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Analysis of the socio-economic impacts of Jatigede reservoir development on the Wado village community in Sumedang regency

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ABSTRACT

Climate change impacts changes in water availability for agricultural activities and water supply for household needs. Many regions in Indonesia and especially in West Java are already limited by the amount and quality of available water. Freshwater ecosystem are vulnerable to climate change and build reservoir is one of the solutions for water supply. This research analyzes the impact of the Jatigede reservoir inundation on the Wado Village community, including changes in population, education, employment, income, economic growth, and social community. The reservoir was built to overcome flooding in Indramayu and support irrigation in Cirebon and surrounding areas. Using a purposive sampling method, the study found a decline in community income with a sharp drop between 2022 and 2023. Proposed solutions include community empowerment, local infrastructure investment, and development of sectors such as tourism, agriculture, and fisheries to create employment opportunities. Socially, the relocation of residents led to changes in communication patterns, with houses now far apart. The implications of the research show significant economic and social impacts, such as the need for skills upgrading and job stability, as well as investment in local sectors. Inclusive and participatory approaches to development are also needed to enable communities to adapt to the social changes brought about by relocation.

1. Introduction

Climate change impacts changes in water availability for agricultural activities and water supply for household needs. Wilk-Woźniak et al (2021) argued climate change led increasing inequality in freshwater supply and consumption. Many regions in Indonesia and especially in West Java are already limited by the amount and quality of available water. Pulido-Velazquez et al (2015) applied reservoir in Spain to resolve inequality of freshwater and conclude that land-use changes could have similar impacts on the demand-supply balance as climate change and socio-economic changes could be the sufficient for adaptation on water supply infrastructure. Reservoir is a land with a function that can store excess water in the rainy season to be used in the drought season (Salsabila & Nugraheni, 2020). Reservoirs are an example of water management measures implemented to reduce the risk of water-related disasters, addressing drought along with flood mitigation (Albertini et al., 2020).

The construction of Jatigede Reservoir aims to overcome flooding in the Indramayu region, support irrigation in Indramayu and Cirebon, provide water sources for power plants, tourism, industry, and household needs. Jatigede Reservoir in Sumedang Regency, West Java, is the second largest reservoir in Indonesia, located in the Cimanuk watershed. The Cimanuk watershed has various

potentials such as reservoirs, ponds, swamps, which can be utilized in various economic activities, such as agriculture, plantations, fisheries, utilization of forest products for power generation and so on (Munfarida et al., 2019). The construction of the Jatigede reservoir has long been planned since the Dutch East Indies era. Then the reservoir began construction in 2008 during Susilo Bambang Yudhoyono era as the president and was inaugurated in 2015 and fully operational in 2017. Jatigede reservoir was built by damming the flow of the Cimanuk river which is in the Jatigede district area, Sumedang regency (sisemar.sumedangkab.go.id/), then during the leadership Joko Widodo, inundated the land that will be used as a Jatigede reservoir by inundating the flow of water from the Cimanuk river on August 31, 2015 (Bayu et al., 2018).

The development process took a long time and triggered various assumptions from the community, especially in the affected areas (Mustika & Asyiawati, 2017). Communities affected by the Jatigede reservoir experienced population displacement as a result of the land where they lived being inundated due to the reservoir. In line with this research, related to population mobility caused by the construction of reservoirs has an impact on population movements carried out by force, moving from the old place of residence to a new place of residence (Sonya et al., 2023). There is a problem that will be difficult to forget, which is when villagers have to adapt to a new environment. while on the one hand, people's memories of the old village will always be remembered (Dewiyanti et al., 2021). Affected communities experienced changes in livelihoods, income, and unemployment rates which became a form of social and economic change caused by the construction of the Jatigede reservoir. This transformation can mean improvement or deterioration (Mawardi, 2020). Sekamane et al (2023) addressed that host community was accommodating to the resettled population although integrating in a new space was another challenge for both the parents and children, especially the children who had to adapt to the new schooling environment.

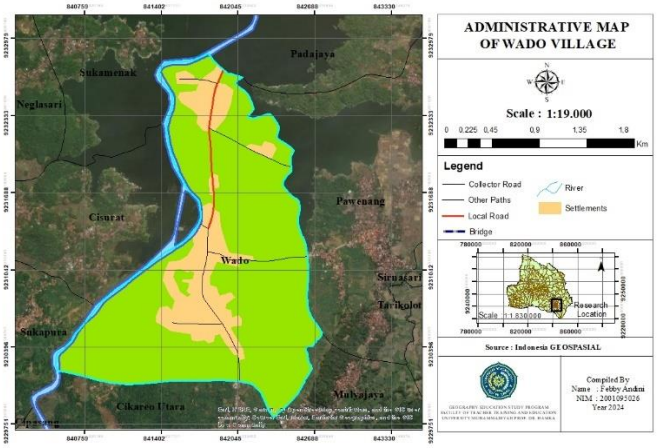

Figure 1. Administrative Map of Wado Village

The impact of the construction of the Jatigede reservoir, causing socio-economic conditions that affect the affected community. where in social conditions the community experiences long-distance relationships because they move because of the inundation, and move to other settlements and adjust to the place of settlement. Economic conditions that experienced a decline due to job loss causing decreased income. This socio-economic condition also relates to education, livelihoods, and average family income in a one-year period (Winarno, 2018). Figure 1 shows the administrative map of Wado village for the preparation of this research with the aim of knowing how the impact of the economic and social decline of the community caused by the Jatigede reservoir on the people of Wado village. Wado village is an area located in Wado district, Sumedang regency, West Java province. Astronomically, it is located between 6°56'45“ N and 108°05'31” E, with an area of approximately 439 hectares. Geographically, the village consists of rice fields and hills, and covers the district centre in the north. Wado village is dominated by 93.52 hectares of residential land and 79 hectares of paddy fields. Its boundaries include Jatigede reservoir to the north, Pawenang village to the east, Cikareo Utara village to the south, and the Cimanuk river to the west.

Obour et al (2016) states large dams or reservoir have adverse local socio-economic impacts, such as negatively modifying the rural economy and rural employment structure. This research is important because the construction of the Jatigede reservoir caused a significant decline in the economy of the

people of Wado Village. Relocation has also reduced economic activity, a situation exacerbated by high food prices and a lack of capital funding, leading to the collapse of many business sectors. As well as farmers losing agricultural land, so that farmers experience a loss of land for farming, and switch to other professions. So that many affected people lost their old jobs due to not having a permanent job, lack of knowledge and skills, inadequate facilities and accessibility, lack of employment opportunities. Therefore, the community chose to switch professions by utilizing existing energy sources by working as laborers or construction workers. Although the income they have is uncertain and below the minimum wage standard, according to the community, at least they can support and meet the needs of their families. In addition, compensation funds from the government at that time were not disbursed, which triggered dissatisfaction and demonstrations. Although the disbursement was eventually accelerated, the compensation funds were insufficient and not suitable for buying new land and business capital, so they had to use personal funds to supplement them, and made the community lose because they spent their personal funds drained and exceeded the compensation funds provided.

2. Method

The data used primary and secondary data. Primary data was obtained from 100 respondent household affected by the Jatigede reservoir inundation through observation, interviews and documentation. Secondary data as a complement include information from journals, papers, websites, BPS data and population data from the local village government office. This research method uses qualitative descriptive methods with an approach using quantitative methods, in qualitative descriptive methods can identify, analyze, and describe the impact of the Jatigede reservoir on the economic and social decline of the people affected by the Jatigede reservoir, which is a form of problem because the community experiences an impact on the economic and social decline of the community as a result of the construction of the Jatigede reservoir. then after the data is obtained, then the data is recapitulated and data processing is carried out using the demographic formula contained in geography, the demographic formula is used to analyze aspects of the population such as population growth rate, population composition by age, gender, education level of the head of the family, education level of children, type of work, and economic growth rate in affected communities. Based on data processing obtained from the demographic formula, it can affect and have a relationship as a result of the impact of the Jatigede reservoir construction, so that it can strengthen the research results.

The research population used in this study, namely population data obtained from the Wado village government office, there is data on the total population in Wado Village, Wado Subdistrict, Sumedang Regency in 2024 is 7,408 people. in this study the research sample used was 100 respondents, the respondents used as sample material were family heads affected by the Jatigede reservoir inundation. in determining the research sample, the researcher used the Purposive Sampling method which is a non-random sampling method (Lenaini, 2021). The data analysis method applied in the study followed the stages of (Miles & Huberman, 2009). This study based on Balata et al (2022) covers a set of distinct geographic and socio-economic realities and analyzes possible interfaces between these domains. A set of descriptive procedures and statistical applied in this study to show how carry out an accurate statistical investigation (Franzese & Iuliano, 2024). Descriptive analysis applied in this study such as investigation on relation between population distribution and population growth rate; composition of the population by level of education of the head of household, composition of population by level of education of children; composition of population by type of employment; characteristic of unemployment; average resident income and economic growth and characteristic of social community in Wado village.

3. Results and Discussion

Descriptive analysis applied in this study for investigation on relationship between population distribution and population growth rate; composition of the population by level of education of the head of household, composition of population by level of education of children; composition of population by type of employment; characteristic of unemployment; average resident income and economic growth and characteristic of social community in Wado village. The advantages using descriptive analysis for improving decision making to identify the socio-economy impact of Jatigede reservoir and often serves as starting point for more complex analysis. Socio economy impact has complex analysis in social science.

3.1 Total Population Distribution and Population Growth Rate

The relationship between demographic aspects and economic growth is very important and mutually sustainable. Following Bjorvatn & Farzanegan (2015) will enable us to calculate the impact of population growth on economic development and those variables has relevant interaction. Han & Lee (2020) argued the relationship between demographic transition and economic growth has three different views: population growth can promote, restrict or be independent of economic development. Total population distribution is generally related to the geography component or the area where people live (Suharto, 2020).

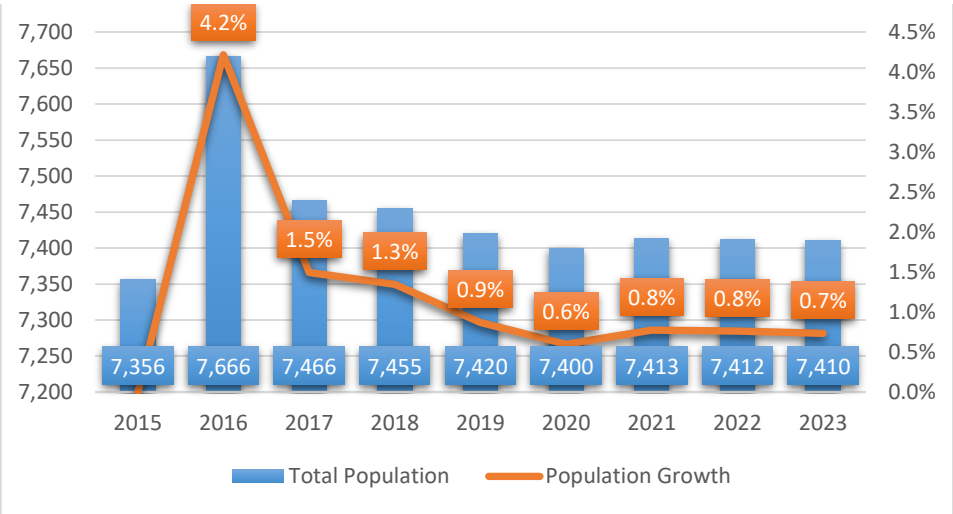

Figure 2. Administrative Map of Wado Village

Based on the total population distribution and population growth rate in Wado village, there are the results of the calculation of the population growth rate based on Ayele & Tarekegn (2020) as follows:

$$r = \frac{1}{t} in \left(\frac{pt}{po}\right) x100 \quad (1)$$

Where t number of period used in this study or 8 years, then we calculate:

$$r = \frac{1}{8} in \left(\frac{7410}{7356}\right) x100 \quad (2)$$

$$\frac{7410}{7356} \approx 1.00734$$

Based on equation (2) we transform to natural logarithm as follows:

$$\ln(1.00734) \approx 0.00732 \quad (3)$$

Then we use equation (1) as follows:

$$r = \frac{1}{8}\ x\ 0.00732\ x\ 100 \quad (4)$$

$$r \approx 0.0915\%$$

In the calculation of the population growth rate in Wado village, from 2015 to 2023 is around 0.0915 percent. This indicates that on average each year, the population increased about 0.0915 percent from the previous year during the 8-year period. Overall, this means that the population experienced slow growth over the 8-year period. Changes in population are influenced by the birth rate, death rate, and population migration (Suharto, 2020). Similar patterns and calculation (Figure 2 and Eq (4)) that decreases slowly on population growth in Wado village, this symptom is caused by various factors that occur, including shifts in fertility rates, mortality rates, migration patterns, government policies, and socio-economic conditions (Sah & Valeriani, 2024). Rostiana & Rodesbi (2020) states if the population structure changes contribute positively to economic development, it

means that Indonesia has enjoyed a bonus from their demographic transition. Based on Wado village there population transition as evidenced by decreasing population growth, transition from aging population to young population.

3.2 Population Composition by Age in 2024

The construction of the Jatigede Reservoir in Sumedang Regency resulted in the displacement of the population, especially in Wado Village, Wado Subdistrict, with the displacement, there were several productive and non-productive family heads. The composition of the population by age as follows:

Table 1. Population Composition by Age

Age group (year)	Frequency	Percentage
21-30	5	5%
31-40	19	19%
41-50	16	16%
51-60	29	29%
61-70	20	20%
71-80	10	10%
81-90	1	1%
Total	**100**	**100%**

Source: Wado Village Monograph

Table 1 shows the composition of the population according to the age of the head of household, the 51-60 years age group has the largest percentage at 29 percents. This age group includes productive age actively working. Meanwhile, the age group 81-90 years has the smallest percentage, namely 1 percent at this age including the elderly. Achmad et al (2024) argued the productive age in his research is the age range of 15 to 64 years. This factor is a great opportunity for the country in improving the economic performance of the industry. The number of residents in the productive age group (21-60 years) in Wado village is 69 people, while the number of non-productive age residents (61-90 years) is 31 people. to calculate the dependency ratio, the dependency ratio will be calculated by comparing the proportion of the non-productive population to the productive population. The equation for the dependency ratio as follows:

$$Dependency\ Ratio = \frac{31}{69}\ x\ 100\% = 44.93\% \quad (5)$$

The dependency ratio for the head of household population in Wado village is around 44.93 percent. This means that for every 100 individuals in the working-age group, there are 45 people in the non- productive age group. The dependency ratio indicates that the economic dependency of the productive-age community is quite high, with a large proportion of the non-productive population having an impact. The dependency ratio indicates that the dependency of the productive population on the non-productive population, if the proportion of dependency ratio increases, it will indicate an increase in the financial burden that must be borne by the working age population to support the non-productive population. According to Siscawati et al (2020) related to equitable development between the number of men and women, it can be useful in preparing development plans. The measurement is important in determining the proportion of men and women found in some areas and in some situations that can be determined by the age group of the population (Afandi et al., 2023). Then there is the composition of the population according to gender, there are 86 men and 14 women. The male population in Wado Village is 86, while the female population is 14. To determine the sex ratio, calculations were made by comparing the number of males per 100 females using the relevant formula:

$$Sex\ Ratio = \frac{86}{14}\ x\ 100 = 614 \quad (6)$$

The calculation of the sex ratio shows a value of 614, meaning that for every 100 female residents, there are 614 male residents. This indicates that in Wado village, the male population dominates over the female population. The size of the sex ratio in an area is influenced by various factors. First, the sex ratio. Second, mortality patterns also affect the ratio, the sex ratio will decrease. Third, migration patterns Then there is the composition of the population according to the education level of the head of the household (see Table 2).

3.3 Composition of the Population by Level of Education of the Head of Household

The level of education of the population of Wado Village, Kado District, Sumedang Regency varies from elementary school graduates to universities, below is a table of population composition according to the education level of the head of the family based on the results of the research obtained:

Table 2. Composition of the Population by Level of Education of the Head of Household

Last Education of Head of Household	Frequency	Percentage
Elementary school graduate	46	46%
Junior high school graduate	32	32%
High school graduate	14	14%
Vocational school graduate	6	6%
Undergraduate	2	2%
Total	**100**	**100%**

Source: data processed

Table 2 shows the most family heads have a low level of education, with the majority only completing primary and junior secondary school. This indicates the need to improve access to and quality of primary and secondary education. Senior secondary education at senior high schools and vocational schools and universities is very limited, which can hinder the development of skills and competencies needed to improve economic welfare. Khobir et al (2023) states most Indonesian people are graduates of primary education or low-level education. When parents have a low-level educational background, there is an assumption that when children have graduated from elementary school, they are directed to work. But there are differences in the assumptions of other parents who have low-level education, where these parents direct their children to continue their education, so that these children can become more educated children, better in their lives, provide brilliant achievements to their parents, and in the future these children can help and improve the family economy.

3.4 Composition of Population by Level of Education of Children

Nasrah & Elihami (2021) argued the economy is very influential on public awareness of the importance of education, because the economy is the main target for everyone related to the main facilities for everyone who is studying, especially in the field of education. their economy is included in the low level. Efforts can be made to meet daily needs as well as educational needs and community needs so that they can provide encouragement and motivation to their children, so that they can be motivated and interested in continuing to a higher level. The education level of the children of the heads of households in Wado village, Kado sub-district, Sumedang regency, varies and tends to increase, compared to the education level of the heads of households.

Table 3. Composition of the Population by Level of Education of Children

Last Education of Child	Frequency	Percentage
Not in School	10	10%
Elementary school graduate	12	12%
Junior high school graduate	18	18%
High school graduate	25	25%
Vocational school graduate	21	21%
Diploma Graduation	3	3%
Undergraduate	11	11%
Total	**100**	**100%**

Source: data processed

Table 3 shows the last education of the head of the family's children, it is dominated by education at the high school level, this can be shown that the last education of the head of the family's children affected by the construction of the Jatigede reservoir is at a moderate level. Quality secondary education becomes very important in offering access to post-secondary level or higher education, it is a necessary condition in entering the world of work by providing skills and training to adapt to changes in society (UNESCO, 2023). However, low-income countries may experience difficulties in increasing access to secondary education due to the costs and implications of eliminating tuition fees, which are not always affordable. The underlying economic logic that it is costly and difficult to get these children into school has largely been carried out. Many children attend classes every day in schools throughout the developing world. And they gather in schools that have been built with teachers

who have been hired to teach them knowledge (Choi, 2021). College education remains low as economic constraints force most to seek employment immediately after graduating from high school. Children of household heads generally have a higher level of education than their parents, indicating improved access to and awareness of the importance of education. Higher education improves labor productivity and horizons, and encourages more productive actions thanks to awareness of the importance of productivity. The level of education of the workforce has a good impact on effectiveness, because individuals with better education have more insight in improving their performance. Economic conditions are still a major obstacle for children to continue their education to a higher level. Many choose to work after completing secondary education to help the family economy. Before and after the construction of the Jatigede reservoir, affected communities experienced major changes in employment. Many lost their jobs and were forced to change professions to make a living and fulfill the needs of their families.

3.4 Composition of Population by Type of Employment

The type of work of the respondents has differences before and after the inundation of the Jatigede reservoir, besides that the transformation of the job can affect the income they have in supporting the needs of their families. Table 4 shows the comparison between occupations before and after the construction of the Jatigede reservoir, there has been a change in the types of occupations of the community. the various types of occupations recorded include farm laborers, farmers, traders, construction workers, casual daily laborers, timber workers, drivers, factory workers, and private employees. other occupations, which include various professions that are only filled by a few people, have also changed. Before the development, other occupations included ojek pangkalan, village officials, village planning kawur, beko operators, goat cattle farming, PJOK teachers, and the Jatigede hydro sino project. After the development, other occupations include kadus/head of hamlet, kawur desa perencanaan, beko operator, security of the grand mosque, ojek pangkalan, goat cattle farming, Jatigede hydroino project, and odd jobs.

Table 4. Composition of Population by Type of Employment

No	Type of Jobs	Before	Percentage	After	Percentage	Total
1	Farm Laborer	3	3%	3	3%	12
2	Farmer	19	19%	15	15%	68
3	Merchant	21	21%	21	21%	84
4	Building Laborer	12	12%	13	13%	50
5	Casual Laborer	19	19%	21	21%	80
6	Wood Laborer	4	4%	1	1%	10
7	Driver	3	3%	3	3%	12
8	Factory Laborer	1	1%	1	1%	4
9	Private Employee	3	3%	1	1%	8
10	Other	15	15%	21	21%	72
Total		**100**	**100%**	**100**	**100%**	**400**

Source: data processed

After the construction of the Jatigede reservoir, there was a significant change in the type of work of the community. Farmers' occupations decreased, caused by the loss of agricultural land due to evictions. many farmers switched livelihoods from farmers to traders, laborers, and others (Susilowati et al., 2020). The work of construction workers and casual daily laborers has increased because many people who lost their previous permanent jobs turned to this sector to make ends meet. After the construction of the Jatigede reservoir, although the percentage of traders remained the same, their economic conditions changed. Before the construction, traders enjoyed higher incomes due to affordable prices of goods and crowded buyers. After the construction, the prices of goods increased and the number of buyers decreased due to population displacement, which decreased traders' income.

While the link between low-wage employment and workplace poverty is clear, low wages are not always the main reason for being poor. In addition, the risk of workplace poverty increases if employment is unstable, characterized by repeated or long periods of unemployment (Gebel & Gundert, 2023). Changes in employment after the construction of the Jatigede reservoir showed a significant shift in the livelihoods of local people. The loss of agricultural land and permanent jobs forced many people to turn to temporary or casual work. Efforts to improve skills and create new jobs are essential to help affected residents adapt to new economic conditions. The lack of government-

provided jobs due to the increasing population means that the labor force is not fully absorbed, resulting in unemployment (Soleh, 2017). The challenges more complex for employment in the last 5 years, workers enhanced skills and technological knowledge are favored leading to an increase in the income compared to other (Prakosa et al., 2024), and the loss of agricultural land means loss permanents jobs for farmer and farm labor in Wado village due to Jatigede reservoir.

3.5 Unemployment Characteristics

Unemployent in Indonesia are those who are of productive age (15 years - 64 years) and are included in the labor force category who are ready to work, but do not yet have a job because of various factors that occur, such as a high level of competition among workers, loss of opportunities due to internal problems, hampered by age factors, and so on.

Table 5. Characteristics of Unemployment

Characteristics of Unemployment	Feb 2022	Feb 2023	Feb 2024	Changes feb 2022-feb 2023	Changes feb 2023-feb 2024
Open unemployment rate	5.83	5.45	4.82	-0.38	-0.63
Unemployment by Gender					
Male	6.31	5.83	4.96	-0.48	-0.87
Female	5.09	4.86	4.60	-0.23	-0.26
Unemployment by Location					
Urban	7.61	7.11	5.89	-0.50	-1.22
Rural	3.72	3.42	3.37	-0.30	-0.05
Unemployment by Age Group					
15-24 years	17.08	16.46	16.42	-0.62	-0.04
25-59 years	4.29	3.95	3.08	-0.34	-0.87
> 60 years	1.22	1.13	1.14	-0.09	0.01

Source: BPS

Table 5 shows The Open Unemployment Rate (OER) in Indonesia decreased significantly from 5.83 percents in February 2022 to 4.82 percents in February 2024, indicate an improvement in employment. Unemployment in urban areas decreased faster from 7.61 percents to 5.89 percents, while in rural areas it decreased slower from 3.72 percents to 3.37 percents, indicate challenges in rural areas. However, unemployment among 25-59 year olds decreased significantly from 4.29 percents to 3.08 percents indicate an improvement in the productive age group. Dealing with unemployment is not just through one policy or one step, but must use an appropriate policy system, which must be prioritized in the entire process of socio-economic development. because unemployment exists in a market economy and increases to decrease according to the development cycle of the market economy (Huu et al., 2022). increasing and creating employment opportunities to the community. by creating new entrepreneurs, and it is hoped that schools and colleges do not only have the goal of becoming employees, if they create a job so that it can employ labor and can support the role of the authorities by reducing the increasing number of unemployed (Ronchetti & Terriau, 2020). Table 5 the OER across different categories, indicating an improvement in Indonesia's employment. But there are still hurdles to overcome, especially in terms of youth employment and the gap between urban and rural areas. Policies need to focus on increasing employment opportunities for groups that still face high unemployment rates, especially youth and people in rural areas.

3.6 Average Income and Economic Growth Rate

The income of the population is a crucial aspect of family life, where the results of this income can fulfill the needs of the family so that they can be fulfilled. Figure 3 shows the average income of people affected by the inundation of the Jatigede reservoir, regional income refers to the level of income of people in a region and can be assessed from the overall income or average income in the area. regional development always involves a discussion of the level of people's income, because this is a key indicator of economic and social welfare in the area (Mantra, 2000). The average income of the community experienced a gradual decline from Rp. 2.084.946,00 in 2015 to Rp. 1.816.765,00 in 2023. This reflects the significant negative impact of the Jatigede reservoir inundation on the local

economy. Income inequality refers to economic disparities, welfare levels, and earnings between individuals and even households, resulting in unequal income distribution between regions. The Gini index is used to measure this inequality, both through economic measures such as income per individual and GDP, as well as to assess the allocation of income across different sectors and countries (Amdan & Sanjani, 2023). Economic growth is a long-term issue that involves the level of labor capacity, availability of natural resources, and stages of output production for people's income. Continuous economic activity increases the production of industrial goods, infrastructure, and other economic activities. Economic growth is measured through changes in a country's real national income (Oktaviya & Sutikno, 2024).

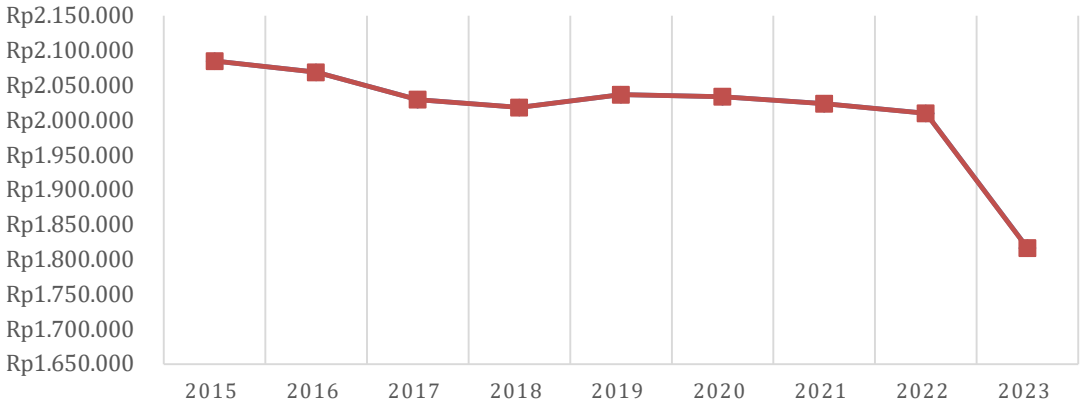

Figure 3. Average Resident Income and Economic Growth Rate

The economic growth rate of the community decreased significantly in the annual period, with an income of around Rp. 1.816.765,00 in 2023. This decline is caused by job losses due to the inundation of the Jatigede reservoir, shifting to professions with uncertain income, and unemployment (Rochmatullah et al., 2020). Factors such as lack of employment, inadequate skills, and absence of business capital worsen the situation. To improve economic conditions and reduce income inequality, intervention through economic development is required. However, with the construction of the Jatigede reservoir, this has a positive impact on businesses around the Jatigede reservoir such as micro, small and medium enterprises (MSMEs), where they sell by selling various merchandise such as food and drinks that are sold to visitors visiting the Jatigede reservoir, visitors are usually crowded on holidays such as red dates or on Sundays, so that if visitors are crowded then the business actor will benefit from the results of the sale.

In addition, the Jatigede reservoir has various tourist attractions in it, tourism activities available in the Jatigede reservoir tourist attraction can affect the economic, cultural, social and ecological environment around it. from the reservoir it can help the government's economy in the tourism sector by promoting and showing tourist attractions to visitors to be interested in visiting and this can help increase in terms of tourism economic growth, then the tourist attraction area can become more widely known by tourists (Chen et al., 2021). There are community activities in economic activities that can help the community's income, by utilizing Jatigede reservoir management based on economic value with reference to reservoir utilization by the local community. Community activities utilize public waters in Jatigede reservoir land for capture fisheries. This capture fishery activity becomes a business activity or a source of livelihood that is beneficial to the surrounding community. The surrounding community in meeting their daily needs, such as small fishermen or traditional fishermen dominate fishing activities in the Jatigede reservoir. economic activities like this can be utilized by the community to improve the economy in the community's income (Shaumi et al., 2022).

3.7 Social Community

Based on the interviews, it shows that although people affected by the inundation of the Jatigede reservoir experience separation from their relatives and neighbors, their social relationships remain good. They use cell phones for long-distance communication and often visit relatives when they have free time. Villages with simple traditions maintain ethics and morals to strengthen community unity and inhibit urbanization. In Coleman's perspective, social relations serve as the potential for collaboration within the community, while Fukuyama adds that social collaboration is based on common ethics and morals (Meitasari, 2017). After being affected by the Jatigede reservoir inundation, the community experienced changes in social relations and had to adapt to a new

environment. According to Nofrianti (2024) social change involves the transformation of social institutions, including norms and habits, and is influenced by modern media that disseminate information quickly and social media can absorb social situations from outside and bring significant changes in people's social and cultural life. Community empowerment is needed to encourage active involvement in decision-making, develop skills, and access enabling factors for their economic and social development. Empowerment is a broad notion in general that can lead to influence over events and important outcomes. Being empowered means understanding and having influence over the personal, social, economic and political forces that can impact one's life (Zamzami & Iwabuchi, 2024).

Broadly speaking, empowerment can be summarized as an action that encourages people's participation through the role of organizations, and people can gain control over their lives, whether in their community or in the wider society (Haugh & O'Carroll, 2019). The concept of community empowerment is usually about the approach of self-reliance, participation and social networks, as well as the preservation of local wisdom values and culture (Putera et al., 2020). The goal of empowerment is to create communities that are independent and sustainable, and able to face obstacles and adjust to their environment (Hasdiansyah, 2023). Community development and empowerment should include all social groups and be community-based, focusing on communities with different characteristics such as similarities in residence, occupation, religion, ethnicity, interests, or hobbies. The resulting policies should accommodate the social capital of these communities. With this method, it is hoped that the government can recognize the potential in each community and work together with all community strengths. The community carries out the Jumsih (Friday Bersih) agenda to clean the surrounding environment, maintain cleanliness, and increase solidarity and cohesiveness. This activity not only serves as an effort to keep the environment clean and healthy, but also as a means of strengthening social relations between other communities, creating a sense of togetherness, and strengthening social networks within the community. Through gotong royong, people learn to depend on each other and work together, strengthen social ties, and foster collective responsibility for the environment. Through gotong royong activities, communities not only maintain the physical cleanliness of their environment but also build strong social foundations, which are essential for community sustainability. Gotong royong is also a learning tool for community members, especially the younger generation, about the importance of cooperation, mutual respect and social responsibility (Kurnia et al., 2023).

4. Conclusion

Based on the research findings of the analysis of the impact of the construction of the Jatigede reservoir in Sumedang Regency on the economic and social decline of the community in Wado Village, it can be stated that the community experienced an economic impact from the construction of the Jatigede reservoir, because the community experienced dissatisfaction with the compensation funds disbursed by the government with a long period of time and not enough and not in accordance with the purchase price of new land located in other villages. Then the community experienced an impact on the economic decline where the community switched livelihoods as well as those who originally worked as farmers then after the construction of the Jatigede reservoir changed jobs to become casual daily laborers, from switching livelihoods if the job has a minimum wage that is not comparable to the old job it will affect the economic income they have, so that income decreases as a result of switching livelihoods and the community becomes vulnerable to experiencing income inequality which refers to the economic gap. The education of the head of the family in the affected communities is at a low level, while the education of the head of the family's children is at a moderate level, indicating an increase in the head of the family's children at the level of education taken.

In addition, the affected community experienced social impacts that occurred as a result of the construction of the Jatigede reservoir, where they moved to a new place of residence because the old residential land was inundated by the reservoir. so they moved to a new place of residence and experienced long-distance relationships with relatives, neighbors who were close together became far apart due to differences in residence areas, then the community adapted to the new environment in the new place of residence. But for the construction of the Jatigede reservoir, there is a positive side where there are micro, small and medium enterprises (MSMEs) in the environment around the Jatigede reservoir, on Sundays or public holidays they usually get the benefits owned by the sellers because visitors are crowded and travel to enjoy the beautiful charm of the Jatigede reservoir and visit MSMEs to buy the food or drinks they want. Jatigede Reservoir has a variety of attractions available, so that it can introduce and promote tourist attractions contained in the Jatigede reservoir so that it can attract

the attention of tourists to visit these locations. In addition, the community utilizes the Jatigede reservoir, to catch fish around the reservoir where the fish are then traded by fishermen to buyers who are interested in buying the fish. Another implication of the study proposed solution that can help improve the economic and social conditions of affected communities include community empowerment, local infrastructure investment, and development of sectors such as tourism, agriculture, and fisheries to create employment opportunities.

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