



A GEOHISTORY OF THE ROLE OF AGUSAN RIVER TO THE LUMBER INDUSTRIES OF BUTUAN CITY, 1950s-1990s

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ABSTRACT

This research ventures into the geo-history of Butuan City from the 1950s to the 1990s. It highlights the roles of the Agusan River in the operation of lumber industries and traces its physical changes over time. Specifically, this research sought answers to the queries on the reasons for the location of timber and logging companies near the Agusan River, the social and economic impacts of the lumber industries on the people of Butuan, and the environmental impact of the lumber industries to Agusan River. Furthermore, this research is qualitative in design and utilizes the triangulation method. In addition, the researcher drew interpretations from the factual information observed in the location of lumber industries and confirmed by the majority of the key informants through in-depth interviews. Concerning the presentation of data, the researcher utilized the perspective and descriptive approach, in which the researcher studied the events that took place in Butuan City from the 1950s to 1990s in relation to the role of the Agusan River in the lumber industries. On the other hand, the researcher conducted archival research, personal interviews with the aid of an interview schedule, and documented personal observations during fieldwork. However, prior to the extraction of data, the researcher went through proper entry protocols, and ethical standards were ensured. This research reveals that the Agusan River has a significant role in the operation of lumber industries, which contributes to the economic development of Butuan City. It served as a means of transporting the logs,

as a log pond of sawmills, and as a dumping area for lumber industry waste products. Moreover, the location of the timber and logging companies near the Agusan River in Butuan City was due to the easy and cheaper way of moving the logs from their source to the buyers. In addition, lumber industries in Butuan have contributed positively to the economic status of the people and the city's infrastructure. Unfortunately, these lumber industries have also polluted and contaminated the Agusan River.

Keywords: *geography, history, socio-economy, Butuan, lumber industries, Agusan River, roles of river*

INTRODUCTION

Background of the Study

Throughout the history of humanity, different disciplines like economics, geography, politics, and sociology have become interconnected. Recent historical developments have shown that it has become more interdisciplinary than in earlier decades (Lewis & Lombardo, 2016). One example of this trend is geographical history, described by Baker (2003) as a significant overlapping of interests between history and geography where the concerns of period, place, and people are represented in a narrative. Another example of an overlapping interest that a historian could gain perspective on is economic historical geography introduced by Vusal Gasimli in 2015. This perspective explains geographical placement as a determinant of the existence of natural resources, territory, distance, climate, and other important factors in the economic development of a place. In economic historical geography, water resources are one of the most important issues being investigated. It has been argued that the quality and quantity of our domestic water resources today have been depleted due to the pollution caused by industrial factors, which would significantly affect both the local and global economy.

In 1962, Rachel Carson's pioneering work, "Silent Spring," raised awareness of the concept of environmental degradation in the world. Such a controversial book asserts that environmental degradation results from air, earth, river, and sea pollution caused by the chemicals released by industries. It was further maintained that this environmental pollution, for the most part, is irrevocable, thus the need to protect the environment. On the other hand, Schultz (2000) believes that attitudes toward environmental concern are rooted in a person's value system. This is why a large body of research has linked environmental problems to the human

tendency to act in one's interest.

Relevant to this environmental concern are the lumber industries, which are perceived to have a positive impact on socio-economic development but have a negative impact on the environment. Regidor (2015) claims that a lumber corporation has played an important role in the socio-economic development of a municipality in Agusan del Norte. However, the natural resources near the corporation, especially the fish, have been depleted due to chemical contamination in the water. Similarly, Castorico (2006) argues that although the logging concessions in Carrascal, Surigao del Sur have employed the locals. On the other hand, the adverse impact of this economic activity on the environment has left people in fear of flash floods and landslides.

Today, at least 33 major cities are located on major rivers in the world, and the people living in these cities have developed their social and economic lives through the rivers (Chan et al., 2016). However, in the Commission Report released in 2016, most of the world's major rivers have largely been depleted and polluted due to human mismanagement of this water source. In the Philippines, the former secretary of the Department of Environmental and Natural Resources, General Angelo Reyes, warned of the possibility of a water crisis because out of the 421 rivers in the country, 50 are considered biologically dead (Echeminada, 2007). He further expressed that pollution aggravated the crisis by reducing the availability of clean and safe water.

For this reason, the present study looks into water concerns in Butuan City, which became progressive in the early 1950s due to its lumber industries, known as the "Timber City of the South" (Butuan, 2018). This paper attempts to identify the factors that influence the economic development of the lumber industries in Butuan City in relation to geography. Geographically, Butuan City is where the Agusan River is found, an important water source in the city and the country. Agusan River is the third largest river basin and the third longest river system in the country (ADB, 2008), threatened today by environmental pollution (Region 13 Agusan River Dream Ground Surveys, 2015). Historically, accounts of European explorers and clergies such as Antonio Pigafetta, Francisco Combes SJ, Jean Baptiste de Gentil, and others have mentioned how the Agusan River shaped the economy and history of the people of Butuan from the time of their arrival and occupation (Blair & Robertson, 1903-1908). Donesa (1997) maintains that the indigenous inhabitants from the riverine and coastal areas needed the products of the indigenous inhabitants who dwell in the mountains for their consumption and trade relations with foreign traders. On the other hand, indigenous inhabitants who dwell in the mountains need the products of those who dwell in the riverine and coastal areas for personal,

religious, and other purposes. In addition, Paular (1988) provides that the previous locations of the early settlements of the people of Butuan during the Spanish time were always located near the Agusan River. In fact, the first location of these settlements was near the mouth of the river, but people relocated to higher ground due to flooding.

Nevertheless, these written accounts mainly focused on the political, religious, socio-cultural, and anthropological aspects, among others. Only a few publications mention the function of the Agusan River to the economic development of the city (Lao, 1980). Historical studies about Butuan's geography, especially on the role of the Agusan River in its economic progress during the period of the height of lumber industries and how the operation of these industries has been attributed to environmental issues, are found to be scarce. Thus, the present study seeks to understand the interrelationship of economic progress and geography of Butuan City in a geohistorical context and explores the role of the Agusan River in the lumber industries in Butuan City during the 1950s-1990s. Additionally, it investigates the social, economic, and environmental impacts of the lumber industries in the timeframe. Specifically, it seeks answers to the following questions.

1. What are the roles of the Agusan River in the operation of lumber industries in Butuan City?
2. What are the reasons for the location of timber and logging companies near the Agusan River?
3. What are the social and economic impacts of the lumber industries on the people of Butuan?
4. What are the environmental impacts of the lumber industries on the Agusan River?

RESEARCH METHODOLOGY

Research Design

This research is qualitative in design and utilizes the triangulation method. The researcher used archival documents such as maps, eyewitness accounts, and material artifacts. The researcher also drew interpretations from the observations made in the location of lumber industries, which were later confirmed by the majority of the key informants through in-depth interviews. Perspective and descriptive approaches were used in the data presentation. In this approach, the researcher studied the events that took place in Butuan City from the 1950s to the 1990s in relation to the

role of the Agusan River in the lumber industries. Then, the researcher investigated the social and economic impacts of the lumber industries on the people of Butuan as well as the environmental impacts of the lumber industries on the Agusan River.

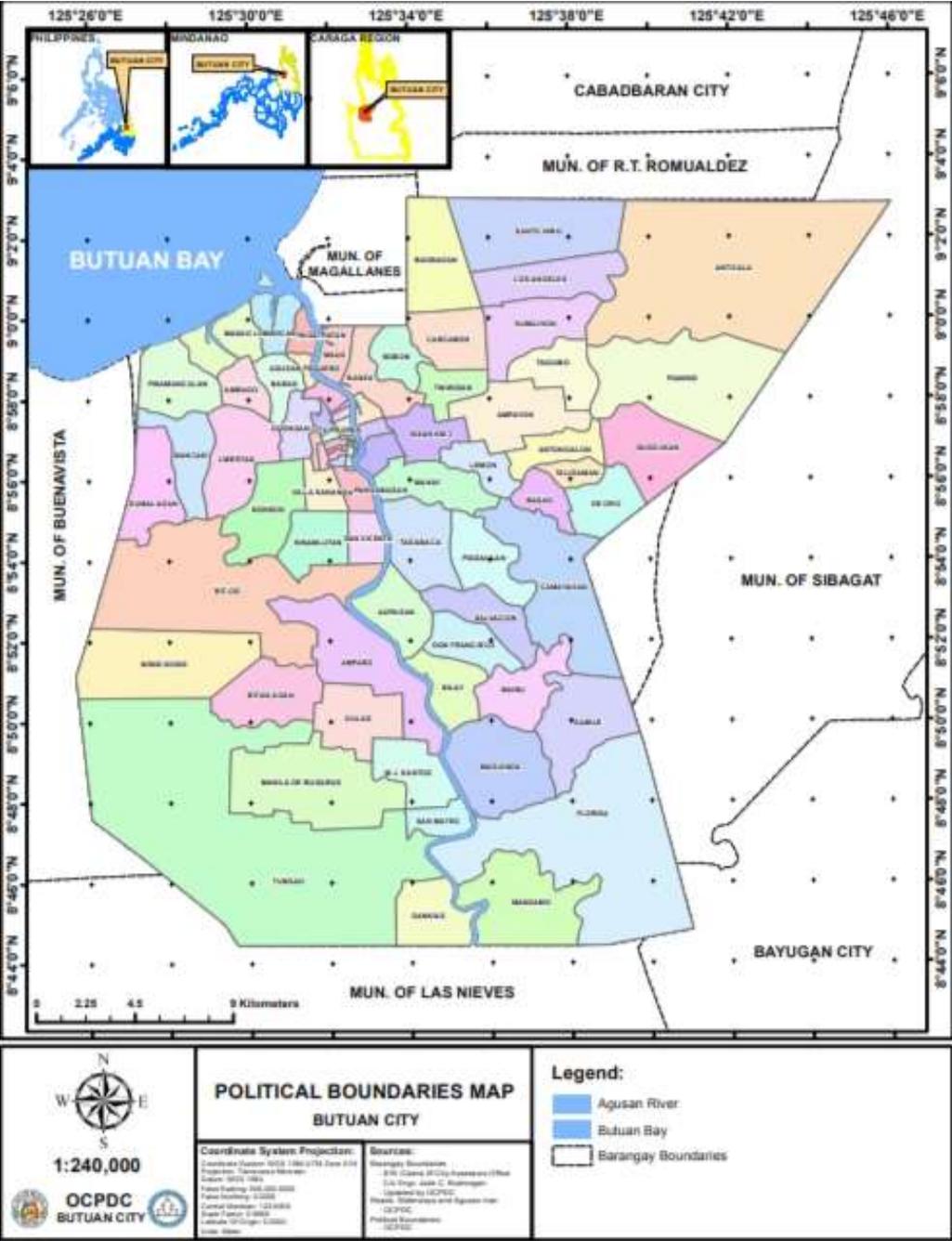
Research Setting

This study was conducted in Butuan City, a city in the central portion of the province of Agusan del Norte in Northern Mindanao. It comprises a wide coastal and broad alluvial plain, and a mountain range straddles the southeast called Mt. Mayapay, with an elevation of 675 meters. Butuan City has a total land area of (81,728 ha. km²) divided into four areas: the agricultural land, the grass/shrub/pastureland, the forest land, and an area for other uses. The forest land is further divided into production and protected forest land, where individual tree species are mostly grown and trees are preserved, respectively (Butuan.gov, 2018).

Further, 17 rivers drain into Butuan, which is currently used for irrigation and domestic functions. These rivers include Agusan River, Ampayon River, Mahay River, Tagabaca River, Agusan Pequeño River, Mantange River, Masao River, Baan River, Manapa River, Taguibo River, Ambago River, Bitan-agan River, Bilay River, Masago River, Mambatua River, Subait River and Bugabos River. The Agusan River is the biggest, moderately deep, and navigable by small water vessels. It also winds with oxbow lakes at some points along its channels (Butuan City Ecological Profile, 2016).

The Grand Agusan River is the third largest river basin and third longest river in the Philippines. It has a river length of 350 kilometers and a total drainage area of 10 921 square kilometers. Based on the topographic features, its river basin is divided into three. One is the Upper Agusan River Basin, where headwaters are located upstream from Compostela Valley to Sta. Josefa, Agusan del Sur. Another is the Middle Agusan River Basin, which runs from Sta. Josefa went to Amparo, the location of the Agusan Marsh Wildlife Sanctuary, where the large crocodile Lolong was found. Lastly, the Lower Agusan River Basin runs from Amparo to Butuan City, where the bulk of the water drains down to Butuan Bay (Asian Development Bank, 2008). Mainly located in Butuan City, this Lower Agusan River Basin is the setting of the present investigation.

Figure 1
Map of Butuan City



Source: Office of the City Planning and Development Council, Butuan City

Research Participants

The researcher extracted data from 20 key informants who were residents of Butuan City through referrals from an informant. The participation criteria include age (must be 60 years old and above), current or former occupation, place of origin, and years of residency in Butuan City. Such inclusion requirements were considered as they correspond to the informants' knowledge of the location of the lumber industries and how the Agusan River was utilized in the lumber industries.

Instrument

The researcher used an interview schedule to extract data from the key informants. This tool was prepared with questions based on the previously mentioned problem statement. To provide a better understanding on the part of the key informants, the questions were translated into Butuanon through the help of a first language (L1) speaker of the said language. The researcher also sought assistance from bilingual L1 speakers of Butuanon language to validate the meaning of the translated questionnaire. The instrument was pilot tested before being utilized in the primary research field. After transcribing the recorded interview, the researcher translated the data into English and requested another bilingual speaker to translate it back to the local language.

In addition, the accuracy and equivalence of the word meanings were reviewed by comparing the two versions of the translated material, and the researcher and the other bilingual speakers reconciled any inconsistencies along the process.

Data Gathering Procedure

Before gathering data, the researcher ensured that ethical standards were considered. Permission letters were sent to the officer-in-charge of the libraries, museums, and archives before proceeding to their facilities. The researcher also went through entry protocols in the local government unit of Butuan City and the community, where she conducted observations and interviews. In conducting personal interviews, the researcher explained first that the informant's participation is voluntary and that they are free from any legal liabilities if they wish to withdraw their participation. The general objectives of the research and its benefits and consequences were also disclosed to the informants. They were also informed that their answers to the interview would be audio recorded and transcribed. To protect their identities, pseudonyms or number codes known only to the

informant and the researcher were utilized. When permission was granted to the researcher, the informants were asked about their availability for the interview. The interview was conducted unstructured to obtain all possible responses.

Furthermore, the researcher used a smartphone camera, audio recordings, and journal notes for documentation. To safeguard the copy of the data gathered, the researcher used the Google Drive app to store the data gathered in the researcher's e-mail automatically. In addition, the researcher saved the softcopy of the data on other personal gadgets like a laptop, a tablet, and a personal computer. Moreover, this research utilized the documents found in the library, museums, profiles of local government units, and digitized archival sources downloaded from trusted and official internet websites. Electronic sources of information, such as online journals and articles, portable document format (pdf.), and data storage in DVD form, were also utilized.

Additionally, the researcher gathered first-hand information by personally going to areas near the riverbanks of the Agusan River in Butuan City, particularly the local port and the location of old lumber corporations.

Data Analysis

The transcribed recorded data were analyzed and corroborated based on the notes taken during the interviews. Furthermore, in deducing the data's meaning, the researcher verified the information gathered from archival sources and searched for evidence to provide accurate interpretations.

RESULTS AND DISCUSSION

3.1 Agusan River and Its Contribution to the Development of Butuan

Based on the data, it was found that since pre-colonial times, the Agusan River has been used as a natural waterway for trading people and their goods. It is also considered as the primary source of food and livelihood. The periodic flood provides the valley with rich soil and fertile rice lands while the river abounds with fish and water resources. According to historical accounts, gold, spices, civet cats, nipa palm, and all kinds of products, especially wood, are found in the area surrounding the Agusan River (Blair & Robertson, 1908). All of this has encouraged the locals to build settlements near the riverbanks.

It was mentioned by a colonial French writer, Jean Mallat, that Mindanao is rich in wood products, especially in the province of Caraga,

where Butuan was territorially governed. A precious wood called *Tek* was believed to be present in the area (Santillan-Castrence, 1994). Considered the best material for shipbuilding, the local people of Butuan used such wood in making their boats. The excavated *balangays* along the river delta of Butuan and Agusan were material artifacts of this precious product (Ronquillo, 1987).

Furthermore, it was reported in 1968 that the number of logs floating along the Agusan River to be exported was about 209 million pesos (Lao, 1980). If it had been gained continuously since 1950, Butuan would have been rich. However, destructive floods hit Butuan. According to the Dartmouth Flood Observatory (1993), Butuan City was twice hit by typhoon rains in February and December. This is caused by the breaching of the Agusan River's banks due to a week-long monsoon rain. One flood documented in Butuan City during the peak of the logging industry happened in 1962. The whole city was soaked for two months, as evidenced by the photographs taken by Arrow Studio.

Figure 2

An image of Butuan City under flood from January 2 - March 11, 1962

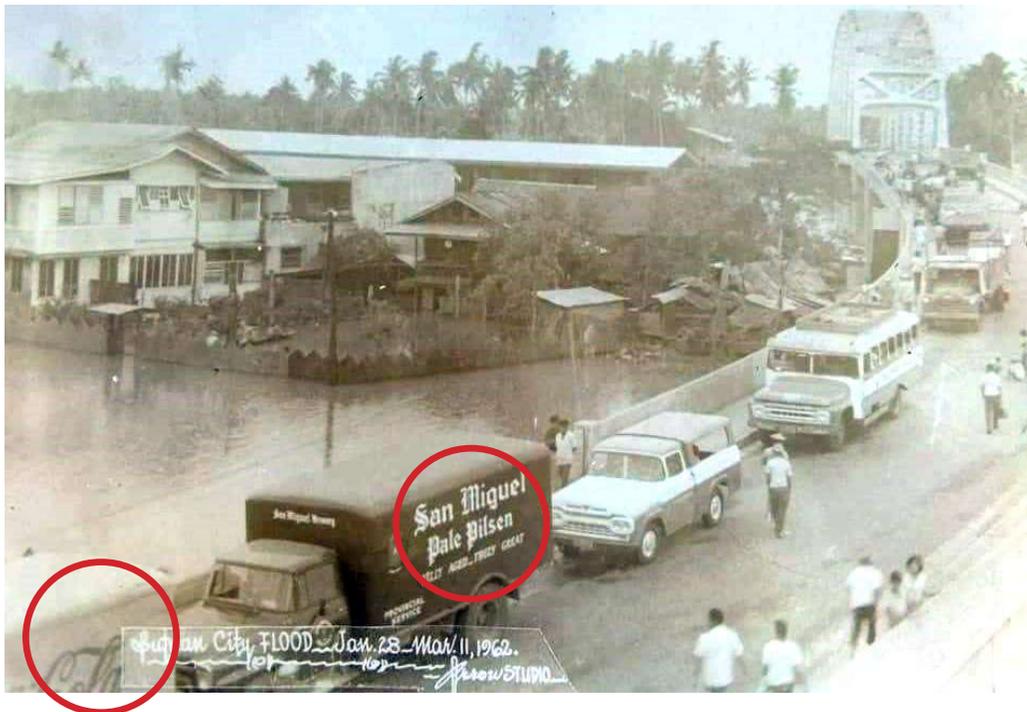


Source: Shot by Arrow Studio downloaded from Butuan City Agusan del Norte Facebook Page/Public Post (Accessed: 2018)

Figure 2 shows how people would use wooden canoes to pass through the flood. It can be observed from this photo that the sky was already clear, but the flood was not subsiding. The building at the back is St. Joseph Cathedral, and at the left are the premises of the City Plaza. Another image of the 1962 Flood in Butuan is shown in Figure 3. It can be inferred from this old picture that business was still alive despite the flood. The picture shows the traffic from Magsaysay Bridge down to the City Proper of Butuan, where Coca-Cola and San Miguel Pale Pilsen company trucks were in queue with the other vehicles.

Figure 3

An image of the traffic from Magsaysay Bridge in Butuan City during the flood in 1962



Source: Shot by Arrow Studio downloaded from Butuan City Agusan del Norte Facebook Page/Public Post (Accessed: 2018)

Although people in Butuan seemed to have their way of coping with the flood then, the local government officials saw the need to provide an immediate solution to the problem. Thus, they hired a dredging ship called Damayan to dredge the silted mouth of the Agusan River so that the bulk of water would flow directly to Butuan Bay. The local government also continued to work on its flood control project by constructing canals during the 1970s (Ronquillo, 1987) and started to rehabilitate the Magsaysay

Bridge (Diaz, 2000). The bridge is an important infrastructure that connects Butuan City to other cities like Cabadbaran, Bayugan, Surigao, and Davao. It can be inferred that despite the calamity, the people were still industrious and resilient in making both ends meet.

3.2 The Roles of Agusan River in the Operation of Lumber Industries in Butuan City

Based on the interviews, Agusan River plays three important roles in the operation of lumber industries in Butuan City. First, it allows people to transport the logs from the source to its buyers. Second, it serves as a log pond for sawmills. This large log-pond of sawmills gave the people many economic advantages and opportunities in Butuan City. It was advantageous because the timber buyers could easily choose and buy the wood. Then, the sawmills would immediately cut them depending on the buyers' desired size and length. The buyers of the logs would no longer transport them to be sewed and cut to another place because of the sawmill's proximity to the log pond, which provided economic opportunities to the people in Butuan. Thirdly, it is the dumping area for waste products from the nearby sawmills.

One of the key informants attested that he had engaged in the operation of this lumber industry and had witnessed how the city progressed due to the industries. He said:

“Sa una uso nang giingon nila na mamalit ug troso. Namaligya man ko sa una ug troso kinuha ko gikan diha sa log-pond unya paliton sa mga baby sawmills. Sa una ang mga sawmill mao tong nakahatag ug trabaho. Hantud ba nakita nako na murag miasenso ba ang syudad. Naa na dayun lain mga negosyo na natukod sama anang Shell ug Caltex diha sa una ang tag-iya mga Amerikano.”

[Free translation: Before, buying logs was a trend. I used to sell logs that I got from the log pond then the baby sawmills would buy them. The sawmills gave employment. Then I noticed the progress of the city. Other businesses were established, like Shell and Caltex, which Americans owned.]

The photograph shown in Figure 4 further supports this information. The image was taken presumably between 1970 and 1990 at Butuan City Center, and the Shell Company logo is captured at the bottom right.

Figure 4

An image of Butuan City Proper circa the 1960s-1980s



Source: Public Photo uploads from Butuan City Agusan del Norte Facebook Page (Accessed: 2018)

Given the information provided during interviews as supported by documents, we can infer that the people in Butuan City enjoyed the riches brought by the log pond of sawmills, which was one of the roles of the Agusan River during the boom of lumber industries. On the other hand, the Agusan River also became a dumping site of lumber wastes from the sawmills and recipient human wastes. In one of the interviews, a key informant shared that:

“Ang mga panit lang daan sa kahoy mangahagbong sa suba isa na kana na makapalubog sa tubig. Pagtumba lang daan anang kahoy naay mga lapok na muapil unya darohon sa bulldozer. Naa pud mga dagkong troso na mulubog sa ilalom sa suba ang tawag ana kay sinker pagkahulog ana useless na... Naa napud mga tao nagpuyo diha daplin sa suba kay duol ra sila sa ilang panginabuhian sa sawmill. Ila pud mga hugaw kay wala man sila C.R., diha ra pud sa suba. Nah basta kakita gyud ko sa mga

pantat mag-ilog kaonon ilang mga hugaw unya ipanglabay pa dira ang mga butod ug maskin unsang basura.”

[Free translation: The bark of the trees that would fall to the river is one of the reasons that caused the water to become murky. The bulldozer would take the log falling to the ground, and then the soil and clay would be eroded. There were also big logs that would sink to the bottom of the river, called sinkers, which were considered useless. Some people lived near the river because they were closer to the sawmill, their source of livelihood. They leave their wastes in the river because they have no toilets. I really attest that I saw many catfish gathered to eat their wastes and decaying animal bodies. All sorts of garbage were thrown there.]

This practice of throwing wood waste into the river by the timber and logging companies was pointed out by Hontiveros (2004), who maintains that by the color of the washed-up sawdust on the riverbanks, one can know the species of the harvested tree. The red *Lawaan* has red sawdust and white sawdust for white *Lawaan*.

3.3 The Reasons for the Location of Timber and Logging Companies near the Agusan River

The lumber companies were located near the Agusan River for easy and cheaper transportation of the logs from its source, the Upper Agusan area, to Butuan City. Since the sawmills were along the riverbanks, it would be cheaper to transport the logs through the Agusan River than by land. As one of the key informants provided:

“Ang pagdeliver sa kahoy gikan sa Agusan Sur dali ra ug dili gastos sa pagkarga kay kung sa truck mas gasto. Sa suba diretso naman sa ilang planta. Sa una mao dire ilang sawmill daplin ra sa suba, igo ra birahon ang kahoy, kargahon sa spiker ila na dayun gabason. Ing-ana halos ang proseso sa uban pang mga sawmill. Mao ni pinakasayun ug pinakamenos gasto.”

[Free translation: Delivering the logs from Agusan Sur is easy and cheaper than using a truck. It would be delivered directly to their plantation using the river. Before, the sawmill was just along the river; they would just tow the logs, lift them using a spiker, and then they would saw them. Other sawmills

have done the same process before. It was the easiest and the cheapest.]

Based on the interviews, all key informants of this research confirmed that many companies operated as sawmills along the Agusan River during the logging boom. Some were called “mini or baby sawmills” because their operation was small-scale. Furthermore, most of them recalled that an estimated 20 large companies operated during the boom of the lumber industry. In the 2013 Philippine Forestry Statistics released by the Forest Management Bureau of DENR, only ten timber and logging companies legally operated in Butuan City from 1993 to 2013. The names of those companies are found in Table 1.

Table 1. Timber and Logging Companies in Butuan City, 1993-2013

	Company	Location
1.	A & V Veneer Manufacturing & Mini-Sawmill	San Vicente, Butuan City
2.	Butuan Esperanza Veneer Corp.	Amparo, Butuan City
3.	Golden “C” Agrowood	Bading, Butuan City
4.	Industrial Plywood Group Corp.	Agusan Pequeño, Butuan City
5.	Orgon Wood Industries	San Vicente, Butuan City
6.	Richmond Plywood Corp.	Mahogany, Butuan City
7.	Unorich Agricultural Products	Bilay, Butuan City
8.	Ventura Plywood Philippines Inc.	Lilo, Banza, Butuan City
9.	United Wood Industrial Corp.	Km. 4, Baan, Butuan City
10.	Agusan Plywood Corp.	Km. 4, Baan, Butuan City

Source: Forest Management Bureau, 2013

In 2016, the economic report of the Ecological Profile of the Office of the City Planning and Development Coordinator of Butuan City provided that the city’s Lumber Industry has 20 operations with permits, including a sawmill, plantation, and factory of wood-based products such as plywood, boxes, matchsticks, furniture, and lumber sticks.

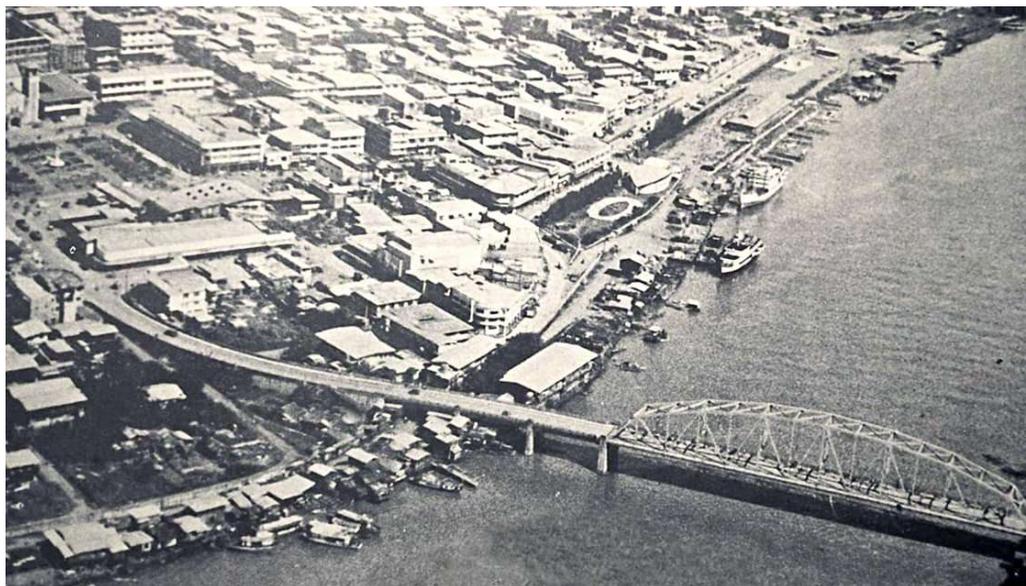
3.4 Impacts of the Lumber Industries of Butuan City to the People and Agusan River

3.4.1 Socio-economic Impact

In view of the foregoing, one impact of the lumber industries on the people of Butuan is the improvement of their socio-economic status. It provided income and livelihood to the people, enabling them to pay taxes, get social benefits, and send their children to prestigious schools. Moreover, building cheap yet durable houses was not a problem for many of the Butuanons due to lumber industries and infrastructures such as roads, bridges, and ports that were constructed and opened, encouraging more people to have business endeavors in Butuan City. The following old photo illustrates this growth in terms of the people's socio-economic status and city. Many water vessels were docked along the ports of both sides of the Magsaysay Bridge.

Figure 5

An image of the ports along the Agusan River in Butuan City circa 1960-80s



Source: Public Photo uploads from Butuan City Agusan del Norte Facebook Page (2018)

Currently, only a small port is operating in the Agusan River in the Philippine Ports Authority (PPA)-Butuan compound. It is a means to transport people from Butuan to Magallanes and vice versa. Big ships could no longer dock along the Agusan River due to the heavy siltation

at the mouth of the river. Therefore, the riverbed of lower Agusan is deep within the City Proper, but it is shallow along the areas outside the city to its mouth. This resulted in the dangerous overflow of the river towards the City Proper and riverside barangays.

3.4.2 *Environmental Impacts*

The operation of lumber industries brought physical changes to the Agusan River. During interviews, key informants shared that they used to drink and fetch water from the Agusan River. Unfortunately, such is no longer the case as the water is no longer safe for drinking based on the water quality tests conducted in 2015 (UP Training Center for Geodesy and Photogrammetry, 2015). Furthermore, they described the water of the Agusan River as clear during summer and low tides. However, during the researcher's field visits to the riverbank areas, the Agusan River in Butuan City was brown and murky. It was also wide and deep but became wider due to soil erosion in the riverbanks during flash floods. Its deepness was not natural because it was dredged during the 1960s by the dredging ship called "Damayan." Once every two years, the river would be dredged so that big boats and ships from other provinces could enter the mouth of the Agusan River and dock at the ports near the City Proper.

The Agusan River before was also teeming with different kinds of fish and animals. According to the key informants, the local people and the sawmill employees would catch shrimp and fish and bring them home for dinner after work. Some of the fish mentioned were *pugapu*, *borod*, *pango*, *bigu*, and *kasili*. They even used to see crocodiles and water hyacinths thriving, which can no longer be found in the lower Agusan River. This situation indicates that the water in the lower Agusan River is now polluted and contaminated, and the ecological balance has been destroyed. Therefore, the fish and animals could no longer survive in the river.

The 1987 Constitution articulates that the State must protect and advance the people's right to a balanced and healthful ecology (Art. II, Sec. 16 of the 1987 Philippine Constitution). In October 1988, President Corazon Aquino taxed the loggers as payment for the government program to plant new trees. After a year, President Aquino banned timber exports to curtail deforestation (Cabico, 2018). This action of the government greatly affected the lumber industries in Butuan City. The industry declined, and the city experienced a recession, displacing lumber industry workers and starving hundreds of families (Diaz, 2000). Fortunately, Butuan City was able to recover, and the environmental awareness efforts gained wider support from the residents of the city, including young Butuanons, through the media, government, and private sectors (Diaz, 2000). Eventually, in

June 1992, R.A 7586, The National Integrated Protected Areas System Act or NIPAS, was signed into law, which seeks the protection of select nature reserves, natural parks, wildlife sanctuaries, and natural biotic areas (Cabico, 2018).

In view of these national policies, the local environmental advocates of Butuan, in partnership with the DENR, created the “Flora Caraga” in the middle of the 1990s. This committee aims to protect the forest, wildlife, and natural resources within the region’s boundaries (Hontiveros, 2004). This effort was rewarded when former President Fidel V. Ramos proclaimed the Agusan Marsh a Wildlife Sanctuary in 1996. Moreover, Butuan City itself, before the end of the 1990s, strictly enforced environmental and sanitation laws such as Solid Waste Management and pursued the conservation of Integrated Protected Areas.

Thus, the results of this historical research illustrate that economically, the Agusan River contributed significantly to the progress of Butuan City, particularly during the height of lumber industries. However, such industry negatively impacted the city, particularly on the Agusan River. Geographically, the location of the Agusan River played a significant role in the development of Butuan as a city. Investigation of these kinds of events in the past is necessary to understand the present environmental situation of Butuan City. Through historical inquiry, we can also give worthy and viable solutions to the environmental problems we face today.

CONCLUSION

During the operation of lumber industries in Butuan City from 1950-1990, the Agusan River served as a means of transporting logs and as a log pond for sawmills. Additionally, it became a dumping area for lumber industry waste products. Moreover, the timber and logging companies were near the Agusan River in Butuan City to provide an easy and cheaper way of moving the logs from their source to the buyers. These lumber industries contributed to the socio-economic progress of the people in Butuan, which allowed them to build decent houses for their families and afford their children’s college education. It is also believed that the industry significantly improved the city’s infrastructure. However, the Agusan River was abused and neglected. The water became polluted, and the riverbanks were eroded. Fortunately, environmental policies were implemented during the late 1980s to save the Agusan River, which heavily affected the lumber industries and led to its decline. The best part is that before the 1990s ended, environmental protection, awareness, and efforts had already gained wider support among the people of Butuan City to protect the Agusan River.

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The author is the sole contributor.

DECLARATION OF COMPETING INTEREST

The author declares that there are no significant conflicts of interest, whether financial or otherwise, that may appear to impact the findings or interpretations of this article.

DECLARATION OF USE OF GENERATIVE AI / AI-ASSISTED TECHNOLOGIES

The author declares that she did not use generative AI and AI-assisted technologies in writing before submission.

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