1i3.804>
- Istomo, Kusmana, C., & Roswandi, S. (2000). Kajian Faktor Lingkungan Fisik Pinus merkusii Jungh et de Vries Ras Kerinci di Resort KSDA Bukit Tapan, Kawasan Taman Nasional Kerinci Seblat, Jambi. *Media Konservasi*, VII(1), 9–15.
- Iswanto, S. (2020). *Perkebunan Kopi di Tanah Gayo pada Era Kolonial Belanda (1904-1942)*. Banda Aceh.
- Iswanto, S. (2021). *Sejarah Pembangunan Jalan Raya Bireuen - Takengon (Gajoweg), 1905 -1914*. Banda Aceh.
- Iswanto, S., Kusnafizal, T., Kamza, M., & Haikal, M. (2022). Minangkabau migration to Tanah Gayo, Aceh: History, Factors, and Impacts. *ETNOSIA: Jurnal Etnografi Indonesia*, 7(1), 29–41. <https://doi.org/10.31947/etnosia.v7i1.19610>
- Iswanto, S., Nurasih, N., & Kesuma, T. B. (2021). Dutch Colonial Infrastructure Development in Takengon, 1904-1942. *Jurnal Sejarah Citra Lekha*, 6(1), 15–25. <https://doi.org/10.14710/jscl.v6i1.29880>
- Iswanto, S., Sufi, R., & Abdullah, T. (2012). *Perkembangan Kerawang Gayo di Aceh Tengah (1904-2012)*. Universitas Syiah Kuala.
- Iswanto, S., Zulfan, Z., & Suryana, N. (2020). Gayo Highland Takengon from 1904 To 1942: A Historical Analysis of Coffee Plantations at the Era of Dutch Colonialism. *Paramita: Historical Studies Journal*, 30(1), 69–82. <http://dx.doi.org/10.15294/paramita.v30i1.21637>
- Jongejans, J. (1939). *Land en volk van Atjeh Vroeger en nu*. (H. Colijn, Ed.). N.V Baarn.
- Kalima, T., Sutrisna, U., & Harahap, R. (2005). Studi sebaran alam Pinus merkusii Jungh et de Vriese Tapanuli, Sumatera Utara dengan metode cluster dan pemetaan digital. *Jurnal Penelitian Hutan dan Konservasi Alam*, 2(5), 497–505. <https://doi.org/10.20886/JPHKA.2005.2.5.497-505>
- Khalisuddin, Setyantoro, A. S., Gayosia, A. P., Bathin, W. R., & As, N. B. (2012). *Kopi dan Kehidupan Sosial Budaya Masyarakat Gayo*. (Jamhuri, Ed.). BPNB Aceh.
- KITLV. (2005). *Gouverneur-generaal A.C.D. de Graeff en gevolg op de gouvernements-terpentijnonderneming bij Takegeun*. Leiden. Retrieved from <http://hdl.handle.net/1887.1/item:905153>
- KITLV Universitas Leiden. (1928). Hars- en terpentijnfabriek op de gouvernements-terpentijnonderneming bij Takegeun. *Leiden University Libraries Digital Collections*. Retrieved from <http://hdl.handle.net/1887.1/item:902471>
- KITLV Universitas Leiden. (1930a). Woonhuis op de gouvernementsterpentijnonderneming Baleq, Takegeun, Atjeh. *Leiden University Libraries Digital Collections*.
- KITLV Universitas Leiden. (1930b). *Koeliepondoks op de gouvernementsterpentijnonderneming Baleq waar 't hars uit de vele dennen verwerkt wordt, Takegeun, Sumatra*.
- Koentjaraningrat. (1984). *Kebudayaan Jawa*. PN Balai Pustaka.
- Kuntowijoyo. (1999). *Pengantar Ilmu Sejarah*. Bentang.
- Kuspradini, H., Rosamah, E., Sukaton, E., Arung, E. T., & Kusuma, I. W. (2016). *Pengenalan Getah Gum - Lateks - Resin*. Mulawarman University Press.
- Lauta, Y. A., Kalo, S., Runtung, & Ikhsan, E. (2016). Perlindungan Hak Atas Tanah Ulayat Masyarakat Adat Gayo di Kabupaten Bener Meriah. *USU Law Journal*, 4(3), 185–197.
- Madjid, M. D. (2014). *Catatan Pinggir Sejarah Aceh: Perdagangan, Diplomasi, dan Perjuangan Rakyat* (2nd ed.). Yayasan Pustaka Obor Indonesia.
- Melalatoa, M. J. (1982). *Kebudayaan Gayo*. PN Balai Pustaka.

- Melalatoa, M. J. (2003). *Gayo: Etnografi Budaya Malu*. Yayasan Budaya Tradisional dan Pariwisata.
- Nurjaya, I. N. (2005). Sejarah Hukum Pengelolaan Hutan di Indonesia. *Jurisprudence*, 2(1), 35–55. <http://hdl.handle.net/11617/1036>
- PaEni, M. (2016). *Riak di Laut Tawar: Tradisi dan Perubahan Sosial di Gayo Aceh Tengah*. Ombak.
- Pranoto, S. W. (2010). *Teori & Metodologi Sejarah*. Graha Ilmu.
- Putra, P. (2019). Praktik Informasi Sebagai Upaya Propaganda Program Kolonisasi pada Masa Hindia Belanda. *Bibliotech: Jurnal Ilmu Perpustakaan dan Informasi*, 4(1), 19–34. <https://doi.org/10.33476/bibliotech.v4i1.923>
- Richard, C., & Amit, P. (2009). *Exploiting Natural Resources: Growth Instability and Conflict in the Middle*. The Henry L. Stimson Center.
- Richardson, D. M., Rundel, P. W., Jackson, S. T., Teskey, R. O., Aronson, J., Bytnerowicz, A., Wingfield, M. J., et al. (2007). Human Impacts in Pine Forests: Past, Present, and Future. *Annual Review of Ecology, Evolution, and Systematics*, 38(1), 275–297. <https://doi.org/10.1146/annurev.ecolsys.38.091206.095650>
- Rusdi, P. (2011). *Pacu Kude: Permainan Tradisional di Dataran Tinggi Gayo*. Balai Pelestarian Sejarah dan Nilai Tradisional.
- Safitri, M. A., & Moeliono, T. (2010). *Hukum Agraria dan Masyarakat di Indonesia*. HuMa.
- Sallata, M. K. (2013). Pinus (Pinus Merkusii Jungh et de Vriese) dan Keberadaannya di Kabupaten Tana Toraja, Sulawesi Selatan. *Info Teknis EBONI*, 10(2), 85–98. <https://doi.org/10.20886/buleboni.5013>
- Senjaya, Y., & Surakusumah, W. (2007). Potensi Ekstrak Daun Pinus Sebagai Bioherbisida Penghambat Perkecambah Echinochloa colonum L. Dan Amaranthus viridis. *Jurnal Perennial*, 4(1), 1–5. <https://doi.org/10.24259/perennial.v4i1.175>
- Stroomberg, J. (2018). *Hindia Belanda 1930*. (B. Pradana, Ed.) (Diterjemah.). IRCiSoD.
- Sufi, R. (2001). *Sejarah Perkeretaapian di Aceh*. Balai Kajian Sejarah dan Nilai Tradisional.
- Sufi, R., & Wibowo, A. B. (2013). *Gayo: Sejarah dan Legenda*. Badan Arsip dan Perpustakaan Aceh.
- Sukirno. (2018). *Politik Hukum Pengakuan Hak Ulayat* (1.). Prenadamedia Group.
- Sumargono. (2021). *Metodologi Penelitian Sejarah*. (Andriyanto, Ed.). Penerbit Lakeisha.
- Susilo, A., & Isbandiyah, I. (2018). Politik Etis dan Pengaruhnya Bagi Lahirnya Pergerakan Bangsa Indonesia. *HISTORIA Jurnal Program Studi Pendidikan Sejarah*, 6(2), 403–416. <http://dx.doi.org/10.24127/hj.v6i2.1531>
- Susmiyati, H. R. (2020). *Hukum Sumber Daya Alam: Menelisik Utilitas Tambang Batu Bara di Kawasan Hutan* (1.). PT Cita Intrans Selaras.
- Tomaskovic-Devey, D., & Avent-Holt, D. (2019). Exploitation. *Relational Inequalities* (pp. 107–133). Oxford University Press.
- Vollenhoven, C. Van. (2013). *Orang Indonesia dan Tanahnya*. (U. Djalins & A. Mariana, Eds.). Perkumpulan HuMa.
- Walad, Y. (1971). *Monograf Daerah Kabupaten Atjeh Tengah*. Universitas Syiah Kuala.
- Wasino, & Hartatik, E. S. (2017). *Dari Industri Gula hingga Batik Pekalongan: Sejarah Sosial Ekonomi Pantai Utara Jawa pada Masa Kolonial Belanda*. Magnum Pustaka Utama.
- Wechel, A. te. (1931). *Oorspronkelijke Bijdragen, De Dennenbosschen Van Noord-Sumatra (Nederlandsch Boschbouw Tijdschrift Orgu Zl van de Nederlandsche*

*Boschbouwvereniging*) 4e Jaargang No. 7.

- Wijayanto, A., Wardhana, T. W., Nurmadina, & Darwitono. (2019). Produktivitas dan Perbandingan Produksi Resin Pinus Merkusii Jungh Et De Vriese terhadap Net Progress Schedule (NPS) yang Ditetapkan Perhutani. *Silva Tropika*, 3(2), 199–205.
- Winter, P. J. van. (1931). Het aftappen van hars in de Pinus Mercusii voor de terpentijnproductie te Balek in Atjeh. *KITLV Leiden University Libraries Digital Collections*. Retrieved from <http://hdl.handle.net/1887.1/item:766599>
- Zuhdi, S. (2002). *Cilacap (1830-1942): Bangkit dan Runtuhnya Suatu Pelabuhan di Jawa*. Kepustakaan Populer Gramedia.