

Toll Road Development and Environmental Change: A Maqashidi Study at Indralaya – Muara Enim

Muyasaroh¹  & Herlina²

¹ Department of Islamic Education (Bachelor), Institut Agama Islam Al-Quran Al-Ittifaqiah, Indralaya, Indonesia

² Department of Islamic Economics (Bachelor), Institut Agama Islam Al-Quran Al-Ittifaqiah, Indralaya, Indonesia

✉ muyasaroh@iaiqi.ac.id

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Abstract

The Government of Indonesia builds toll roads in many regions of Indonesia, including 119 km of the Indralaya - Muara Enim intersection, to accelerate barrier-free connectivity for the community. This study analyzes the concept of environmental change from the impact of the construction of the toll road on the Indralaya community. This study uses a qualitative approach with an inductive research type. The data were analyzed using NVivo 12 Plus. The results showed that environmental change must be based on the principle of mutual benefit. The construction of toll roads must involve the local community to create conducive conditions. Negative impacts on the environment in the development process must be minimized through dialogue and contributions from the surrounding community. The construction of the Indarala – Muara Enim toll road in general has met the requirements of *ushul al khamsah* or basic needs of *maqashid sharia*. However, there is still a lack of anticipation from this implementation project because there are still complaints from the public, which can be read from respondents' responses. Environmental changes related to the construction of toll roads must use a structured and orderly concept. In this case, the concept of environmental change must be bound by the rules and legislation to anticipate and provide solutions to the negative impacts that occur in the form of minimal

compensation for land or buildings affected by the project at a reasonable price, dealing with contaminated or polluted air and noise quickly and responsively.

Keywords: *Environmental Change; Maqashid Sharia; Society; Toll Road Development*

INTRODUCTION

At the opening of the 1945 Constitution of the Republic of Indonesia, the 4th paragraph explains the achievement of the goals of the Indonesian nation through development. The context is as follows: "Protecting the entire nation and the entire homeland of Indonesia, promoting public welfare, educating the nation's life and participating in carrying out world order based on freedom, eternal peace and social justice". To achieve these national goals, there must be solid cooperation between the government and the people ([Anggraini et al., 2015](#); [Hamzani et al., 2018](#)). Indonesia must be more active in making developments to catch up with other countries that have developed. The development of physical facilities needs to be done to achieve a better quality of life for the nation. Development must be carried out on aspects of community empowerment and infrastructure aspects.

Physical infrastructure development is an integral part of the institutional and economic development of a country that is based on increasing productivity. The emphasis on the infrastructure aspect on the road construction side requires more land or land while taking into account the environmental ecosystem. The implementation of development does not damage the environment of living things and inanimate objects. The implementation of development must take into account the rights of the community. Humans as a living or biotic environment will be affected by development. The concept of environmental change for long-term development is very much needed by always paying attention to

environmental sustainability and human ecology (Theresia, 2014; Adua et al., 2016; Marcos & Valera, 2022).

One of the infrastructure developments that require large areas of land is the construction of toll roads. It aims to realize sustainable socio-economic progress and does not neglect equal rights and upholds the principle of justice for the community. Toll roads are part of the public road network system and are part of the national road network system where users are required to pay tolls with a certain nominal amount in accordance with Law no. 38/2004. The benefits of implementing the construction of toll roads are, among others, to facilitate traffic, increase the usability and efficiency of goods and services distribution services, ease the burden of government funds and increase the distribution of development results and justice. The difference with the highway that can be used for free and freely by the public (Karsaman et al., 2015; Siswoyo, 2020; Iqbal & Pradjoko, 2021).

In Indonesia, the first toll road existed in the 70s and started operating in 1978, namely the Jagorawi Toll Road (connecting Jakarta, Bogor and Ciawi). The authority to operate and operate toll roads lies with the Toll Road Regulatory Agency (BPJT), which includes the regulation, development, management and supervision of toll roads operated by state-owned enterprises, regionally-owned enterprises and private companies. Deputy Minister of Finance (Wamenkeu) Suahasil Nazara explained the importance of the construction of the Trans Sumatra Toll Road (JTTS) to provide a life for the benefit of the local community and the people of Sumatra. The acceleration of infrastructure development encourages an even rate of economic growth, especially in the Sumatra region (Fakhurozi et al., 2020; Afandi & A'yun, 2022).

Currently, the construction of the Indralaya - Muara Enim toll road is divided into 2 sections, namely section I at the Indralaya -

Prabumulih intersection along 65 km and section II is the Prabumulih - Muara Enim area along 54 km. This toll road is the trans Sumatra toll road which consists of 3 (three) corridors, namely Medan - Tebing Tinggi - Sibolga, Padang - Pekanbaru - Dumai and Palembang - Simpang Indralaya - Bengkulu with a total length of 890 km. With the presence of the Simpang Indralaya - Muara Enim toll road, it is hoped that it will be able to shorten the travel time from 4 hours to around 1.5 - 2 hours. The construction of the Simpang Indralaya - Muara Enim toll road is targeted to be completed by the end of 2022. The Toll Road Regulatory Agency has scheduled all roads to be operational in 2024. Section I has progressed 53.09%. As of September 2021, the progress of section II reached 8.69% with a negative deviation of 65.21%. The completion of section II construction will be postponed after 2024. The construction of the toll road will provide great benefits in improving the community's economy and opening more potential in the plantation, agriculture, mining and tourism sectors in the South Sumatra region (Ibad et al., 2021; I. F. Sari et al., 2021; Naeruz et al., 2022; Syaputra & Qibtiyyah, 2022).

Toll roads are public roads and part of the national road network system whose use is required to pay tolls. The construction of toll roads aims to increase the accessibility and capacity of the road network to serve traffic. The construction of toll roads cannot be separated from the physical and non-physical aspects for the community. The physical aspect is related to the environment, while the non-physical aspect is related to the social problems of the community. The surrounding community directly experienced these two aspects and were affected by the construction of the toll road. Many studies have been conducted regarding the construction of toll roads on regional development from the economic and society. The beauty and layout of the city must be in line with the preservation of

natural conditions and the surrounding environment, as explained in Q.S. Ar-Ruum [30]:41 as follows: "Corruption has appeared on land and at sea due to the actions of human hands, so that Allah may feel for them some of the (results of) their actions, so that they will return (to the right path)" (Dien, 1997; Saputra et al., 2021).

The verse above has the meaning that humans as caliphs on this earth to always do good and forbid damaging the environment and invites in maintaining and preserving the natural environment. Humans' carelessness towards the environment will result in humans themselves. The concept of preserving the environment in Islamic law is reforestation by farming. Rasulullah SAW classified people who plant and provide benefits to living things as alms, as explained in the translation of his hadith as follows: "The Messenger of Allah (SAW) said that there is no Muslim who grows a plant or sows a seed, and birds or livestock eat the plant, except for him who gets the reward of alms". (Narrated by Bukhari, Muslim and Tirmidhi from Anas) (Fick, 2005; Mohamed & Shafiai, 2021).

It is the human obligation to maintain and preserve the environment in a sustainable manner so that future generations can still enjoy the beauty and beauty of this universe. Today's needs must be able to be developed for future needs, which is an environmental program in Indonesia. This study seeks to find and formulate the concept of environmental change on the positive and negative impacts of the construction of the Indralaya - Muara Enim toll road. The concept of environmental change in the context of fiqh is closely related to the concept of *maslahah* and side by side with *Maqashid Syariah*. Concretely, *maslahah* can be interpreted as the overall maintenance or protection of the 5 (five) primary needs (*Usul Al-Khamsah*), namely the maintenance or protection of religion (*hifzh Al-Din*), the maintenance of the soul (*Hifzh Al-Nafz*), of the mind (*Hifzh Al-Aql*), protection of offspring (*Hifzh Al-Nasl*) and

maintenance of offspring (Hifzh Al-Maal). Usul Al-Khamsah is the goal of sharia (Maqashid Al-Shari'ah) that must be maintained and maintained. This fiqh is the basis for reasoning on environmental preservation through ushul al fiqh.

Environmental issues have become global issues from the beginning of human life (bi'ah = environment). In Islamic scholarship, it is known as fiqh bi'ah, namely provisions derived from several detailed arguments about human behavior towards the environment in achieving the benefit of the population on earth by keeping it away from damage. Environmental issues have become a discourse. Evidence of the stagnation of fiqh thought in this context is the absence of a format for environmental fiqh (fiqh al-bi'ah) which is structured methodically and systematically so that environmental crises and problems in Muslim society are often addressed theologically.

The emergence of a mindset as disaster theology which considers natural phenomena of natural disasters as a form of God's destiny and considers them as ordinary or natural phenomena. This mindset makes people fatally shackled in the face of various environmental changes. In understanding bi'ah fiqh, one must seriously examine the maqashid sharia in depth because this Fiqh does not yet have a detailed basic framework about halal and haram. The concept of environmental change must be formed in the maqashid sharia corridor in the conditions of implementation and construction of toll roads along with the impacts that occur to find out how far the preservation of nature is maintained, how humans should behave and behave in the context of a polluted environment, and how humans must continue to live happily and prosperously in the world and the hereafter with the environmental changes that occur.

METHOD

The current study can be classified as field research based on its location (Malsch & Salterio, 2016; Crump, 2020). The study used qualitative, while the analysis of findings was strengthened by using a pie chart, which illustrates the findings in the field. The research in the article is more about evaluating the impact of toll road development which has been happening lately in Indonesia. Emphasis is on finding the concept of environmental change by using a qualitative approach with the type and research strategy, namely case studies (Potter et al., 2010; Petters et al., 2019).

Instruments and techniques for collecting and extracting data using participant observers, snowball sampling and planned - structured interviews. The structured-planned interview is a form of detailed and systematic interview that is planned according to a certain pattern and various questions that have been prepared. The number of respondents as many as 41 people. The time of the study was carried out in November 2021. Collection and analysis of data from respondents and relevant references. Some studies use analysis tools using the QSR International NVivo (2018). The presentation of the data uses narration and is descriptively strengthened in the perspective of *maqashid* of *sharia*.

RESULTS AND DISCUSSION

Toll Road Development and Maqashid al-Shariah

Infrastructure development is the driving force for national development. The existence of adequate infrastructure will contribute to the smooth production and distribution of goods and services as well as increase the country's economic growth. Infrastructure also encourages foreign and domestic investors to invest in Indonesia. A well-managed infrastructure development will

have a double effect in the long term, one of which is by controlling risk management correctly and accurately (Sahoo, 2012; Munir & Iftikhar, 2021).

The activities of implementing infrastructure development have both positive and negative impacts. The negative impacts that are often caused include polluting the environment, namely producing waste, and damaging the environment. The integration of Islamic law in regulating the business sphere is very much needed so that businessmen are better able to introspect themselves. The concept of environmental change in the perspective of maqashid sharia will direct businessmen to pay attention to the benefit of society and the environment (Erwaedy et al., 2021; Yahya & Nasrulloh, 2022). One example of infrastructure development is the construction of toll roads. The impacts that are often felt by the surrounding community are related to the replacement of land affected by road construction, the potential for displacing residents to other areas, noise, and air pollution due to project implementation. The construction of toll roads must pay attention to the condition of productive land and the livelihoods of the surrounding community (Kurniawan et al., 2022).

Environmental changes and pollution in Indonesia have reached an alarming stage (Herlina, 2017; Khairina et al., 2020). The environment is changing and polluted due to human activities, including infrastructure development. The essence of an infrastructure development such as the construction of a toll road is the reciprocal relationship of the community to the implementation of the development. Companies that carry out work on toll road construction projects must have a form of concern for environmental problems by paying attention and being able to solve various problems that occur. The important thing to do is support for environmental change. Every activity to increase the efficiency of infrastructure development must be in line with the consistency of

maintaining environmental quality, including water, air and noise pollution which has a very bad impact on the environment and society.

There are two factors that cause changes and damage to the environment and nature, namely due to natural events and human actions (Senduk et al., 2019; Helton & Head, 2012). Factors caused by natural events are floods, droughts for a long time, volcanic eruptions, landslides, and earthquakes. While factors resulting from human actions include natural degradation, changes, and environmental pollution due to development. Changes and environmental damage can be minimized by avoiding environmental degradation and pollution by humans. The human community does not carry out activities that change and damage the environment causing the preservation of the universe. Humans on the surface of this earth are assigned as caliphs of Allah SWT who carry out the duties and obligations to maintain, preserve nature, take advantage of, and manage natural resources to realize peace and prosperity. Humans are always required to maintain the safety of themselves, the environment and society in every activity. The relationship that is closely related to each other between nature, the environment, and humans (Mohammed, 2007; Safei, 2016; Jadda et al., 2021).

Preservation of the environment by maintaining or caring for it (*hifzh al-bi'ah*) or in another sense *mashlahah mu'tabarah* is included in the category of the concept of *mashlahah mursalah* (Zuhdi, 2015; Suryani, 2017). The verses in the Qur'an do not explain in detail about operational techniques, namely in the form of attitudes or actions for prohibiting and protecting the environment but only explaining the principles of environmental conservation and restoration. The mujtahids play a very important role in deciding how to deal with changes or pollution or environmental damage in the form of targeted and efficient solutions. The living environment

in this universe is the breath of all living things, so there must be serious care and maintenance on an ongoing basis.

Al-Syathibi classifies *maslahah* into three: *dharuriyah*, *hajiyyah*, and *tahsiniah*. *Maslahah dharurriyah* was classified as the main need or the strongest *maslahah* or *aqwa al maratib*. This need must be met because it is urgent or emergency. If this need is not met, it will threaten human life. Protection of five basic needs (*ushul al-khamsah*) religion, soul, mind, lineage, and property. The second *maslahah* is *hajiyyah*, which is a secondary need. This need is created not to endanger human life but will cause difficulties. Islamic law will play a role in dealing with and overcoming these difficulties. In Islamic law, the term *rukhsah* or relief is known to lighten the burden with conditions set by the scholars. This form of *maslahah* must be implemented because if it is not carried out it will cause difficulties (*masyaqqah*). Difficulties or *masyaqqah* do not lead to damage and destruction (*mafsadah*). The third *maslahah* is *tahsiniyyah* which is flexible and complementary. In other words, if the needs are not met, it will not threaten the existence of *ushul al-khamsah* (basic needs) (Opwis, 2005; Yusuf, 2020).

The three *maslahahs* mentioned above have a significant correlation with the sharia formulation. The first formulation is that sharia is realized based on rejecting harm and bringing benefit. Allah SWT has sent down orders to be obeyed and imposed prohibitions so that His servants are shunned. The second formulation, namely sharia is always closely related to benefit. Islam teaches the Muslim community to do good and stay away from evil. The third sharia formulation is that there is no conflict between sharia and benefit. The final formulation is that Islamic law always shows benefit in every condition or situation. Allah SWT guarantees that the benefits that lie in sharia will not cause damage and harm. The conclusion of *maslahah* is an act or legal treatment that has benefits for all humans

as a standard for interpreting universal Islamic law to be able to provide freedom of movement for Islamic legal thought in answering various environmental problems and some contemporary issues (Syarif & Ahmad, 2016; Khatib, 2018).

Humans as servants of God must maintain the environment because it is an obligation and part of faith. There are two rules that underlie the maintenance of this environment. The first rule states that everything that can determine the perfection of the implementation of an obligation will be obligatory and the second rule dictates that every means having the same legal status as the action or treatment that is the goal (Sofwan, 2018; Rambe, 2022). The principle that underlies the maintenance of the universe is the benefit of humans, while the maintenance of nature itself is a universal moral message conveyed by Allah SWT. The Maliki school explains that it is obligatory and highly recommended for everything that is not explicitly stated in the religious texts but has the right benefits and objectives.

Respondents' Perception of Toll Road Development

The results of the study show the description and condition of residents towards the construction of the Indralaya - Muara Enim toll road. The number of respondents as many as 41 people, does not represent the total population of Indralaya and is only limited to residents around the development. In the interview, the researcher divided into five groups representing the community. The information provided is a description of the researcher's observations and structured interviews. The question material has been processed so that it is able to represent the various impacts and influences of the construction of this toll road. In the study, there are notes of researchers' observations for other reasons so that air contamination

occurs, noise contamination becomes pollution for the surrounding community and damage to houses.

Figure 1 shows that the words “lack” and “anticipate” are the most frequently used words for reasons of pollution and damage related to the construction of the Indralaya-Muara Enim toll road. Lack of anticipation from the implementation of this toll road project resulted in the dissatisfaction of the surrounding community with the development. This requires serious handling of pre-toll road construction in the form of anticipating a very mature plan so that it is optimally after its implementation.

Figure 1

Word cloud of respondents' answers on construction of the Indralaya-Muara Enim toll road

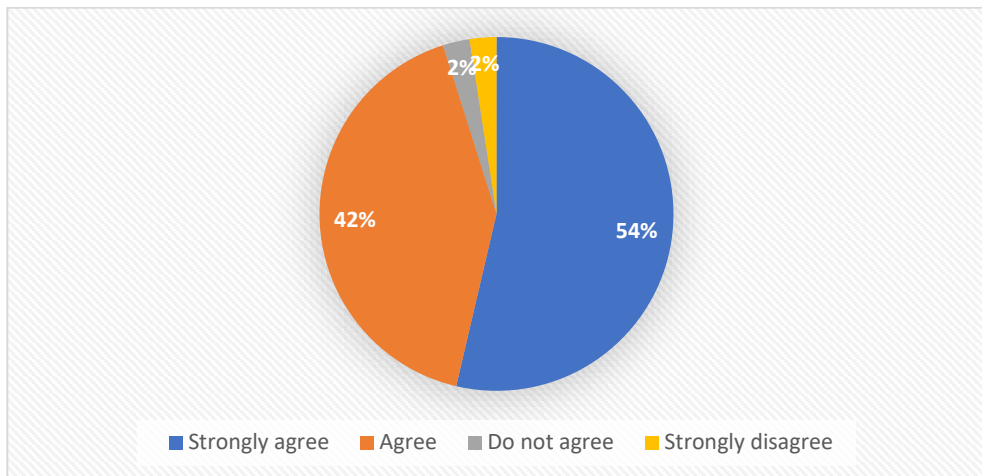


Benefits of Toll Road

Figure 2 shows that respondents with an assessment of strongly agree with 54% of the four questions asked. This indicates that the community of residents represented by the respondents gave an evaluation of the construction of toll roads that have many benefits for the community. The respondent state the benefits of toll road as easy access to travel without obstacles; shorten the travel time; reduce the number of accidents because the roads are good; and the environment around the toll road becomes neat.

Figure 2

Respondents' answer regarding benefits of toll road



Source: Primary data.

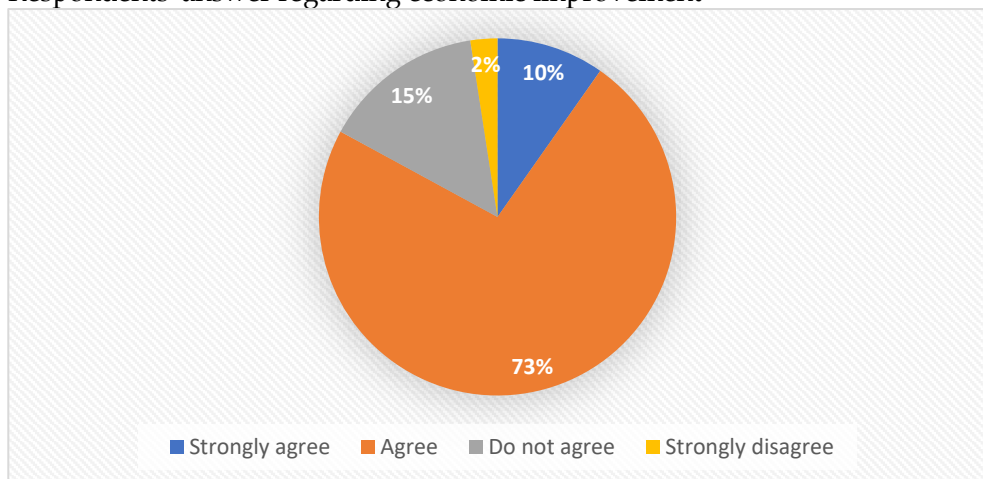
The construction of toll roads has benefits in environmental change. Based on Law No. 32 of 2009 explains the notion of the environment as a unitary space with all objects that affect nature, the continuity of life and human welfare. The number of respondents who strongly agree with 54% of the benefits of the construction of the Indralaya - Muara Enim toll road indicates that it is sufficient to achieve *ushul al-khamsah* or basic needs in *maqashid al-shariah*. The use of human reason or mind in this toll road construction project can

still maintain and maintain a high response from the surrounding community (including religion, life, property) and their natural environment in the present and in the future (including descendants). Respondents stated that they disagreed with 5% of the benefits of toll road construction, indicating that the benefits felt by the community were not optimal. This is usually related to compensation and environmental pollution that are still felt by the community around the toll road construction.

Economic Improvement

The increase in the economy will be directly proportional to the construction of toll roads. This is clarified in the graph which is the result of interviews with respondents reaching 73% agreeing as in **Figure 3**. Some statements from respondents show economic behind toll road development as opportunity to open a small traditional culinary on the edge of the toll road; rent a house and rent for toll officers to be full; and shops, small stalls, Indomart and Alfamart have increased buyers

Figure 3
Respondents' answer regarding economic improvement



Source: Primary data.

The response was quite high from the surrounding community, 73% said they strongly agreed and 15% agreed that economic improvement meant that the toll road project was beneficial and had benefits. The circulation of money in the community before the project was started was normal and only enough for daily needs. However, with the implementation of this toll road construction, the enthusiasm of the community to open shops and increase the products sold has increased because the number of employees working on the project is quite large and almost all of them buy daily necessities around the project area.

Communities around toll road construction feel more positive impact on the economy. This is due to the replacement of land affected by development that exceeds the fair market value so that livelihoods are transferred to other areas by opening shops or the like that are wider and more complete. The impact felt by other communities is opening a small shop or a temporary grocery to meet the needs of the workers. Another opportunity is to open a house rental service for the residence of the workers or employees related to the construction of toll roads. The existence of existing shops has increased turnover compared to before the construction of the road due to the fulfillment of the needs of workers and employees who work or are on duty.

The number of respondents stated that they strongly disagreed only 2% and disagreed by 10% on the economic improvement due to the construction of this toll road because the pre- and post-toll road construction had a positive effect on improving the community's economy. In other words, the community is helped by the construction of toll roads from an economic perspective. The total disagreement of 12% indicates that there are still a small number of people who have not felt an increase in the family economy. This means that the economic improvement felt by the surrounding

community has not been evenly distributed. Directing construction project workers to conduct transactions in shops, stalls or stalls around the toll road environment and optimizing residents' houses for rent as a place to live.

The conventional economic paradigm has two main objectives of economic improvement and development, namely increasing real income per capita and enforcing equitable distribution of income (Lefeber, 1974; Dubé et al., 2014; Pelsa & Balina, 2022). In fact, the biggest problem in the modern economy, especially in developing countries, is the low income of the people and there is a widening gap between rich and poor communities. The main problem is inequality in the distribution of wealth income. Islam defines an increase in economic development and does not deny the aspect of individual income as one of the indicators. The goal of Islamic economics is to create a prosperous society by carrying out religious obligations perfectly. Islam emphasizes the importance of distributing wealth equally and fairly. Islam creates specific instruments to achieve distribution through the mechanism of zakat, infaq and alms.

Economic improvement and development must remain oriented towards increasing individual commitment to religion. In other words, there must be a correlation between economic growth and development and increased fulfillment of religious obligations. The slogan of improvement in economic development must have an Islamic nuance by prioritizing the guidance of Islamic teachings. The objectives of the improvement policy in Islamic economic development are as follows (Sadeq, 1987; Hameed M. Bashir, 2002; Ahmad, 2004). Human resource development should make humans the main object of the policy of increasing and developing the Islamic economy. Development of a relationship structure should be based on cooperation. Prioritizing the expenditure of necessities

(*dharruriyat*) rather than complementary (*kamaliyat*) and luxury (*tahsiniyat*) goods to maintain balance sheets. Improving the quality of life by creating jobs. Making balanced development, in the case of the construction of toll roads, it must be in line with the increase in the community's economy. The need for development of new facilities, infrastructure, and technology. And reducing foreign debt and dependence on other countries in terms of loans, especially in infrastructure development.

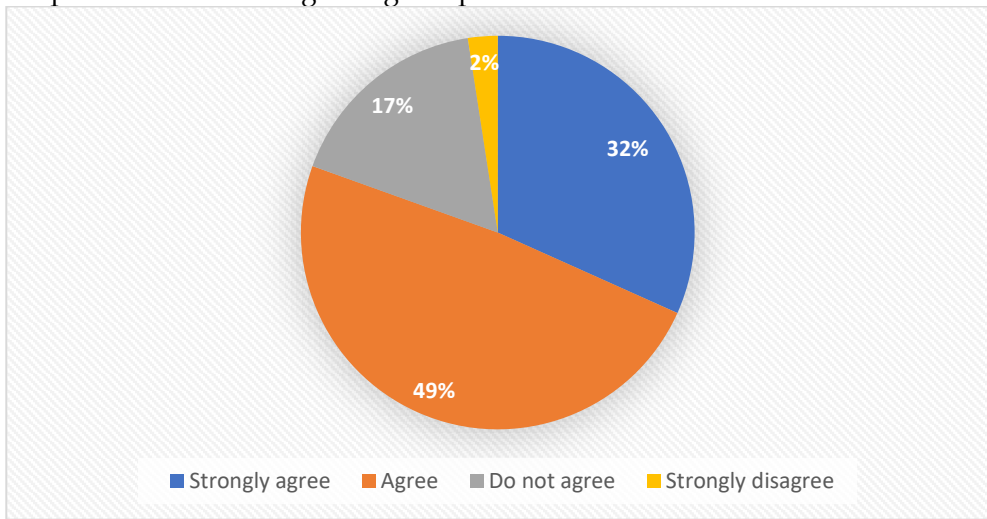
The concept of environmental change that has occurred has fulfilled the elements of *ushul al-khamsah* of *maqashid al-shariah*. The maintenance of religion, soul, mind, lineage, and property is sufficiently realized and felt by the community around the construction of the Indralaya - Muara Enim toll road. However, the respondent's statement on this economic improvement is not optimal because it is quite high in terms of disagreement, namely 15% responding to disagree and 2% strongly disagree. In this case, the government, and contractors as the executor of the toll road construction project must be more cooperative and mingle with the surrounding community to get the right solution to overcome the dissatisfaction of the surrounding community.

Compensation

The basic and very important thing from the implementation of toll roads is that there must be appropriate and at least commensurate compensation for the land or buildings affected by the development. The results of the study make it clear that 49% of respondents agree and 32% strongly agree on the existence of land compensation as in [Figure 4](#). This indicates that the community is quite appreciative of the implementation of land compensation in the construction of the Indralaya - Muara Enim toll road. Respondents statement regarding land compensation can be explain as: receive

compensation for land and building prices greater than the usual market price; can build a bigger and more luxurious house; can donate to the construction of worship facilities; can build a shop bigger than the shop before; and slightly affected by land, but the entire existing land area is replaced.

Figure 4
Respondents' answer regarding compensation



Source: Primary data.

In the compensation process, the community gets an unexpected benefit because the replacement of land or land or buildings exceeds the fair market value. The number of responses stating strongly disagree is only 2% because it is indicated that they do not have land affected by toll road construction. Indications of dissatisfaction with a small part of the community for land replacement can be seen in the responses of respondents reaching 17% stating that they do not agree. The approach and cooperative method should be carried out between the local government, contractors, and the community around the toll road construction. The large amount of compensation makes the community able and able to donate more, which is channeled to the construction of

houses of worship and complete facilities of worship. Another positive impact, the community can build shops or the like with a wider size. This land replacement is on average large. In a sense, the area of land that is slightly affected by development is compensated for all the land owned.

A prosperous society in the view of Islamic law is assessed from material and non-material measures, including the fulfillment of spiritual needs, maintaining moral values, and creating social harmony. Two criteria for a prosperous society are the fulfillment of basic needs, the preservation and protection of religion, soul, mind, lineage, and property. The correlation between toll road construction and a good Islamic economic system is at the point where there is an increase in welfare after the implementation of development projects. Islamic economics requires that all economic activities be carried out with the principle of benefit (welfare) while still balancing aspects of the world and the hereafter. Respondents' responses to compensation were not optimal because there were still disagreements of 17% stating that they did not agree and 2% strongly disagreed. This indicates that there is still community dissatisfaction in the case of land compensation or in other words it is not evenly distributed regarding the nominal received by the surrounding community for the land affected by the construction of the Indralaya - Muara Enim toll road. The local or local government and contractors as project implementers must be sensitive to community complaints by conducting *blusukan* against communities that are lacking or dissatisfied with the compensation for the land. The next action must be responsive and quickly respond to the dissatisfaction by fulfilling the wishes of the surrounding community.

The existence of land is an important natural resource for the Indonesian state. Land issues have not been resolved in Indonesian law. Taking ownership of land is a problem that is often encountered

in the community and is not in accordance with the nominal replacement. Land plays a central role in toll road or other infrastructure development projects and the life of the Indonesian economy. This turmoil caused an increase in public respect for land. The community gives an inflated price for land along with the increasing number of residents. Land is an important factor supporting the life and welfare of the community so that the concept of property rights determines the structure of the life of the state and nation (Diver et al., 2019; Fast et al., 2021). Most countries recognize the absolute right of individuals to land ownership which is called material rights. The most important material right is ownership. Violation of the right to ownership can occur because of the rights of others in writing or unwritten. Land issues under development are quite sensitive. Increased development makes land a most important need.

Land contains economic, social, political, and legal aspects. The need for land for development is a serious problem if it does not have the right solution because it will disrupt the stability of the community. Land tenure rights are legal relations that give the authority to do something against legal subjects, while the legal object is the land they control. From the authority perspective, according to the *Undang-Undang Pokok Agraria* (Law on Agrarian Affairs) concerning land tenure rights which have special authority, namely the authority of public and civil nature, including the rights of the Indonesian nation (article 1 of the Law on Agrarian Affairs) (Bakri, 2008; I. Sari, 2020). This shows that the relationship is permanent between the Indonesian people and the land located in the Indonesian state, with the subject being the Indonesian nation. The rights of the Indonesian people are the highest rights to control over land in Indonesia. The right to control the state (article 2 of the Law on Agrarian Affairs). The state is an organization that has the

highest power for all the people to carry out the task of leading and regulating the authority of the Indonesian nation. The right to control this state will always be able to control or direct the functions of the earth, water, and air according to government policy. The state has primary control as the governing body for regulate and organize the allotment of use and maintenance; determine and regulate the rights of the subject of land law; and regulate legal relations between individuals and legal actions regarding land ownership.

Air Contamination

The environment always has serious, complex, and global problems. Ecological imbalances, erosion and the erosion of the ozone layer are very dangerous for survival. Environmental damage due to changes in almost all parts of Indonesia. One of the triggers for environmental change and pollution is the construction of toll roads. Human behavior that is lacking or irresponsible causes environmental problems that require very serious attention. Islam is a comprehensive and complete religion that pays attention to all human needs in life and has rules for all life issues, including environmental problems. Many verses in the Qur'an and Hadith explain the problems and rules of the relationship between humans and the natural environment.

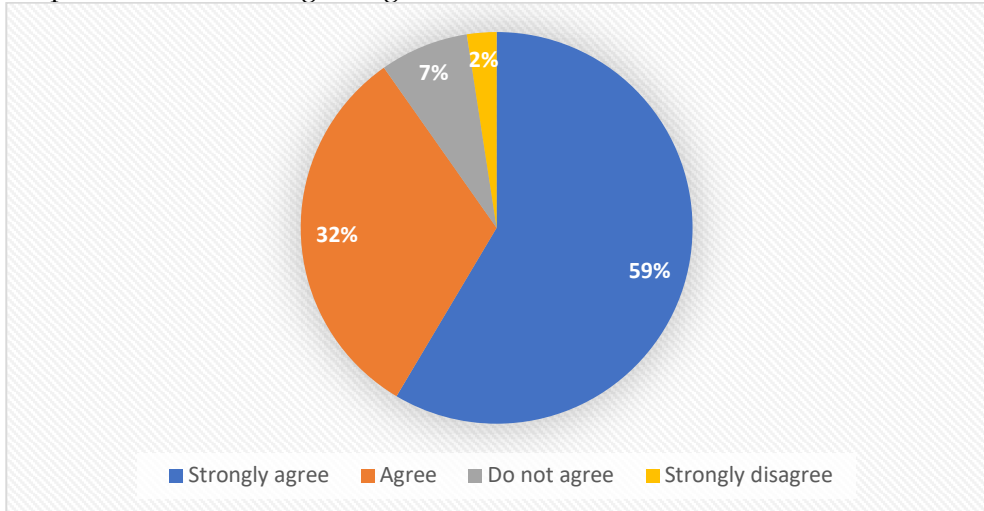
Pollution and air pollution related to the construction of toll roads can cause legal problems. Air pollution control has not been carried out optimally and has not been effective because it is related to the legal structure that has a bureaucratic mindset that tends to be long and quite convoluted. Contractors are still taking advantage of existing legal substance loopholes. The impact that occurs in schools, campuses and the community environment cause a lot of dust that enters the room to interfere with teaching and learning activities or processes. Scattered dust and thick smoke cause unpleasant odors,

coughing and shortness of breath. This is a health hazard, especially for small children and must be anticipated and minimized immediately. Pollution of environmental ecology that occurs in various parts of the world with several different case models but remains in the same context, which moves researchers to find and formulate provisions and regulations on the environment from the impacts it causes. Ecology is a system formed by the reciprocal relationship between living things and their environment. The gap between living things and the environment is indispensable for human well-being. Ecosystems are formed from living and non-living components in a place that interact with each other to form an orderly unit.

The basis of environmental law in Indonesia has been formed with several referendums and has been refined in the form of the constitution of the Republic of Indonesia. The core of the material lies in the effort to advance the welfare of the Indonesian people. Law Number 32 of 2009 is the basis for the environment and its management in Indonesia. The legal basis is a strong and intact system for managing the environment in Indonesia. Indonesia's national law on the environment provides several subsystems listed in it consisting of: Environmental Management Law; Environmental Procedural Law; Environmental Civil Law; Environmental Criminal Law; and International Environmental Law.

Figure 5

Respondents' answer regarding air contamination



Source: Primary data.

Environmental pollution is a real problem that must be responsive in handling it. From the results of the study, as in **Figure 5**, the dominant respondents stated that they strongly agree with the presence of contaminated air, which is 59%, the responses agree as much as 32% while strongly disagree only 2% and 7% disagree because the respondents are quite far from the toll road construction area. Reducing air pollution by, among other things, spraying or sprinkling water around locations and roads that trucks or cars pass and covering soil cargo with tarpaulins.

Protecting the environment is a human obligation, especially in this case the local government and project implementers must be very serious about paying attention to the life of living things. Carelessness in protecting the environment will have fatal consequences for public health. Preventive actions and appropriate and correct solutions must be carried out quickly and responsively. Respondents state some answers regarding air contamination as follow: polluted with scattered dust; the floor of the house around

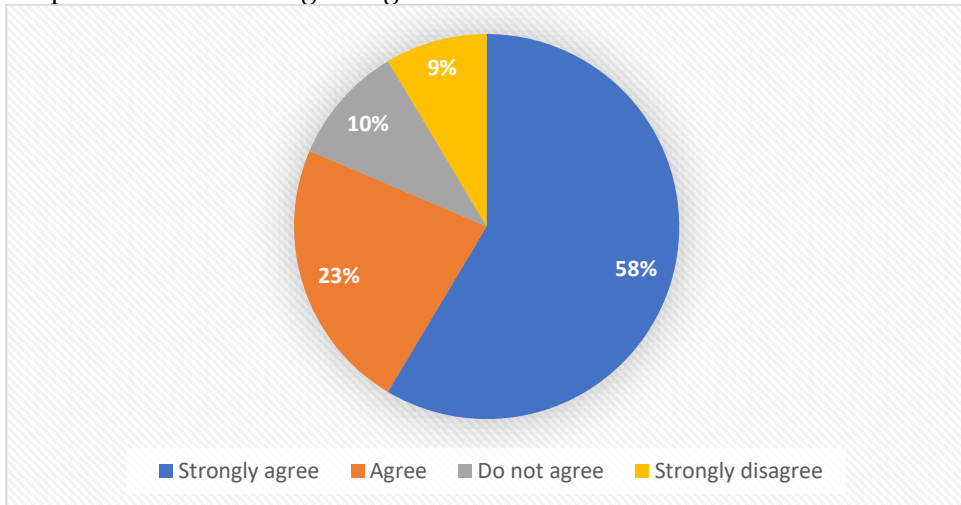
the toll road is always covered with dust; there is a thick smell of dust in the respiratory cavity; THE smell of smoke is near; and the air around the highway area is black.

Sound Contamination

Another impact of environmental pollution is noise pollution caused by cars and trucks transporting goods or materials such as transporting excavated soil. Air pollution can be found in everyday life, especially in urban areas and can cause health problems, including hearing problems, heart problems, sleep disorders. The loud and noisy sound generated from vehicle engines; toll road construction projects is very disturbing to residents. Here are some statements about noise contamination due to toll road construction: noisy noise from an empty cargo car moving fast; noise when welding; and noise spilling things from the car. The results of the study illustrated in [Figure 6](#) show that respondents more strongly agree with the presence of noise contamination in the form of noise related to toll road construction, reaching 58% and agreeing by 23%. Statements strongly disagree by 9% and up to 10% respond to disagree. because they think that noise pollution is a normal and natural thing from an infrastructure development. Respondents' responses stated that they disagreed with a total of 19% indicating that there were serious public complaints about this noise contamination, especially among the elderly and toddlers.

Figure 6

Respondents' answer regarding sound contamination



Source: Primary data.

The bad effects of noise pollution include hearing problems, sleep disorders, cognitive disorders, cardiovascular disease, and mental disorders (Stansfeld & Matheson, 2003; Basner et al., 2014; Halperin, 2014; Gupta et al., 2018). Noise pollution has a high risk of hearing loss, especially at sound intensity that exceeds 75-85 decibels (dB) for a long time. The noise of goods cars with fast lanes and spilling goods has an intensity of 80 dB, while the sound of welding can reach 110 dB. Sounds with an intensity above normal can cause ringing in the ears or tinnitus (still temporary), but if it lasts a long time, it becomes permanent. Hearing loss due to noise pollution results in less able to understand speech and difficulty concentrating. Sleep becomes quality by taking 7-9 hours per day for adults. The ability to sleep quality affects the body and mental health. Sound intensity above 33 dB at night can trigger the body's natural reactions and disrupt sleep quality. Sleep quality can also affect mood. Adequate sleep will reduce and eliminate stress and a better quality of life. Noise that is heard permanently and in the long term greatly

affects cognitive abilities, learning and thinking in all age groups. The habit of hearing whispers and noisy voices has a higher risk of having difficulty remembering, concentrating, and managing emotions, especially in children. In infants and toddlers, it can cause speech delays. In a study explained that air pollution in the long term can affect learning abilities.

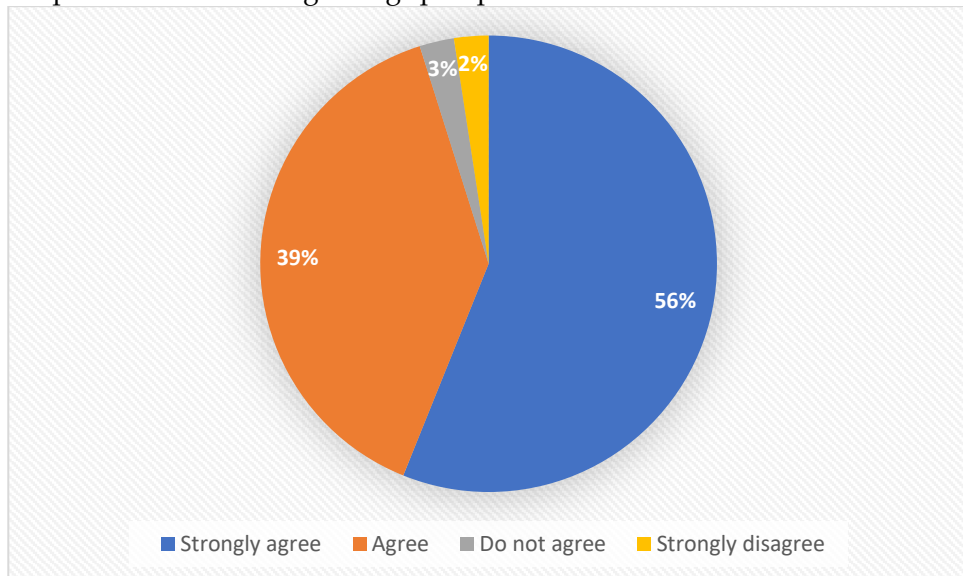
Furthermore, noise pollution can cause cardiovascular disorders, which are diseases related to the heart and blood vessels. Sleep makes the body rest and repair damaged tissue and gather energy again. Disrupted sleep quality will cause a decrease in the function of the body's organs, including the heart and blood vessels. Noisy sound with an intensity above 65 dB for a long period of time will activate the body's response to stress in the form of the production of the hormone cortisol (stress hormone) and result in an increase in blood pressure, blood viscosity and heart rate. Mental disorders can occur due to noise pollution. Mental disorders that occur in the form of unstable emotional anxiety, stress, aggressive behavior, and other psychiatric problems. Mental disorders are prone to occur in pregnant women and newborns. Prevention is done by protecting the ears during activities, such as using earplugs.

Responds to Spun Pile Installation

The results of the study indicate that the respondents' statements are more dominant and strongly agree with the perceived impact of the installation of spun pile in the construction of toll roads. The assessment in [Figure 7](#) reached 56%. Responses of respondents agreed by 39%. This data indicates that the community agrees with the construction of the Indralaya – Muara Enim toll road because they are aware of and understand the benefits, but the disturbance caused by the installation of earth nails in the project is still felt by the surrounding community with a statement of

disapproval reaching 5%. The disturbance in the installation of earth nails was felt, especially the vibrations and cracks in the walls of houses and other facilities owned by residents. The process of installing earth nails related to the construction of toll roads is very much felt by the surrounding community, especially there is damage to the houses of residents.

Figure 7
Respondents' answer regarding spun pile installation



Source: Primary data.

The parts of the house that were damaged were the walls, floors, and doors. People also feel the vibrations and feel swinging during the process of installing the earth nails. Severe conditions occur when the soil sinks, causing the tiled floor to collapse. In this case, the contractor should before carrying out the process of installing the earth nails to anticipate these conditions, by documenting the houses of local residents so that when the process of installing earth nails occurs, the house is damaged, the contractor must be responsive and quickly find solutions to repair people's

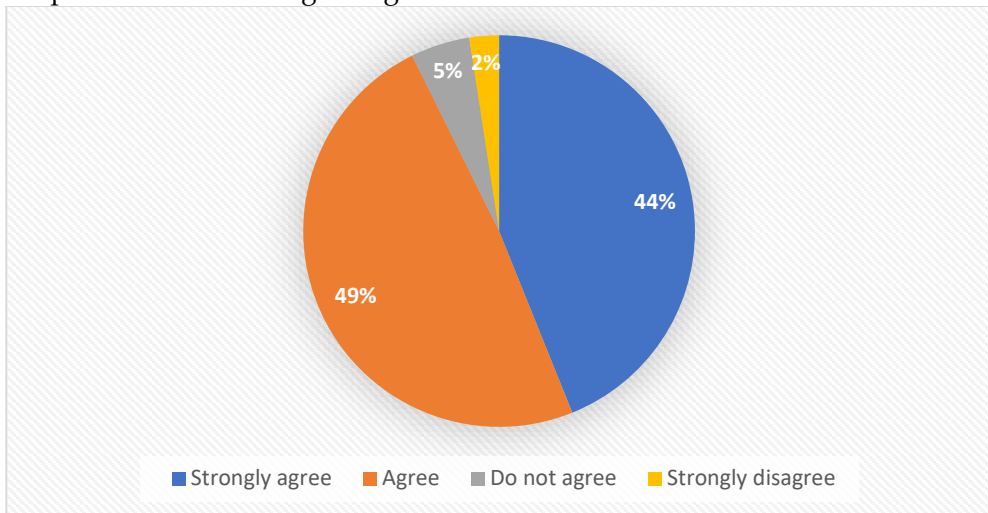
houses or replace them. Some of the questions asked to the respondents were as follows: cracks in the walls of the house; split the wall of the house; doors and glass vibrate like an earthquake; the sinking of the ceramics is due to the sinking of the soil; and feels on a ship when you are on the toilet. The installation of spun pile causes a loud noise, strong vibrations and a lot of dust to scatter. This condition is very disturbing to the community. Disruption of the work on the earth nail or pile installation project causes a loud bang like an earthquake.

Health Issues

As in [Figure 8](#), respondents stated that 49% agreed, a total of 44% responded strongly agreeing to the health problems caused by the installation of spun pile. Only 2% strongly disagreed and 5% gave an agree response because the respondents, activities in the toll road construction area were not currently in the implementation process and their domicile was far away from the project site. The concept of environmental change from the construction of this toll road must be taken very seriously because it is closely related to public health. The goal of sharia to save living beings due to infrastructure development must be put forward. When the safety of human life is threatened, the protection of religion, reason, lineage, and property will be neglected so that the objectives of sharia are not achieved perfectly. The community around the development must act quickly and report the current conditions regarding the negative impacts of the implementation of development projects so that local governments can act quickly and appropriately. The project implementer or contactor must be responsible and provide the most appropriate solution to the negative impacts felt by the community and the environment. To find out more in detail about the questions asked to respondents, the following is the explanation: very

deafening sound; feels in the chest vibrate; feet on the earth feels an earthquake; a gripping fear; want to move house; and baby crying and restless.

Figure 8
Respondents' answer regarding health issues



Source: Primary data.

The authorities (government, Ministry of Public Works and Public Housing of Republic of Indonesia, contractors) who carry out toll road construction projects must anticipate the negative effects of implementation projects because they have an impact on the community and the environment. In this case, the government must create a concept of environmental change in the form of binding rules and provisions. With the toll road construction project, it is necessary to maintain the environment. The environment and society are maintained means the same as maintaining religion, soul, mind, lineage, and property, in accordance with the concept of environmental fiqh, namely *maslahah* and *maqashid al-shariah*.

Maqashid al-shariah itself is a concept to find out the values and goals that contain shariah and are implied in the Qur'an and Hadith. Allah SWT determines that the goal of humans is for the benefit or

goodness and welfare of humans in this world and the hereafter. Achievement of benefit must meet primary needs (*dharuriyah*), complete secondary needs (*hajiyyah*) and tertiary needs (*tahsiniat* or *kamaliat*). Synchronization between benefit and *maqashid sharia*, namely rejecting harm and attracting benefits (Muamar & Alparisi, 2017; Kusnan et al., 2022). The two parts of the benefit are divided into two: *dharuriyah* (core or principal) and *ghairu dharuriyah* (not classified as basic but important and cannot be separated). The essence of the value of *maqashid al-shariah* in the concept of environmental change in the construction of the Indralaya - Muara Enim toll road is that the environment is a priceless treasure and a gift from Allah SWT to living things in this nature. Humans as caliphs and creatures of the highest degree must be able to maintain and preserve in a sustainable manner.

The correlation of the concept of environmental change in the perspective of *maqashid al-shariah* from the impact of the construction of the Indralaya - Muara Enim toll road can be explained as follows. To maintaining the religion (*hifdz al-din*), the residents, especially those living in toll road areas, must obey religion and make religion their way of life. By implementing the provisions and rules of Allah SWT and Rasulullah SAW, an environment that provides goodness and benefits for all mankind will be created. To maintain the soul (*hifdz al-nafs*), the residents must not destroy the ecosystem. Islamic law does not condone environmental damage. To maintain the intellect (*hifdz al-aql*), the residents should follow the gift from Allah SWT in the form of common sense and brilliant ideas to provide goodness and benefit to living beings in this world and the hereafter. Common sense always creates peace, prosperity and safety for the environment in this world. To maintain the offspring (*hifdz al-nasl*), Islamic teachings strongly support the understanding of religion for the younger generation and society in general. To maintain the

wealth (*hifdz al-mal*), humans as the highest degree must be able to maintain, maintain this universe by preserving the environment in a sustainable manner.

Besides that, maintaining the environment is the most important thing because there is a very close relationship between environmental ecosystems and living things. The existence of human life will be threatened by the destruction of the environment. Human actions that have damaged the environment must be responsible for the consequences of their behavior, namely by stopping their actions and not repeating them, repairing the damaged environment, and repairing it so that it functions normally or restores its original condition, compensates for the loss of the community and the environment. Individuals or groups of people or communities in a project that changes the environment so that it causes environmental damage and pollution must be sanctioned by the state or government and punished by sin from Allah SWT. The concept of environmental change should be more focused on how to cope with the negative impacts of natural changes that greatly affect people's lives. The binding provisions relate to conditions prior to construction or before the toll road construction project runs. The government must be very concerned about pollution and the losses that will occur

CONCLUSION

The study concluded that there must be a concept of environmental change in the construction of toll roads. The government and related parties in the construction of toll roads must comply with the rules and regulations in the concept of environmental change which pay more attention to the negative impacts of the implementation of this infrastructure project. In the context of environmental care for the occurrence of various changes,

it must refer to the preservation of nature which is part of the maqashid of sharia and the rules of ushul fiqh which explain that everything that becomes an implementing mediator for something is mandatory, so it is classified as obligatory. Environmental care is not included in *ushul al khamsah*, but, without it, *ushul al khamsah* will not be realized properly. Humans, especially the Muslim community, must be responsive and responsible for their environment. The act of protecting the environment from any changes to avoid damage has implications for the good of mankind today and for generations to come. Human dignity lies at the highest level by doing useful and positive actions.

The concept of environmental change is more directed to various pollutants such as air pollution, noise and damage to the environment and local community ownership. The concept of environmental change is closely related to environmental ethics which has respect for the environment and is connected to all aspects of life. Humans should have and understand the science of environmental ethics to be able to maintain the mandate of Allah SWT to manage the environment properly and correctly. Anticipation and solutions to changes and environmental damage really need to be prepared before the construction of toll road projects. The exposure and responses of respondents who are dominant in the community around the development become the reference for the concept of environmental change. Responsive and fast solutions as well as sanctions for negative impacts that occur and will occur must be the main requirements for working on toll road construction projects. The concept of environmental change makes toll road construction more beneficial and has many benefits for the community.

REFERENCES

- Adua, L., York, R., & Schuelke-Leech, B.-A. (2016). The human dimensions of climate change: A micro-level assessment of views from the ecological modernization, political economy and human ecology perspectives. *Social Science Research*, 56, 26-43. <https://doi.org/10.1016/j.ssresearch.2015.10.003>
- Afandi, M. A., & A'yun, I. Q. (2022). Dampak pembiayaan produktif perbankan terhadap pertumbuhan ekonomi pulau sumatra ditengah pembangunan Jalan Tol Trans Sumatra [The impact of banking productive financing on the economic growth of the island of Sumatra amid the construction of the Trans Sumatra Toll Road]. *Derivatif: Jurnal Manajemen*, 16(1), 146-153. <https://doi.org/10.24127/jm.v16i1.794>
- Ahmad, A. (2004). Economic development in Islamic perspective revisited. *Journal of King Abdulaziz University: Islamic Economics*, 17(1), 53-83. <https://doi.org/10.4197/islec.17-1.6>
- Anggraini, Y., Yasir, A., & Ridlwan, Z. (2015). Perbandingan perencanaan pembangunan nasional sebelum dan sesudah amandemen Undang-Undang Dasar 1945 [Comparison of national development planning before and after the amendment to the 1945 Constitution]. *Fiat Justisia: Jurnal Ilmu Hukum*, 9(1), 74-88. <https://doi.org/10.25041/fiatjustisia.v9no1.589>
- Bakri, M. (2008). Unifikasi dalam pluralisme hukum tanah di Indonesia (Rekonstruksi konsep unifikasi dalam UUPA) [Unification in land law pluralism in Indonesia (Reconstruction of the concept of unification in the Basic Agrarian Law)]. *Kertha Patrika*, 33(1), 1-5. <https://doi.org/10.24843/KP.2008.v33.i01.p07>
- Basner, M., Babisch, W., Davis, A., Brink, M., Clark, C., Janssen, S., & Stansfeld, S. (2014). Auditory and non-auditory effects of noise on health. *The Lancet*, 383(9925), 1325-1332. [https://doi.org/10.1016/S0140-6736\(13\)61613-X](https://doi.org/10.1016/S0140-6736(13)61613-X)

- Crump, L. (2020). Conducting field research effectively. *American Behavioral Scientist*, 64(2), 198–219. <https://doi.org/10.1177/0002764219859624>
- Dien, M. I. (1997). Islam and the environment: Theory and practice. *Journal of Beliefs and Values*, 18(1), 47–57. <https://doi.org/10.1080/1361767970180106>
- Diver, S., Vaughan, M., Baker-Médard, M., & Lukacs, H. (2019). Recognizing “reciprocal relations” to restore community access to land and water. *International Journal of the Commons*, 13(1), 400–429. <https://doi.org/10.18352/ijc.881>
- Dubé, L., Addy, N. A., Blouin, C., & Drager, N. (2014). From policy coherence to 21st century convergence: A whole-of-society paradigm of human and economic development. *Annals of the New York Academy of Sciences*, 1331(1), 201–215. <https://doi.org/10.1111/nyas.12511>
- Erwaedy, A., Pardiman, P., Syahril, S., & Andiriyanto, A. (2021). Implementing halal industry management and environment conservation based on maqashid sharia. *AL-FALAH: Journal of Islamic Economics*, 6(2), 151–268. <https://doi.org/10.29240/alfalah.v6i2.3504>
- Fakhurozi, A., Dewi, A., & Amanda, R. (2020). Kajian studi dampak pembangunan Jalan Tol Trans Sumatera (JTTS) terhadap infrastruktur dan lingkungan [Study of the impact of the construction of the Trans Sumatra Toll Road on infrastructure and the environment]. *Jurnal Ilmiah Penalaran Dan Penelitian Mahasiswa*, 4(1), 14–29. <http://jurnal.ukmpenelitianunyu.org/index.php/jippm/article/view/185>
- Fast, E., Lefebvre, M., Reid, C., Deer, B. W., Swiftwolfe, D., Clark, M., Boldo, V., Mackie, J., & Mackie, R. (2021). Restoring our roots: Land-based community by and for indigenous youth. *International Journal of Indigenous Health*, 16(2), 120–138. <https://doi.org/10.32799/ijih.v16i2.33932>

- Fick, G. W. (2005, December). *Farming by the book: Food, farming, and the environment in the Bible and in the Qur-an* [HTML]. CSS Teaching Series, Department of Crop and Soil Sciences, Cornell University; Cornell University. Department of Crop and Soil Sciences. <https://ecommons.cornell.edu/handle/1813/2550>
- Gupta, A., Gupta, A., Jain, K., & Gupta, S. (2018). Noise pollution and impact on children health. *The Indian Journal of Pediatrics*, 85(4), 300-306. <https://doi.org/10.1007/s12098-017-2579-7>
- Halperin, D. (2014). Environmental noise and sleep disturbances: A threat to health? *Sleep Science*, 7(4), 209-212. <https://doi.org/10.1016/j.slsci.2014.11.003>
- Hameed M. Bashir, A. (2002). Property rights, institutions and economic development: An Islamic perspective. *Humanomics*, 18(3), 75-91. <https://doi.org/10.1108/eb018877>
- Hamzani, A. I., Mukhidin, & Rahayu, D. P. (2018). Pembangunan hukum nasional sebagai implementasi tujuan nasional [The development of national law as the implementation of national goals]. *Proceeding SENDI_U 2018*, 366-372. <https://www.unisbank.ac.id/ojs/index.php/sendu/article/view/6008>
- Helton, W. S., & Head, J. (2012). Earthquakes on the mind: Implications of disasters for human performance. *Human Factors*, 54(2), 189-194. <https://doi.org/10.1177/0018720811430503>
- Herlina, N. (2017). Permasalahan lingkungan hidup dan penegakan hukum lingkungan di Indonesia [Environmental issues and environmental law enforcement in Indonesia]. *Jurnal Ilmiah Galuh Justisi*, 3(2), 162-176. <https://doi.org/10.25157/jigj.v3i2.93>
- Ibad, M. Z., Iskandar, D. T., Adam, F., & Tabrani, S. N. (2021). Dampak ekonomi bagi komoditas unggulan dalam pembangunan Jalan Tol Trans Sumatra (JTTS) Bakauheni-Kayu Agung [Economic impact for leading commodities in the

- construction of the Trans Sumatra Toll Road Bakauheni-Kayu Agung]. *Journal of Science and Applicative Technology*, 5(2), 387-396. <https://doi.org/10.35472/jsat.v5i2.278>
- Iqbal, M., & Pradjoko, D. (2021). Construction of tangerang-merak toll road and its impact on society and economic development in the tangerang regency (1990-2005). In D. Kramadibrata & D. Pradjoko (Eds.), *Dissecting history and problematizing the past in Indonesia* (pp. 3-15). Nova Science Publishers.
- Jadda, A. A. T., Hamid, M. A., Yunus, M., & Irwansyah. (2021). Law enforcement against environmental damage using and environmental law approach. *IOP Conference Series: Earth and Environmental Science*, 870(1), 012009. <https://doi.org/10.1088/1755-1315/870/1/012009>
- Karsaman, R. H., Rodhiatun, Rasyid, H. A., & Santoso, I. (2015). Kajian investasi pembangunan jalan tol di Indonesia berdasarkan sistem syariah: Studi kasus jalan tol Cikampek-Palimanan [Study of toll road development investment in Indonesia based on sharia system: The case of Cikampek-Palimanan toll road]. *Journal of Regional and City Planning*, 26(2), 86-99. <https://doi.org/10.5614/jpwk.2015.26.2.2>
- Khairina, E., Purnomo, E. P., & Malawani, A. D. (2020). Sustainable Development Goals: Kebijakan berwawasan lingkungan guna menjaga ketahanan lingkungan di Kabupaten Bantul Daerah Istimewa Yogyakarta [Sustainable Development Goals: Environmentally sound policies to maintain environmental resilience in Bantul Regency, Special Region of Yogyakarta]. *Jurnal Ketahanan Nasional*, 26(2), 155-181. <https://doi.org/10.22146/jkn.52969>
- Khatib, S. (2018). Konsep maqashid al-syari`ah: Perbandingan antara pemikiran al-Ghazali dan al-Syathibi [The concept of maqashid al-shari`ah: Comparison between the thoughts of al-Ghazali and al-Syathibi]. *Jurnal Ilmiah Mizani: Wacana Hukum, Ekonomi, Dan Keagamaan*, 5(1), 47-62. <https://doi.org/10.29300/mzn.v5i1.1436>

- Kurniawan, I. D., Pujiyono, Asrori, M. H., & Septiningsih, I. (2022). The utilization of Sumatra Toll Road in building the economy: A hope or just wishful thinking? *Res Militaris*, 12(2), 780-795. <https://resmilitaris.net/menu-script/index.php/resmilitaris/article/view/146>
- Kusnan, Osman, M. D. H. bin, & Khalilurrahman. (2022). Maqashid al shariah in economic development: Theoretical review of Muhammad Umer Chapra's thoughts. *Millah*, 21(2), 583-612. <https://doi.org/10.20885/millah.vol21.iss2.art10>
- Lefeber, L. (1974). On the paradigm for economic development. *World Development*, 2(1), 1-8. [https://doi.org/10.1016/0305-750X\(74\)90031-X](https://doi.org/10.1016/0305-750X(74)90031-X)
- Malsch, B., & Salterio, S. E. (2016). "Doing good field research": Assessing the quality of audit field research. *Auditing*, 35(1), 1-22. Scopus. <https://doi.org/10.2308/ajpt-51170>
- Marcos, A., & Valera, L. (2022). From environmental ethics to human ecology. A necessary change. *Pensamiento*, 78(298), 785-800. <https://doi.org/10.14422/pen.v78.i298.y2022.027>
- Mohamed, M. I., & Shafiai, M. H. M. (2021). Islamic agricultural economic financing based on zakat, infaq, alms and waqf in empowering the farming community. *IQTISHADUNA: Jurnal Ilmiah Ekonomi Kita*, 10(1), Article 1. <https://doi.org/10.46367/iqtishaduna.v10i1.334>
- Mohammed, S. J. (2007). Al-bi'ah fi al-Islam: Wa'y wa akhlaq [Environment in Islam: Awareness and ethics]. *Journal of Kerbala University*, 5(2), 164-173. <https://www.iasj.net/iasj/article/51952>
- Muamar, A., & Alparisi, A. S. (2017). Electronic money (e-money) in maqashid al-sharia perspective. *Journal of Islamic Economics Lariba*, 3(2), 75-84. <https://journal.uui.ac.id/JIELariba/article/view/9657>

- Munir, K., & Iftikhar, M. (2021). Impact of transport and technological infrastructure in attracting FDI in Pakistan. *Ikonomicheski Izsledovania*, 30(7), 93-106. https://www.iki.bas.bg/Journals/EconomicStudies/2021/2021-7/6_Kashif-Munir_f-F.pdf
- Naeruz, M., Damayanti, A., & Tanjung, M. (2022). Analisis dampak pembangunan Jalan Tol Trans Sumatera terhadap pendapatan masyarakat bagian Sumatera Utara (Medan-Tebing Tinggi) [Analysis of the impact of the construction of the Trans Sumatra Toll Road on the income of the people of North Sumatra (Medan-Tebing Tinggi)]. *Jurnal Pendidikan Tambusai*, 6(1), 527-532. <https://jptam.org/index.php/jptam/article/view/2941>
- Opwis, F. (2005). Maslaha in contemporary Islamic legal theory. *Islamic Law and Society*, 12(2), 182-223. <https://doi.org/10.1163/1568519054093699>
- Pelsa, I., & Balina, S. (2022). Development of economic theory – from theories of economic growth and economic development to the paradigm of sustainable development. *DIEM: Dubrovnik International Economic Meeting*, 7(1), 91-101. <https://doi.org/10.17818/DIEM/2022/1.10>
- Petters, J. L., Brooks, G. C., Smith, J. A., & Haas, C. A. (2019). The impact of targeted data management training for field research projects—A case study. *Data Science Journal*, 18(1). <https://doi.org/10.5334/dsj-2019-043>
- Potter, L. E., Von Hellens, L., & Nielsen, S. (2010). *The practical challenges of case study research: Lessons from the field*. 5th International Conference on Qualitative Research in IT and IT in Qualitative Research, QualIT 2010.
- QSR International Pty Ltd. (2018). *NVivo (Version 12)*. <https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home>
- Rambe, K. mufti. (2022). Beberapa istilah penting ; Membandingkan qawaid fiqhiyah dengan dhabit fiqh, nazhariyah fiqhiyah, dan

- kaidah ushuliyah [Some important terms; Comparing qawaid fiqhiyah with dhabit fiqh, nazhariyah fiqhiyah, and ushuliyah rules]. *Jurnal Landraad*, 1(2), 101-112. <https://jurnal.islahiyah.ac.id/index.php/jl/article/view/134>
- Sadeq, A. H. M. (1987). Economic development in Islam. *International Journal of Economics, Management and Accounting*, 1(1), 35-45. <https://journals.iium.edu.my/enmjjournal/index.php/enmj/article/view/3>
- Safei, A. A. (2016). Islam and socio-ecological problems: How religion works in regard to earth theology. *Man In India*, 96(6), 2493-2502. https://serialsjournals.com/abstract/98585_9.pdf
- Sahoo, P. (2012). Determinants of FDI in South Asia: Role of infrastructure, trade openness and reforms. *Journal of World Investment and Trade*, 13(2), 256-278. <https://doi.org/10.1163/221190012X627638>
- Saputra, A. S., Susiani, I. R., & Syam, N. (2021). *Hifdh al-bi'ah as part of maqāsid al-shari'ah: Yūsuf al-Qardāwy's perspective on the environment in Ri'āyat al-Bi'ah fi Shari'ah al-Islām book*. 2353. <https://doi.org/10.1063/5.0052768>
- Sari, I. (2020). Hak-hak atas tanah dalam sistem hukum pertanahan di Indonesia menurut Undang-Undang Pokok Agraria (UUPA) [Land rights in the land law system in Indonesia according to the Basic Agrarian Law]. *Jurnal Mitra Manajemen*, 9(1), 15-33. <https://journal.universitassuryadarma.ac.id/index.php/jmm/article/view/492>
- Sari, I. F., Mulyaningsih, H., Haryanto, S., & Hartoyo. (2021). Impresi lanjutan Jalan Tol Trans Sumatera bagi kondisi sosial ekonomi masyarakat di Jalur Lintas Sumatera Provinsi Lampung [The continued impression of the Trans Sumatra Toll Road for the socio-economic conditions of the people on the Trans-Sumatra Route in Lampung Province]. *Sosiologi: Jurnal Ilmiah Kajian Ilmu Sosial Dan Budaya*, 23(1), 56-72. <https://doi.org/10.23960/sosiologi.v23i1.56>

- Senduk, F. R., Indwiarti, I., & Nhita, F. (2019). Clustering of earthquake prone areas in indonesia using k-medoids algorithm. *Indonesia Journal on Computing (Indo-JC)*, 4(3), 65-76. <https://doi.org/10.34818/INDOJC.2019.4.3.359>
- Siswoyo, M. (2020). The impact of toll roads development: Ecology of public administration perspective. *Systematic Reviews in Pharmacy*, 11(11), 152-157. <https://doi.org/10.31838/srp.2020.11.22>
- Sofwan, A. (2018). Interelasi qowaid usul dan fiqhiyah sebagai sebagai landasan hukum Islam yang universal [Interrelation of usul qowaid and fiqhiyah as the foundation of universal Islamic law]. *Legitima: Jurnal Hukum Keluarga Islam*, 1(1), 1-19. <https://doi.org/10.33367/legitima.v1i1.640>
- Stansfeld, S. A., & Matheson, M. P. (2003). Noise pollution: Non-auditory effects on health. *British Medical Bulletin*, 68(1), 243-257. <https://doi.org/10.1093/bmb/ldg033>
- Suryani. (2017). Penegasan hifdh al-'alam sebagai bagian dari maqāshid al-sharī'ah [Affirmation of hifdh al-'alam as part of maqāshid al-sharī'ah]. *Al-Tahrir: Jurnal Pemikiran Islam*, 17(2), 353-370. <https://doi.org/10.21154/altahrir.v17i2.1036>
- Syaputra, T., & Qibtiyyah, R. M. (2022). Pengaruh pembangunan Jalan Tol Trans Sumatra (JTTS) terhadap penerimaan pajak pusat [The effect of the construction of the Trans Sumatra Toll Road on central tax revenues]. *Jurnal Ilmiah Universitas Batanghari Jambi*, 22(3), 1611-1617. <https://doi.org/10.33087/jiubj.v22i3.2604>
- Syarif, A., & Ahmad, R. bin. (2016). Konsep masalah dan mafsadah sebagai asas pemikiran maqāsid syariah: Satu analisis [The concept of masalah and mafsadah as the principle of maqāsid sharia thinking: An analysis]. *Ijtihad : Jurnal Hukum Dan Ekonomi Islam*, 10(2), 1-20. <https://doi.org/10.21111/ijtihad.v10i2.1241>
- Theresia, A. (2014). *Pembangunan berbasis masyarakat: Acuan bagi praktisi, akademi dan pemerhati pengembangan masyarakat*

[Community-based development: A reference for community development practitioners, academics and observers]. Alfabeta.

- Yahya, F. A., & Nasrulloh, N. (2022). The relevance of maqashid sharia in green economy (study of coastal tourism area Mangrove Park Labuhan, Bangkalan-Madura). *El-Faqih: Jurnal Pemikiran Dan Hukum Islam*, 8(2), 12–22. <https://doi.org/10.29062/faqih.v8i2.731>
- Yusuf, A. H. B. (2020). A study of conceptual foundations of maqāsid al-sharī'ah (objectives of Islamic law) as expounded by classical Muslim jurists. *Islamic Quarterly*, 64(4), 527–546.
- Zuhdi, M. H. (2015). Rekonstruksi fiqh al-bi'ah berbasis masalah: Solusi Islam terhadap krisis lingkungan [Reconstruction of masalah-based fiqh al-bi'ah: Islamic solutions to the environmental crisis]. *Istinbath: Jurnal Hukum Islam IAIN Mataram*, 14(1), 42–63. <http://ejurnal.iainmataram.ac.id/index.php/istinbath/article/view/582>

