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Disaster, Involution, and Dependency: A Socio-Economic Analysis of the 1861 Flood in the Residency of Bagelen

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Abstract: This study investigates the catastrophic flood disaster that struck the Residency of Bagelen in February 1861, conceptualizing it not merely as a natural phenomenon but as a consequence of inherent structural socio-economic vulnerabilities under colonialism. By applying Clifford Geertz's theoretical framework of Agricultural Involution and Raúl Prebisch's Dependency theory, this research aims to thoroughly analyze the multidimensional impacts of the tragedy. The methodology used is historical analytical, drawing upon primary sources such as the *Koloniaal Verslag* (Colonial Report) and colonial newspapers, alongside secondary sources like academic journals. The findings indicate that Bagelen sustained the most severe losses compared to other residencies. These losses stemmed from agricultural intensification during the *Cultuurstelsel* (Cultivation System), which fostered agricultural involution, thereby creating a precarious socio-economic system highly susceptible to external shocks, such as a disaster. Ironically, the Colonial Government's response with involving massive financial allocations and spatial restructuring functioned primarily as a strategy of exploitation. This measure, rather than building local self-sufficiency, reproduced and reinforced the existing system of economic dependency. The remarkable social resilience demonstrated by local communities in their self-recovery, a characteristic of societies affected by agricultural involution, was ultimately exploited by the colonial power to ensure continued exploitation and the flow of profits, thereby maintaining Bagelen in colonial dependency. This confirms that the scale of destruction and the impact of the 1861 disaster were the result of a systemic failure of the colonial socio-economic order.

Keywords: Bagelen; dependency; disaster; involution; socio-economic

Abstrak: Penelitian ini mengkaji bencana banjir dahsyat yang melanda Karesidenan Bagelen pada Februari 1861, mengkonseptualisasikannya bukan hanya sebagai fenomena alam, melainkan sebagai konsekuensi dari kerentanan sosial-ekonomi struktural yang melekat di bawah kolonialisme. Dengan menerapkan kerangka teoretis Involusi Pertanian Clifford Geertz dan teori Ketergantungan Raúl Prebisch, penelitian ini bertujuan menganalisis secara menyeluruh dampak multidimensi tragedi tersebut. Metodologi yang digunakan adalah historis analitis, bersandar pada sumber-sumber primer seperti *Koloniaal Verslag* (Laporan Kolonial) dan surat kabar kolonial serta sumber sekunder seperti jurnal-jurnal akademik. Hasil penelitian menunjukkan bahwa Bagelen menanggung kerugian paling parah dibandingkan karesidenan lain. Kerugian ini berakar dari intensifikasi pertanian selama *Cultuurstelsel* (Sistem Tanam Paksa) yang mendorong involusi pertanian sehingga menciptakan sistem sosial-ekonomi yang rapuh dan sangat rentan terhadap guncangan eksternal seperti bencana. Ironisnya, respons Pemerintah Kolonial yang memberikan alokasi dana masif dan restrukturisasi spasial hanya berfungsi sebagai strategi eksploitasi. Langkah ini, alih-alih membangun kemandirian lokal, justru mereproduksi dan memperkuat sistem ketergantungan ekonomi yang sudah ada. Ketahanan sosial luar biasa yang ditunjukkan oleh masyarakat lokal dalam pemulihan mandiri sebagai ciri masyarakat yang terdampak involusi

pertanian pada akhirnya dimanfaatkan oleh kekuasaan kolonial untuk memastikan berlanjutnya eksploitasi dan aliran keuntungan demi tetap mempertahankan Bagelen dalam ketergantungan kolonial. Hal ini menegaskan bahwa skala kerusakan dan dampak bencana 1861 merupakan akibat dari kegagalan sistemik tatanan sosial-ekonomi kolonial.

Kata Kunci: Bagelen; bencana; nnvolusi; ketergantungan; sosial-ekonomi

Introduction

Indonesia is a region inherently prone to disasters due to its geographical and geological conditions. Situated at the convergence of tectonic plates and possessing a complex hydrological system, the country is intrinsically vulnerable to various extreme natural events, including hydro-meteorological disasters such as floods and landslides (Badan Nasional Penanggulangan Bencana, 2025). According to Law No. 24 of 2007, a disaster is defined as an event or series of events that threaten and disrupt the lives and livelihoods of the community (Tanoyo & Sari, 2022).

Despite this, studies on the history of disasters in Indonesia, particularly those that occurred before the 20th century, remain minimal and fragmented. Our understanding of how past societies responded to and adapted to disasters within the political and social framework shaped by colonial power is still not comprehensive. This lack of attention has resulted in the loss of valuable information about local resilience, social responses, and the long-term economic impacts shaped by the dynamics of historical disasters.

One of the largest hydro-meteorological events that has eluded proportional academic scrutiny is the great flood and landslide that struck the southern region of Java on February 21–23, 1861 (Quack, 1862; “Watersnood,” 1861). This event, known as the *Watersnood* in colonial records, was confirmed by newspapers such as the Javasche Courant and Java Bode to have occurred simultaneously in five major residencies: Surakarta, Yogyakarta, Kedu, Banyumas, and Bagelen (“Binnenlandscge Berigten,” 1861; “Watersnood,” 1861; “Watersnood Op Java,” 1861). This disaster was triggered by the overflowing of major rivers, including the Bengawan Solo, Serayu, Progo, and Bogowonto, causing widespread physical destruction of settlements, rice fields, and vital infrastructure. The flood also resulted in significant loss of property and life (“Batavia,” 1861).

Ironically, the immense impact of the disaster did not make the 1861 event well-remembered by the inhabitants across the affected regions. The narrative of this disaster tends to be localized. The people of Banyumas, for example, consider this event to have occurred exclusively in their region, making it a collective memory in the folk tale *Blabur Banyumas* (Oemarmadi & Poerbosewojo, 1964). Meanwhile, in Surakarta, the event is commemorated by "markers" indicating the flood's water level, installed at the Vastenburg Fort. This localization of the narrative implicitly diminishes the disaster's scale and obscures its widespread impact on other regions, especially the Residency of Bagelen.

Colonial data explicitly shows that the Residency of Bagelen was the area that suffered the most severe losses. The official *Koloniaal Verslag* of 1861 recorded Bagelen's total losses at 681,271.63 guilders, far surpassing its neighboring residencies (Putte, 1864). This damage was also structural and agrarian, with agricultural land damage being more than four times greater than the losses in Banyumas (Putte, 1864). These enormous losses indicate that Bagelen was the epicenter of a devastation that has not been adequately explored in disaster historiography.

Studies concerning the 19th century have not touched upon the 1861 disaster in the Bagelen region. Most existing studies have only focused on the socio-economics of the Cultuurstelsel and its relation to the Java War. The study by Ittihadiyah in 2012, titled *Bagelen Pasca Perang Jawa (1830-1950): Dinamika Sosial Politik Dan Ekonomi Di Bekas Wilayah "Negaragung" Kasultanan Mataram Islam (Vorstenlanden)*, focuses more on the socio-economic dynamics of Bagelen within the context of colonial administration and social-cultural changes after the Java War (Ittihadiyah, 2012). Another study by Dipradja & Sampurno in 2023, titled *Perkebunan Indigo di Karesidenan Bagelen Pada Periode Sistem Budidaya (Cultuurstelsel) 1830-1870*, only highlights labor relations on European-owned plantations within the context of colonial capitalism (Dipradja & Sampurno, 2023). Additionally, the visualization of the tragedy through Raden Saleh's painting Watersnood op Midden Java only shows the human side and fails to explain the specific impact of the disaster on the social and economic structures in Bagelen (Gunawan, 2020).

Based on the anomaly of historical data and the neglect of existing narratives, this research attempts to analyze the true causes of the immense losses in Bagelen. So far, natural factors have tended to be considered the sole variable determining the escalation of losses. This view often overlooks the fact that a disaster is truly a manifestation of pre-existing structural vulnerabilities within society (Cutter & Hewitt, 1984). Structural vulnerability refers to social, economic, and political conditions that make a population more susceptible to the negative impacts of a natural hazard. Instead of focusing only on rainfall, this study shifts attention to the often-overlooked non-natural factors.

The non-natural factors will be analyzed using theories from the social and economic fields. The first is Clifford Geertz's perspective on agricultural involution. The 1861 flood in Bagelen becomes a point of validation for this theory. The Javanese agricultural system in Bagelen, which experienced an increase in labor intensity to accommodate the population, became very fragile and vulnerable to external shocks like floods. The massive losses of agricultural land indicate a deep stagnation of productivity. This phenomenon aligns with Geertz's idea that within the colonial system, agriculture did not develop horizontally but rather inwards through an inefficient labor intensification (Clifford Geertz, 1976).

Secondly, the Dependency Theory developed by Raúl Prebisch. Dependency is defined as a situation where a country's economy is conditioned by the development and expansion of another dominant country's economy (Dos Santos, 1970). The 1861 flood in Bagelen clearly illustrates how "colonial dependency" works. The losses suffered by the local population also paralyzed the colonial economic engine. The massive amount of aid released by the government, namely 113,000 guilders plus a special fund of 100,000 guilders for rice seeds, shows that this large financial intervention was an effort to maintain the production of export commodities. This response highlights that Bagelen was vulnerable because of its function in the global exploitative system, not because of its internal needs.

Specifically, this research seeks to answer how the great flood of 1861 affected the agrarian structure and socio-economic effect, the responses and adaptations of the Bagelen community to the disaster, the dynamics of social resilience recognized by the colonial authorities, and the structural vulnerability created by the colonial system viewed through the lens of agricultural involution and economic dependency. Primary sources such as colonial newspaper archives and Dutch East Indies government reports will be used to reconstruct and interpret the disaster's impact in Bagelen. The results of this study are expected not only to fill a historiographical gap but also to provide a richer understanding of the complex interaction between disaster, colonialism, and local resilience in Indonesia. It is hoped that this study can

serve as a foundation for the development of modern disaster mitigation strategies based on historical, social, and economic insights.

Research Methods

This study fully adopts the historical research method. The entire research process was conducted through four main, integrated stages: heuristics, verification, interpretation, and historiography (Sjamsudin, 2016). In the heuristic phase, the search for and collection of historical data were carried out from various sources, both primary and secondary. The primary sources that formed the main foundation included archives of colonial newspapers published in 1861, such as the *Java Bode, Javasche Courant*, and other Dutch newspapers. Qualitative data from these media sources were significantly reinforced by official colonial government reports, including the *Koloniaal Verslag 1861* by F. van de Putte and *Gedenkboek van den Watersnood* in 1861 by J. Quack, which present quantitative data on material losses, casualties, and financial aid allocation. Once the sources were collected, the research moved to the source criticism stage, a vital step to ensure the accuracy and validity of the findings. This stage included external criticism to verify the authenticity of the documents, followed by internal criticism to evaluate the content and context of the information they contained. Given the dominance of sources originating from the perspective of the Dutch colonial government, intensive critical reading was conducted to identify and analyze potential colonial bias in the presentation of loss data and narratives of community response. This criticism served as the main filter for selecting facts that could be scientifically accounted for.

The third stage, interpretation, involved a deep interpretation of the data that had passed the criticism test to construct a coherent narrative about the social and economic impacts of the disaster. In this process, the study applied a social science approach to history as conceptualized by Sartono Kartodirdjo (2017), which allows the analysis of the disaster's impact to be viewed not just as physical destruction, but as an event that interacted complexly with social, economic, and colonial power structures. Specifically, this interpretation stage strictly correlated the findings with two main theoretical frameworks. First, Clifford Geertz's Theory of Agricultural Involution was used to interpret how the great flood of 1861 manifested the structural fragility of Java's agricultural system under the Cultuurstelsel. Second, the Theory of Economic Dependency was also applied to analyze the economic impacts and the response of the colonial government. This analysis transformed the flood from a mere natural event into a catalyst that clarified how economic dependency operates in a colonial context. The final stage, historiography, is the writing phase that presents a complete historical narrative based on the synthesis of data and analysis, while upholding scientific objectivity and adhering to the principles of rigorous historical methodology.

Research Result

Geographic and Socio-Ekonomic Bagelen

Bagelen was a "Negaragung" territory of the Mataram Sultanate, which administratively came under the direct control of the Dutch East Indies Government on September 27, 1830 (Ittihadiyah, 2012). Geographically, the Residency of Bagelen is located between 109°12′ and 110°11′ East Longitude and 7° and 7°57′ South Latitude. The region stretches along the southern coast of Central Java, flanked by three mountain ranges—Kendeng, Kelir, and Karangbolong—with clear boundaries with the Pekalongan Residency to the north, Semarang and Kedu to the northeast, Kedu and Yogyakarta to the east, the Indian Ocean to the south,

and Banyumas and Tegal to the west and northwest. The residency's capital, Purworejo, is located at coordinates 7°42′30″ SL and 110°3′ EL (Veth, 1861).

The region exhibited a striking topographical dualism. On one hand, Bagelen was renowned as an agrarian area possessing some of the richest and most fertile land in Java (Veth, 1861). However, on the other hand, Bagelen was naturally vulnerable to hydrological risks. The region's hydrographic system was characterized by numerous small rivers flowing from the north, converging to form large swamps in the lowlands. Major rivers that drain water, primarily toward the Bogowonto, include the Bogowonto, Lerang, Jali, Gebang, Lokulo, Bantar, Cincing Guling, and Jetis. The lowland topography, comprising large swamp areas such as Rawa Wawar (*Groote Rawa*) and Rawa Tambak Baya, made it highly susceptible to flooding. This vulnerability was exacerbated by the presence of Urut Sewu, a long chain of villages along the southern coast that acted as a separating embankment between the swamp areas and the sea (Ittihadiyah, 2012).

The change in Bagelen's status from a Mataram *mancanegara* (outer region) to a Residency under the direct control of the colonial government in 1830 marked the starting point for the implementation of the Cultivation System (*Cultuurstelsel*). In line with the colonial bureaucratic reorganization efforts, the *Reglement op het Beleid der Regering van Nederlandsch-Indië* was issued in *Staatsblad* No. 2/1855, regulating the governing system based on the principle of decentralization (Ittihadiyah, 2012). This reorganization led to rapid structural changes. The region, originally divided into four administrative districts, was restructured into five *afdeelingen*, six *kabupaten* (regencies), and 23 districts, encompassing 2,628 villages (Dutch East Indies, 1870). The *Kabupaten* of Kutoarjo was designated as a separate territory from the *Afdeeling* of Purworejo. The addition of new officials, such as Assistant Residents and *Controleurs*, aimed to intensify surveillance over the native population during the implementation of the Cultivation System, coinciding with rapid population growth viewed as a potential resource. Nevertheless, at the local governance level, the inherited Mataram patron-client system remained operational. Native officials, such as *Bupati* (Regents) and Village Heads, wielded strong social prestige and played a crucial role as intermediaries in collecting taxes or agricultural produce (Ittihadiyah, 2012).

The economy of the Bagelen Residency in 1855 was predominantly supported by a massive agrarian sector, characterized by a dualistic production model under the mechanism of the Cultuurstelsel (Cultivation System). The land ownership structure showed an average allocation of approximately one and a half bouw (approx. 1.06 hectares) of wet rice fields (sawah) per household, with a total of 100,810 farming families managing around 157,466 bouw of sawah. A portion of this land, namely 10,619 bouw of sawah, was specifically allocated for Government Crops, signifying a significant colonial intervention in the allocation of primary resources. Nevertheless, the population successfully maintained a food self-sufficiency function, demonstrated by a rice harvest of 1,952,834 pikul (approx. 118,500 metric tons) for their own needs in 1855, in addition to owning 1,659,281 coconut trees (Veth, 1861).

A key characteristic within the framework of labor distribution was the disparity in compulsory workload and financial compensation among export commodities. The cultivation of indigo (nila) involved the largest number of farming households, with 50,249 families, making it the commodity with the most extensive compulsory workload. However, the compensation received by indigo farmers was the lowest, averaging only 6.32 guilders per household. Conversely, coffee cultivation involved fewer households, with 32,502 families, but generated a total of 521,038.70 guilders and provided the highest average income per family, at 16.03 guilders. This analysis confirms that the strategic value of a commodity to the

Colonial Government was not linearly correlated with the compensation received by the indigenous labor force (Veth, 1861).

Alongside the compulsory system, Bagelen also operated a voluntary sector, where tea and cinnamon commodities were managed by freelance workers or boedjangs. This mechanism allowed the Government to produce high-value commodities without imposing forced allocation of sawah land, complementing the extractive system through the allocation of contract labor. Additional economic infrastructure included a vital livestock sector, with 86,040 water buffaloes, 46,139 cattle, and 12,499 horses, the management of 365,500 teak trees, and the collection of swiftlet nests at Karangbolong Cliff. Uniquely, the Bagelen economic system was entirely under state control, demonstrated by the absence of recorded European private agricultural companies or mining activities in the data for that year (Veth, 1861).

Demographic data for Bagelen in the mid-19th century show significant population growth. In 1855, the total population was recorded at 629,074 inhabitants, consisting of 343 Europeans, 1,581 Chinese, 48 other Foreign Orientals, and the rest being the native population (Veth, 1861). This number increased to a total of 738,056 inhabitants in the *Bevolking op Java en Madoera* (Population Status of Java and Madura) report in 1861, detailing 407 Europeans, 1,773 Chinese, 65 other Foreign Orientals, and 735,790 Natives (Putte, 1864). This data indicates an increase of approximately 109,000 inhabitants in just six years, a growth rate far exceeding the estimated average of 2% per decade (Syahbuddin, 2018).

Based on the publication *De Bevolkingsdichtheid Van Java en Madura Op Het Einde Van 1864* (The Population Density of Java and Madura at the End of 1864), the Residency of Bagelen was identified as the region with the second-highest population density in Java and Madura, trailing only the Residency of Jepara. Historical data underscores a significant demographic increase during the *Cultuurstelsel* (Forced Cultivation System) period. This increase is evident from the surge in population density, which started at 6,575 residents per square mile in 1830 and rose to 10,637 residents per square mile in 1845. The surge continued until it reached 12,546 residents per square mile in 1860 (Bleeker, 1867). This substantial rise indicates a significant correlation between the population growth in Bagelen and the intensification of the agricultural and plantation system, particularly for the Indigo and Coffee commodities, which were massively developed in the area.

Chronology of the Flood and the Scale of Destruction

The great flood that struck the Bagelen Residency in February 1861 was one of the most devastating and widely consequential natural disasters ever recorded in the history of the Netherlands Indies during the 19th century (Putte, 1864; Quack, 1862). This event transcended a mere meteorological record, becoming a socio-economic catastrophe covered for months in the Indies-Dutch newspapers ("Bijvoegsel Bataviaasch Handelsblad," 1861; "Binnenlandsche Berigten," 1861; "De Overstrooming Op Java," 1861; "Nederlandsch Indie," 1861; "Watersnood Op Java," 1861). The tragedy began with massive heavy rainfall starting February 19, 1861, peaking with a cyclonic storm accompanied by strong winds on February 21, 1861 ("Binnenlandscge Berigten," 1861; "Watersnood," 1861). A testimony from a retired *Bupati* of Purworejo mentioned that the wind blew like a cyclone from the northeast to the north and west, toppling many large trees ("Batavia," 1861). The peak of the disaster occurred when the region's main rivers overflowed extremely, rising up to 25 feet (approximately 7.6 meters) in a matter of hours ("Binnenlandsche Berigten," 1861). This

powerful force changed the landscape of Bagelen, carrying heavy materials like logs and scrub that destroyed everything in their path (“Batavia,” 1861b).

The immediate impact of the flood was severe and widespread, claiming lives and causing massive infrastructure destruction across the entire residency. Districts such as Kutoarjo, Prembun, and Kebumen were reported to have suffered severe damage, with Kutoarjo even described as "virtually erased from the face of the earth" (“Binnenlandscge Berigten,” 1861; Quack, 1862). Buildings made of bamboo and wood were completely swept away, while stone structures, like the Auditor's and Vice-Regent's houses, although not collapsing, sustained heavy damage. In Purworejo, strong winds damaged roads and uprooted large tamarind trees (“Batavia,” 1861).

The death toll was appalling. A total of 1,558 people were reported dead in Bagelen, including 819 adults, a number significantly higher than the casualties in other residencies (Putte, 1864). Data from colonial newspapers detail the scale of the tragedy. In the Loano district, over 200 people died, while in South Bagelen, 500 were victims (“De Overstrooming Op Java,” 1861; Loudon, 1861). Even local leaders, who were supposed to protect the community, were not spared. Many village heads and native officials lost family members, a fact illustrating the widespread nature of the destruction (“Batavia,” 1861).

In the infrastructure sector, total paralysis occurred. In South Bagelen, six major bridges were destroyed, including two vital bridges on the main Post Road below Purworejo. In the Ledok district, nearly all bridges were damaged or swept away, leaving only one usable (Loudon, 1861). This damage was compounded by breached embankments and damaged roads between the Kali Gebang and Kali Jali (“Batavia,” 1861). Furthermore, the telegraph line connecting Kutoarjo and Magelang was severed at five points due to being buried in mud, cutting off official communication and slowing inter-regional coordination in disaster management (“De Overstrooming Op Java,” 1861). This disruption in mobility exacerbated the isolation of remote villages and hindered aid distribution, demonstrating that the natural disaster was an event inherently linked to the failure of the colonial logistics and communication system.

The 1861 flood delivered a "heavy blow" to the economic foundations of Bagelen, which had been controlled by colonialism. The *Koloniaal Verslag* 1861 reported financial losses amounting to 681,271.63 guilders, making it the residency with the highest losses among all affected regions. The agricultural sector, the backbone of the economy, suffered total devastation. A total of 31,834 hectares of rice fields and secondary crops in Bagelen were submerged under one to three meters of mud and sand. This damage was four times greater than that experienced by the Banyumas Residency, indicating the severity of the disaster's impact in Bagelen (Putte, 1864).

Vital export commodities like indigo were also affected, with thousands of hectares of fields destroyed and harvests delayed (Putte, 1864). The widespread destruction of the irrigation system became a critical post-flood issue, where nearly all water channels for rice field irrigation were destroyed by the swift current and mud material (Wijck, 1865). In the Ambal district, the flood destroyed 15,000 rice stalks, disrupting the next planting process in May (Loudon, 1861). South of the Post Road, the land condition, submerged by water from various directions, became a serious problem. Rawa Wawar, the only waterway to the sea through Kali Lerang, was unable to accommodate and drain water from the Jali, Gebang, Kedungtawon, and Bener rivers, becoming a major obstacle in the drainage system, especially for villages in the southern region. Consequently, rice fields along the edge of the swamp, covering approximately 8,000 plots, were destroyed. Many rice field irrigation channels were

also damaged. Thousands of agricultural lands were submerged in mud (Quack, 1862; Wijck, 1865).

The flood also caused the loss of production capital and valuable assets. 10,141 houses collapsed or were washed away, most of which were made of bamboo and wood. A total of 848 buffaloes, 1,090 cows, and 83 horses drowned or went missing. 16,976 rice fields and 2,170 indigo fields were flooded, and their crops were damaged ("Batavia," 1861). Over two million trees were lost, and regular annual planting was delayed due to the disaster (Putte, 1864). Approximately 50,000 people lost all their belongings, farming tools, and stored food supplies (Wijck, 1865).

Involution, Dependency, and the Response of the Dutch Colonial Government

The massive intervention of the colonial government in the agricultural sector during the forced cultivation period led tens of thousands of peasant families to allocate their labor and land for colonial economic interests. The continuous seven-month supervision required for indigo cultivation forced men to abandon their food fields, often leaving the food crops unmanaged. This extraction process was also supported by a centralized trade system, where government products were shipped via Cilacap port, while native products were transported overland to surrounding residency areas (Veth, 1861). This condition caused Bagelen to become economically highly dependent on other regions (Dipradja & Sampurno, 2023).

The continuously increasing demand for labor and land under the *Cultuurstelsel* triggered a population explosion. With the average available rice field land being very limited per family, agricultural land could not keep pace with the surge in population. Village communities had to find ways to support an increasing number of inhabitants from the limited land. This phenomenon illustrates the increasing complexity in rice field usage, relying on intensive cooperation and complicated profit-sharing without increasing output per capita (Syahbuddin, 2018). This resulted in agricultural involution, where the intensification of agriculture was not accompanied by an increase in the per capita welfare of the community (Clifford Geertz, 1976). Consequently, Bagelen became extremely vulnerable to external or non-technical shocks.

The flood on February 21–23, 1861 validated that agricultural involution exacerbated the impact of a natural disaster. This was evident in the first days after the flood, when the price of rice in Purworejo surged to nearly three times the price, reaching 20 guilders per *pikul* on February 26, 1861, and was completely depleted on February 27–28, 1861. The government then tried to anticipate this by bringing in rice from surrounding regions like Semarang, Kedu, and Banyumas to make rice available and affordable again for the public (Loudon, 1861). This policy was relatively effective, successfully lowering the rice price in early March 1861 ("Binnenlandsche Berigten," 1861), but it did not solve the food crisis because the community still could not afford the rice. The collective poverty that existed before the flood, combined with the loss of property and food supplies after the flood, severely worsened the people's destitution ("Batavia," 1861). As a result, even though the government imported rice to stabilize prices, the community still could not purchase it. Residents eventually consumed whatever was left. The *Koloniaal Verslag* 1861 noted a significant decline in livestock numbers in 1861. This decline largely occurred because the livestock were slaughtered for daily consumption while facing the post-flood food crisis (Putte, 1864).

The tragedy caused deep disruption to the social and administrative order at the village level. Official reports on the 1861 Flood documented the deaths of several village heads and family members of native officials, such as five children of the deputy collector and the wife

of the district head in Kutoarjo (Quack, 1862). This loss created a vacuum in local leadership during the most critical time. Theft and looting crimes then spread in the villages in the Kemiri area ("Batavia," 1861). Furthermore, small-scale resistance movements against the colonial government also emerged on the border of Bagelen with Yogyakarta, although they were immediately handled by the local authorities (Putte, 1864).

Nevertheless, the community's own response demonstrated an extraordinary level of social resilience amidst the suffering. Colonial reports noted with admiration that the population "remained calm and cheerful everywhere," and showed "exemplary resistance" against incitement efforts launched by fanatic groups immediately after the flood (Putte, 1864). This calmness and solidarity did not come from external aid but from the social capital deeply rooted in the collective culture of a society caught in agricultural involution. They did not wait for instructions but spontaneously helped themselves. After the water receded, the community immediately worked together (*gotong-royong*) to clear mud, repair waterways, and rebuild their homes using found materials, such as logs carried by the current ("Batavia," 1861; Wijck, 1865).

This solidarity became the primary survival mechanism in an involuted social system, where individuals were highly integrated into communal networks (Clifford Geertz, 1976). Although mobility disruption caused by infrastructure damage exacerbated isolation, the spirit of mutual assistance between communities was key ("Batavia," 1861). This resilience reflects the community's ability to recover from shocks by relying on their internal resources and social capital, a phenomenon that existed long before the colonial arrival and formed the main foundation for survival.

The 1861 flood in Bagelen had significant long-term implications, both for the local community and colonial policy. Severe damage to *Cultuurstelsel* lands, especially indigo (whose yield drastically decreased), and supply chain disruption, forced the government to evaluate and conduct massive replanting, even encouraging agricultural diversification by introducing the cultivation of Turkish larch trees ("Batavia," 1861). Drastic changes in land morphology due to sedimentation forced the relocation of some villages and the search for alternative commodities. This step showed the absolute priority given to restoring food production and *Cultuurstelsel* commodities, which were the backbone of the colonial economy in the region.

The colonial government's response, although slow in the initial phase, was marked by massive financial and structural intervention, indicating how central Bagelen was to their economic interests. The total allocation of financial aid reached 113,000 guilders, distributed based on the tiered colonial social structure. The native population received 88,756 guilders, followed by Native Officials with 14,048 guilders, European residents with 9,100 guilders, and the Chinese with 1,096 guilders. Besides cash aid, the government allocated an emergency fund of 100,000 guilders specifically for purchasing rice seeds, waiving land rent arrears, and providing seeds for replanting in May (Putte, 1864).

The most significant aspect of the colonial response was the permanent spatial restructuring measure: the decision to relocate the capital of Kutoarjo to a new location. This decision was prompted by the damage to the Jali River and functioned as compensation for paid labor for the residents (Putte, 1864). Although seemingly noble, it is highly probable that this policy served to quell potential local political turmoil by accommodating the desires of local rulers and residents who were reluctant to return to the place so severely impacted by the disaster. Furthermore, this indicates that the disaster compelled the colonial government to respond to non-physical factors such as trauma and social preference in the recovery process, ultimately resulting in structural changes to the region's spatial planning and transportation,

such as the permanent relocation of the route between Purworejo and Sapuran (Bleeker, 1871).

This restructuring measure, although cloaked in a narrative of compensation and humanitarianism, was essentially a clever colonial strategy. The development of infrastructure in the new location was a way for the colonial government to more easily control and supervise the production area. The policy of providing paid employment likely served to tie the community to the colonial economic system. Rather than allowing Bagelen to recover, the colonial government was tightening its grip with colonial dependency, where the colony was used solely for exploitation for colonial prosperity (Dos Santos, 1970).

Overall, this event is strong evidence that a natural disaster in the colonial era was never purely a natural event but one shaped and exacerbated by the inherent structural economic, administrative, and spatial vulnerabilities under the colonial power system. This disaster not only caused destruction but also triggered spatial, economic, and policy changes that permanently altered the landscape of Bagelen. The resilient local response and extraordinary self-initiated efforts were ultimately utilized by the colonial power to reproduce the structure of dependency and exploitation, ensuring that the flow of profits from Bagelen to the Netherlands could be promptly resumed. The 1861 flood serves as a powerful historical lesson on how power can use a crisis to strengthen its hold, even in the face of remarkable community resilience.

Conclusion

The catastrophic flood and landslides that struck the Residency of Bagelen in February 1861 were not merely a natural disaster, but a profound socio-economic tragedy that exposed the deep structural vulnerabilities under colonial rule. Triggered by extreme rainfall, the event resulted in over 681,000 guilders in financial losses, 1,558 casualties, and the destruction of 31,834 hectares of agricultural land. This event provides clear insights into how a natural disaster can interact with a colonial system, affecting the socio-economic fabric of a society and revealing the dynamics of both structural and social resilience. The flood fundamentally devastated the agrarian structure and the production of export commodities. Under the Cultivation System (Cultuurstelsel), Bagelen’s population had grown rapidly, but food crop lands were shrinking as priority was given to export crops like indigo and coffee. This phenomenon, which Clifford Geertz termed agricultural involution, created a system that was highly labor-intensive yet extremely fragile. When the flood hit, this fragility was laid bare, with massive destruction to agricultural land that paralyzed the local economy. The disaster serves as a tragic validation of Geertz's theory: a system reliant on inefficient labor becomes profoundly susceptible to external shocks. Furthermore, the event acts as a lens for analyzing economic dependency theory. By examining the relationship between Bagelen as a colony and the Netherlands as the metropole, it becomes clear that Bagelen's economy was conditioned by the needs of Dutch economic expansion. The colonial government's response was not purely humanitarian. It was an investment to ensure the continuity of the colonial economic engine that had been crippled by the disaster. This highlights how development in the colonies was driven by the interests of the metropole, not the internal needs of the local population. Ironically, amidst this devastation, colonial reports noted the extraordinary social resilience of the Bagelen community. They displayed remarkable composure, solidarity, and self-help initiatives. Self-organized evacuations and communal efforts to clear mud and rebuild homes were powerful evidence of their strong social capital. However, this resilience was exploited by the colonial administration. The government's response was not limited to financial aid; the disaster also triggered a significant spatial restructuring, such as the

relocation of the Kutoarjo district capital. While framed as a response to the population's trauma and wishes, this was fundamentally a clever colonial strategy to rebuild a more efficient infrastructure for production control. These development projects also tied the community to the colonial wage and labor system, ensuring they returned to the cycle of dependency. Ultimately, the 1861 flood is a case study demonstrating how a natural disaster in the colonial era was exacerbated by structural vulnerabilities and how local resilience could be co-opted to reproduce and strengthen an exploitative system.

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