



Ideal legal arrangements for decentralized finance as a crypto asset ecosystem in Indonesia

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Abstract

Technology evolves with ambitions for fundamental changes in innovation practices that have an impact on human life. The presence of Decentralized Finance (DeFi) is a form of the technological revolution in the field of blockchain. This research will analyze the potential presence of DeFi in Indonesia and what is the ideal legal arrangement to guarantee the presence and implementation of DeFi in Indonesia. This legal research is normative research with a legal and conceptual approach. The legal materials used are primary and secondary legal materials. The results of the study state that based on an analysis of narrative economic theory, DeFi has great potential to be present in Indonesia. This is demonstrated by the positive narratives that the world is starting to build on DeFi and the facilitation of DeFi's presence in Indonesia through the 2020 Indonesian Business Field Standard Classification (KBLI) with code 62014 concerning Blockchain Technology Development Activities. An ideal regulation is needed to prepare for the presence and operation of DeFi in Indonesia by considering: a. risk identification; b. policy objectives; c. context; d. actions and approaches; e. stakeholders; f. target; g. risk mitigation; h. implications and consequences; i. effectiveness. These considerations must be adjusted to the norms that apply in Indonesia so that ideal legal regulations can be created to facilitate the presence of DeFi in Indonesia.

Keywords: crypto, decentralized finance, ideal legal

Introduction

Decentralized Finance (DeFi) is a financial system in the form of a decentralized application originating from the blockchain that functions as a financial service provider. DeFi has all the characteristics of blockchain and cryptocurrencies, i.e. it is decentralized and transparent. Decentralized means that the entire ecosystem is not affected by the intervention of government authorities and transparent means that all transactions are recorded on the blockchain ^[1]. A financial system that works like the crypto market is attractive because, with the presence of DeFi, it will be possible for crypto customers to carry out banking activities like conventional banking, such as lending and financial banking services. ^[2] DeFi currently provides many financial services, including savings, loans, exchanges, wealth management, payment networks, insurance, and derivatives. There are also non-financial institution projects, Know Your Customer (KYC), analytics, and asset tokenization. However, according to the economist, DeFi currently has no real economic value to serve ^[3]. A unique innovation from DeFi is the presence of flash loans, which are instant loan services in the form of unsecured crypto assets that must be repaid in the same transaction ^[4]. However, in this study, the DeFi function will only be limited to its role as a service for lending and borrowing crypto assets.

Such extraordinary technological developments have brought ambitions for fundamental changes in innovation practices that impact human life ^[5]. To protect its people from innovative practices that affect human life, Indonesia through the 1945 Constitution of the Republic of Indonesia has provided guarantees regarding security protection in terms of taking action to use technology as a human right of the Indonesian people as stipulated in Article 28G paragraph

(1) which states "Every person has the right to protection of himself/herself, family, honor, dignity, and property under his control, and has the right to feel safe and protected from threats of fear to do or not do something which is a human right." Act Number 11 of 2011 on Information and Electronic Transactions also provides guarantees of protection regulated in Article 4 letter e which states "the use of Information Technology and Electronic Transactions is carried out with the aim of providing a sense of security, justice and legal certainty for users and operators of Information Technology."

Cryptocurrency in Indonesia has been declared legal as an investment instrument by the Commodity Futures Trading Supervisory Agency (Bappebti) as the person in charge has prepared the technical implementation and implementation related to crypto investment in Indonesia ^[6]. The presence of DeFi, which is starting to be felt in various developed countries, as well as Indonesia, which supports the development of blockchain technology which is the basis for how DeFi is created, has been welcomed and facilitated by the Ministry of Investment through the 2020 Indonesian Business Field Standard Classification (KBLI) with code 62014 concerning Blockchain Technology Development Activities with description that the KBLI group with this code includes blockchain technology development activities, such as smart contract implementation activities, public blockchain infrastructure design and private blockchain ^[7]. Even though the Ministry of Investment has facilitated it there has yet to be any preparation regarding DeFi regulations so that they can be used and operated in Indonesia. This research will provide a design for how the ideal rules to facilitate DeFi exist in Indonesia and can become an ecosystem in the development of crypto assets.

Methods

This research is of a normative juridical type with a statutory and conceptual approach. This study uses primary legal materials and secondary legal materials. These legal materials were inventoried by researchers utilizing the literature study method to obtain a prescriptive legal survey. Furthermore, this study analyzes using a deduction pattern to explain various regulatory norms related to legal issues first; then, this research demonstrates the legal facts. The study is arranged in a systematic, orderly, logical, and thorough manner and is described in a holistic and detailed way. The pattern of reasoning is arranged systematically so that a conclusion is reached from the legal issues studied^[8].

Result and Discuss

Potential DeFi Presence in Indonesia

The potential for whether or not DeFi can exist in Indonesia needs to be studied theoretically. Narrative economic theory will be used to analyze this problem. Robert J. Shiller coined the narrative economic theory. This theory explains how popular stories influence the way the economy operates. Humans drive the economy. Consumers, politicians, and businesses all have a hand in influencing the way markets work. These economic drivers are more than a collection of statistics. They have their own beliefs, biases, and desires. The stories around them influence them. Those popular stories can change the outcome of the world economy^[9].

DeFi as a newcomer, has almost the same story as Bitcoin, which used to be underestimated. Things like this need to be watched out for because if you look at events that are almost the same as this problem, excessive skepticism actually makes an opportunity missed. Various narratives with news headlines that disseminate information such as: a. with the characteristics of unauthorized DeFi can wreak havoc on anyone who uses it; b. the fluctuating value of crypto assets in circulation creates a high risk and worry for anyone who has deposited in crypto assets and their ecosystem; c. media coverage even from security agencies which are considered for exaggerating the dangers of DeFi and; e. various other bad assumptions that have arisen against DeFi. Things like this are not wrong. It is good news because the public will be directed to a system, in this case, a better investment and financial system whose security is guaranteed by the governments of each country.

Technological developments are getting faster, and people's needs are increasing; the wrong assumptions of DeFi need to be re-analyzed. Apart from the bad things that have been narrated about DeFi, it is necessary to do a review at this time regarding how DeFi is currently making various changes both from internal factors developing the protocol from DeFi and internal factors from outside the DeFi protocol, which aims to convince people to use DeFi in their crypto ecosystem.

The internal factor of DeFi is characterized by an open, permissionless, and highly interoperable technology stack with solid integrity and availability guarantees. DeFi aims to replicate financial services and products. Furthermore, DeFi is creating entirely new DApps openly and transparently built on blockchain and smart contracts. Due to the degree of decentralization of the underlying blockchain, DeFi does not rely on a single intermediary or centralized institution, such as a bank, broker, or exchange [10]. External factors from DeFi have optimism to show their existence in the

future. DeFi has forced open the centralized model of finance in which conventional banking and financial services operate. This makes intermediaries redundant and replaces them with smart contracts, lowering the service cost to users. The introduction by blockchain technology activists with various narratives created, making various DeFi applications, including stablecoins on crypto assets, central exchanges, and lending instruments, have opened up new markets. Whether we like it or not, with the emergence of the DeFi phenomenon, banks, insurance companies, investment companies, and mortgage providers cannot ignore the growth of DeFi. Missing the blockchain financing ecosystem today is an incorrect decision and can shrink market share.

Centralized financial institutions are starting to welcome improvements in internal and external factors from DeFi. Through its official website, ING Bank, a global bank with a European basis, provides an excellent example of the potential for collaboration between centralized and decentralized banking. ING Bank analyzes the risks and opportunities associated with DeFi by writing a report on its website entitled "Lessons learned from Decentralized Finance (DeFi)." This report explains that the best of both systems is achieved when centralized and decentralized financial services work together. Collaborative forms of centralized financial institutions must embrace innovation and move away from their risk aversion mindset. They must proactively contribute to developing regulations, ensuring the main advantages of DeFi are maintained^[11].

Another narrative built is that the Ministry of Investment has facilitated the presence of DeFi through KBLI 2020 with code 62014 concerning Blockchain Technology Development Activities with the provisions of this business that the KBLI group with code 62014 covers blockchain technology development activities, such as smart contract implementation activities, blockchain infrastructure design public and private blockchains as explained in this background. This means that the narrative being echoed against DeFi, especially in Indonesia, has given the green light if DeFi is likely to be accepted and become an ecosystem for Indonesian crypto assets with all the advantages and disadvantages accompanying crypto asset customers in operating DeFi.

Ideal Legal Arrangements for DeFi As A Crypto Asset Ecosystem In Indonesia

The government facilitates DeFi, and the excellent potential for DeFi to be present in Indonesia also needs to prepare legal aspects to regulate it. The goal is for the presence of DeFi in Indonesia to be as expected. This research provides suggestions regarding how the ideal legal regulation of DeFi as a crypto asset ecosystem in Indonesia is based on guidelines *DeFi Policy-Maker Toolkit* from *World Economic Forum*^[12]. This guide explains what must be regulated against DeFi, which includes: 1. Risk identification; 2. Policy objectives; 3. Context; 4. Actions and approaches; 5. Stakeholders; 6. Targets; 7. Risk mitigation; 8. Implications and consequences; 9. Effectiveness.

1. Risk Identification

DeFi can provide risks from a centralized financial system. Various crime risks, such as the occurrence of DeFi as a place for money laundering, fraud, risky Initial Coin

Offering, and hacking, must be aware of the dangers. Due to these various risks, the ones who suffer the most are crypto asset customers who use DeFi and DeFi service providers. By presenting a policy to regulate DeFi, especially related to crime, it is hoped that if a crime occurs, it can be overcome as soon as possible by arresting the perpetrators of the crime and returning the results to those affected.

An essential role in addressing this risk is that of the DeFi service provider. Service providers are ensured to have resources capable of managing DeFi services as securely as possible. Service providers must have experts who are certified in making services and handling services. Expertise certification is required with the intention that when a DeFi crime occurs against a crypto asset customer, the service provider can be responsible for improving their service. Furthermore, in investigating and investigating crimes, the government should form a special team consisting of law enforcement officers who have the resources and are provided with various supporting tools to deal with cybercrimes. Pay attention to the inventory of supporting tools so that there will be no shortage, unavailability, or mark ups, which will be detrimental to state finances.

The legal mechanism that can be carried out is to make regulations in the form of special blockchain laws that have jurisdiction that is not limited to legal actions that apply in Indonesia and/or are carried out by Indonesian citizens but can also apply to anyone who carries out legal activities that are carried out in Indonesia. Outside the jurisdiction of Indonesia, either by Indonesian citizens or foreign nationals or Indonesian legal entities or foreign legal entities that have legal consequences in Indonesia. In addition, international cooperation also needs to be established and increased. Because without international collaboration, it is impossible to uncover cybercrimes like this.

2. Policy objectives

Policy objectives are important after risk identification. The policy aims to determine why it is necessary to have laws regarding blockchain and DeFi regulated in this particular regulation. The derivative rules are also made because of the philosophical, sociological, and juridical basis of why this policy is essential. This policy, both aspects of state interests and characteristics of community interests protect many aspects of claims.

The presence of the state in supporting blockchain, which is facilitated through the KBLI 2020 with code 62014 concerning Blockchain Technology Development Activities, opens opportunities for anyone to be able to participate in revitalizing the presence of DeFi both as a service provider, which has implications for creating jobs and as service users which have an impact for driving the country's economic growth because the number of crypto commodities is greater than the capital market. This large amount provides an opportunity to be put to better use.

A good policy is transparent and accountable, which is reflected in involving public participation/consultation at every stage. For DeFi policy objectives to be on target as expected and to be able to protect the community, involvement in making DeFi rules is needed, especially those who understand and are experts on this issue. This will prevent policies from being politicized by certain groups.

3. Context

The need for policies related to DeFi is to guarantee the interests of the state and society. The country's interest is to establish a national initiative to promote the local development of innovative financial service platforms. The government has an organization that has an extraordinary ability to create various innovations. Financial innovation is a must facilitated by the state to the community. The presence of innovation from the community for DeFi services will make the country proud.

Another context besides just being proud, having a local DeFi platform from a country will minimize crime compared to using another country's platform. The Indonesian DeFi platform will be certified by the relevant ministries, such as Bappebti or Ministry of Communication and Information Technology (Kominfo). For the certification given, it guarantees that the DeFi platform that the public will use will be guaranteed safe. At least, this has the effect of being calmer when using DeFi services.

DeFi platforms originating from other countries may not be certified by Bappebti or Kominfo because state agencies cannot monitor them during development. The existence of certification from Bappebti and Kominfo can make it filterable for the public that the DeFi service used is from Indonesia, its security is guaranteed, and if one day a crime occurs, then there is an institution that is responsible for it.

4. Actions and Approaches

Crime in the cyber world no longer has national borders, giving rise to new problems and the impact of which has been felt by the internet user community and its various networks. Even though the state already has various existing regulations related to cybercrime, a strategy is also needed in dealing with cybercrime. Countermeasures against cybercrime can be carried out through a technological approach by securing software and hardware, the networks used, and, most importantly, efforts to socialize the use of technology in society^[13].

Socialization is essential because, as explained in the previous chapter, the Indonesian people are always in a bandwagon effect or the effect of going along with other people, without them knowing what they are imitating and the benefits and risks. The outreach must be right on target, especially for those with low education who can understand the DeFi phenomenon and not get caught up in various crimes.

Another approach that needs to be considered in building to minimize DeFi crimes against crypto asset customers is a systematic approach to crime prevention policies which are an integral part of national development policies, starting from the overall determination of substantive criminal law and criminal procedural law, including the process of decriminalization, depenalization, and diversion, both regarding the renewal of procedures that guarantee the support of the community members and conducting a review of the existence of all policies by taking into account their consequences^[14].

5. Stakeholders

Stakeholders are the parties who will be responsible for the DeFi policy. Determining who will assume the stake depends on which sector this policy is in. DeFi, which has a blockchain basis, in Indonesia is currently under the auspices of Bappebti, Kominfo, and the Ministry of

Investment. The three institutions have different roles in blockchain governance.

Bappebti has the role of accommodating crypto asset trading commodities. Bappebti publishes all rules related to crypto asset trading. Kominfo has a role as a state tool to report all things related to blockchain, including crypto. Meanwhile, the Ministry of Investment facilitates countries to start managing and developing blockchain technology. This stakeholder synergy is essential in how DeFi can later operate in Indonesia to support the existing crypto ecosystem.

The role of law enforcement officials is essential because the construction of regulations focuses on DeFi crimes against crypto asset customers. This form of cybercrime cannot be handled by the police alone. There must be cooperation from various institutions, including the National Cyber and Crypto Agency (BSSN). BSSN must be given a role in overcoming cybercrime. Moreover, DeFi, which is a "bank" of crypto assets, is prone to crime. Through its authority, BSSN can help these stakeholders to overcome DeFi crimes against crypto asset customers. With special regulations in the form of laws on blockchain in which there are arrangements for DeFi as a product of the blockchain, BSSN's authority can be expanded to help overcome crime so that people using DeFi services become safer.

6. Target

Targets are descriptions of who needs to implement policy or will be burdened by the steps involved. Activities can be grouped to identify roles that inform specific duties and controls. The target in this scheme is an elaboration from stakeholders to appoint anyone who will implement rules related to DeFi.

The previous discussion explained that regulations related to DeFi would be included in special laws regarding blockchain. DeFi provisions are included in the law to contain norms of criminal sanctions against crimes or orders that are violated. Derivative regulations regarding the technicality of DeFi services, whose function is as an ecosystem for lending crypto assets, will be addressed to Bappebti. Bappebti is charged with all actions related to technical DeFi services as a crypto ecosystem whose function is to borrow crypto assets.

Bappebti is given responsibility starting from establishing a safe DeFi service for crypto asset customers to use to borrow crypto assets to duties related to problems that will later arise in DeFi services. The target is only focused on Bappebti and not other stakeholders, because DeFi as an ecosystem of crypto is an inseparable unit. If the target of this rule is aimed at other institutions, it is feared that there will be dualism which will lead to the ineffectiveness of the existing regulations.

7. Risk Mitigation

Risk mitigation as an effort to reduce or even stop losses from an action that has occurred must be included in a rule. Referring to the theory of legislation, Leon Fuller argues that a government must be constant to have legal certainty. However, a government must also be changed if the political and social situation has changed. This means that these changes were made with the aim of creating better regulation.

DeFi has various threats, and the dangers are more challenging than resolving conventional crime cases.

Therefore, a regulation must be flexible enough to follow all the changes that will occur, including the worst risks. The philosophical foundation of this ideal regulation is that the values of the second Pancasila precept are that activities must be civilized in managing and developing technology. This is related to risk mitigation, that if the technology, in this case, the DeFi that is being collected and developed, experiences a disruption that results in chaos for the state and society, then the stakeholders in this matter must take action.

All kinds of actions can be taken to save the common interest, including the worst action is to stop all DeFi services as a crypto ecosystem in Indonesia. It should be noted that before taking action as a solution, the government, in this case stakeholders, must provide understanding to those affected by the problems they are facing and at least provide compensation. Compensation can be in the form of returning all or part of the losses experienced or providing an opportunity for those affected to save their assets while they can still be held. This needs to be done as a form of responsibility to society.

8. Implications and Consequences

Accepting DeFi as a crypto ecosystem will bring various consequences at the implementation stage. A good policy needs to provide any limitations ranging from those still acceptable to those not declared admissible. This is important because having consequences on the implications of implementing DeFi services will lead to risk mitigation that can be carried out. Risk mitigation needs to know what limitations can be used as benchmarks for taking a settlement action.

Starting to run DeFi services as a supporter of the crypto ecosystem in Indonesia, which in this research is limited to lending and borrowing crypto assets, it is necessary to provide some limitations in the form of risks that will be incurred. The chances that will arise are categorized into three: a. low risk; b. medium risk; c. high risk. Categorizing the consequences of the resulting impacts is an adaptation of Government Regulation 5 of 2021 on the Implementation of Risk-Based Business Licensing. This study proposes what actions are categorized as the impacts above:

- a. **Low Risk:** Actions that fall under the low-risk category are all actions related to providing DeFi services that do not comply with the Articles of Association and Bylaws (AD/ART) of DeFi service provider companies. Example: member restructuring should be carried out by the AD/ART.
- b. **Medium Risk:** Actions that fall into the medium risk category are all actions related to the operation and use of DeFi services that do not comply with all prohibited administrative actions. For example: DeFi service providers do not extend business licenses or do not complete business documents, or DeFi service users are not old enough to use the service and then provide incorrect KYC data.
- c. **High Risk:** Actions included in the serious risk category are all actions related to the operation and use of DeFi services that have committed criminal acts that resulted in losses to service users. Example: DeFi service providers commit fraud, or DeFi service users find loopholes in the services created and take illegal advantage of them

9. Effectiveness

The effectiveness of a policy will be seen from how the goals of the procedures are aspired to. That is, there must be a goal to be achieved by making a policy. The process of measuring effectiveness will be carried out after the regulations run. It is necessary to carry out independent research to determine the effectiveness of the rules made so that they can be used as an evaluation to improve regulations in the future. The hope for practices related to DeFi is that the implementation of blockchain development facilitated by the government through the Minister of Investment with the issuance of KBLI 62014 can run as expected by the government.

Conclusion

DeFi, a form of blockchain technology development with its function as a crypto asset lending service, has the potential to be present in Indonesia. The presence of DeFi needs to be accompanied by ideal legal regulations so that it can cover all aspects of the benefits of DeFi for providers and users of DeFi services. Making ideal regulations can be done by applying recommendations from experts who understand the field of DeFi. Still, in making regulations, it is also necessary to adapt them to the norms that apply in Indonesia

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