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Cross-Country Study of Indonesia Green Sukuk and REDD+

July 2020

This report is part of project Strengthen national climate policy implementation: Comparative empirical learning & creating linkage to climate finance (SNAPFI), see www.diw.de/snapfi. This project is part of the International Climate Initiative (IKI). The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) supports this initiative on the basis of a decision adopted by the German Bundestag. More information on IKI can be found at www.international-climate-initiative.com.

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I. Introduction

The Republic of Indonesia (ROI) has signed the Paris Agreement in New York on April 22, 2016. This was followed up by Law No. 16 of 2016 concerning the Ratification of the Paris Agreement to the United Nations Framework Convention On Climate Change (Paris Agreement For The United Nation Framework Convention Nations About Climate Change) by the Indonesian Government. The Government of Indonesia (GoI) in its first climate policy phase until 2020 has set the target regarding GHG emission reduction to 26 % (unconditional) and 41 % from Business as Usual if Indonesia is assisted by international support. This unconditional target has increased to 29 % in 2030 due to consequence of continue economic growth and changing of base year setting of NDC.

Based on Law No. 16 of 2016. Indonesia will need about USD 81 Bio to finance Mitigation & Adaptation Actions in 2015-2020 (TNC Report to UNFCCC, 2017). There are 3 kind of fiscal supports to the green project which are the revenue (Tax and incentive), Expenditure (Ecology-based fiscal transfer), and Innovative financing instrument (Bond and sukuk). As The Government Budget alone will not be able to meet the financing needs for climate change actions, the Climate Actions needs a strategic policy and financing collaboration among the stakeholders in the local and global level, such as government (central & sub-national), business entities (private, SOEs), MDBs, NGOs/CSOs, communities, and other related stakeholders. Since cooperation definitely creates reciprocal relations, a little help from those who work together will drive change in each country. International supports has played important roles in formulating government policies to deal with climate change issues in Indonesia. This study aims to identify a few examples of instances where international climate finance has had an influence on national policy design and enhance the knowledge of how international climate finance (ICF) can be designed to support national policies that are crucial for NDC implementation. The study supports the NDC ambition raising and implementation.

II. International Climate Finance in Indonesia

The history of International Climate Finance of Indonesia started by the cooperation with JICA and AFD in formulating Indonesia Climate Change Programme Loan (CCPL) in 2008. CCPL is a loan mechanism to support the adaptation and mitigation of climate change. CCPL was directed to Indonesia's climate-change mitigation, adaptation and cross-sectoral issues, by monitoring and supporting the Government of Indonesia's (GoI) climate change policy reforms and thereby reducing the risks arising from climate change. The financial loan amounted to USD 1.9 billion over the three years (AFD, 2013). This policy loan was incorporated into the general budget and was not attached to any specific programme of line ministry. The loan disbursements were governed by a policy action framework agreed in advance with the Government (MFF Report, 2015). Based on the evaluation of ICCPL, The GoI and development partners have gained valuable lessons to develop The Policy Matrix which purposed of monitoring activities and support the policy dialogues regarding the ICCPL process. It is hoped that the policy matrix can be utilized for the formulation and implementation of future cooperative programs that address climate change issues based on international agreement (ICCPL, 2014).

Learning from the experience of the ICCPL, The Ministry of Finance as one of the national economic policy regulators is responsible for ensuring the effectiveness and efficiency of climate change funding.

In order to strengthen the transparency of climate change funding and to broaden the source of climate finance to other countries, The GoI developed the Mitigation Fiscal Framework (MFF) which has been prepared by the Ministry of Finance to assess the public expenditure and other policies that will be needed to achieve the government's objective of reducing greenhouse gas (GHG) emissions by 26% by 2020, compared with business as usual, using domestic resources (Ministry of Finance, 2012). The First MFF focused on forestry, peatlands, energy & transportation mitigation actions which covered 93% of national emission reduction targets and in 2012, using MFF, National Action Plan on Reducing Green House Gasses received about IDR 15,9 Trillion from several resources including International Partner (Harisman, 2013).

Along with the development of various efforts to tackle climate change, Indonesia then has submitted the Intended Nationally Determined Contributions (INDC) to the Secretariat UNFCCC on September 24 of 2015. The INDC was then reformulated into the First of Nationally Determined Contribution (NDC) in 2 October 2016. As already mentioned above, implementation of climate actions requires huge investment and cannot only be covered by the state budget. Since 2015, the Ministry of Finance, supported by the United Nations Development Programme, has developed the climate budget tagging (CBT) tool to track climate-related expenditure in the national budget as the urge of the development of Climate Budget Tagging appears from Mitigation Fiscal Framework, which supported by UNDP and funded through GEF. CBT identified ever-increasing state budget support to climate actions from 3.6% of the APBN (IDR 72.4 T, in 2016), to 4.7% (IDR 95.6 T, in 2017), to 4.9% (IDR 109.7 T, in 2018) and 4.1 % (IDR 95.8 T, in 2019). At the same time, the tagging process has also allowed the government to map out the financing gap to meet climate change target (Green Sukuk Report, 2020).

Climate change funding of Indonesia can come from a variety of sources, namely public, private and mixed funds. Public funds can come from government budgets as well as foreign state grants and loans. Funds from international sources can be channelled through government budgets, private parties, and NGOs that act as intermediaries. Based on the Fiscal Policy Agency (BKF) and **CPI report (2014)**, climate change funding in Indonesia is dominated by **domestic funding from the government budget of 66 percent**, and 34 percent comes from international public funding. Globally, climate finance set a record high in 2015 but more is needed. In 2015 it reached USD 472 billion, slightly decreasing to USD 455 billion in 2016; this high record is driven primarily by rising private investment in renewables (Buchner et al. 2017). The amount of public climate finance flows from donor governments and their agencies, multilateral climate funds, and development finance institutions (DFIs) to developing countries is fairly small and limited; it is only 10% of overall public flows. International finance from donor governments and their agencies to developing countries stayed constant throughout 2014-2016 at USD 14 billion per year. An ambitious commitment requires a large amount of finance and support from developed countries as well as private sector investment. Development partners could provide finance in the forms of loans, grants and technical assistance (Halimanjaya 2016).

To meet the annual climate change funding needs, the government needs to develop strategic steps to mobilize additional funds from other potential parties such as by stimulating private sector involvement. Coherence is needed by climate change control action plans and development plans which can be sharpened by a public funding framework for climate change control (PCF Report, 2019). As to meet the needs, at the end of 2017, the government issued a framework for Green Bonds and Green Sukuk (BKF report, 2019). Green Sukuk is a policy issued as one method to improve the potential investment climate of the International for financing and refinancing green projects in Indonesia as a form of Indonesia's commitment to the Paris Agreement. Following the rapid development of global green bond market in recent years and the completion of our Green Bond and Green Sukuk

Framework, Indonesia has been able to successfully issue The first Global Green Sukuk in March 2018. Selection of eligible green projects through a list of climate change project's output marked by Ministries in the KRISNA system. This framework has been through a review process by an international independent institution (CICERO) and gets the rank of a medium green value (BKF Report, 2019). Since Green Sukuk is one of an investment with market based mechanism that has been legally set up by the GoI, the International agencies don't have direct influence to the policy and regulation related to climate change in Indonesia.

On the other side, long before the advent of innovative green sukuk financing mechanism, Indonesia had entered into bilateral cooperation agreement in financing climate change actions with Norway through The REDD+ development program. The REDD+ development program is the reflection of Indonesia's willingness to improve forest management by following and fulfilling guidance set up by UNFCCC dynamic and progressive decisions. Referring to Decision 1/CP.16 Paragraph 70, the Conference of the Parties (COP)-16 in Cancun encouraged developing country Parties to contribute to mitigation actions in the forest sector, following their respective capabilities and national circumstances, by undertaking the following activities: reducing emissions from deforestation, reducing emissions from forest degradation, conservation of forest carbon stocks, sustainable management of forest, and enhancement of forest carbon stock. Various mechanisms and agreements between Norway and Indonesia are made to encourage the realization of the implementation of REDD + since REDD + is funded with the Result Based Payment mechanism, where rewards are earned based on performance appraisal.

These two cases of financial instrument become interesting to compare because we can see two kind of International finance mechanism where one is donor-driven which is REDD+, meanwhile Green Sukuk is truly Indonesia's initiative which using market based approach.

III. New and Renewable Energy (NRE) Projects by Green Sukuk

The Green Sukuk as financial instrument was chosen because of its capability to finance climate change project beyond technical assistance, perform complex and comprehensive mechanism as GoI initiative, large reliance on international resources, aims associated with a topic of critical importance to the country's climate change agenda (NDC of Indonesia) and uncertainties over its future (sustainability dari regulasi green sukuk). While the case study to look at the performance of green sukuk is done by reviewing the implementation of NRE programs, considering that energy is the second largest sector, and expectedly fast growing sector that possibly contribute to a bigger portion of the total emission, to achieve the NDC target after forestry sector.

This chapter is divided into four sections. The first section offers a brief description of the Green Sukuk. The second section analyses the dynamics toward Indonesia climate change policy and regulation related to green sukuk mechanism and energy sector. The third section analyses which outcomes have been achieved in terms of policy development and implementation. The final part summarises lessons learned based on developed hypotheses.

III.1 Green Sukuk Financing Mechanism

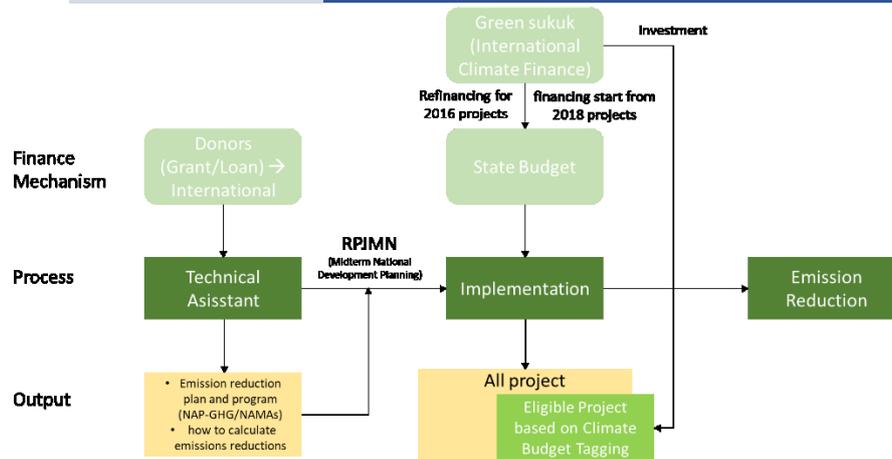
The implementation of climate change mitigation and adaptation programs in Indonesia is stated in the national action plan for reducing greenhouse gas (NAP-GHG) and national action plans for climate change adaptation (NAP-CCA). Various programs from various line ministries related to climate change are included in the document and are integrated into the Medium term National Development Plan

(RPJMN). Based on the President's speech at the COP-15 Copenhagen (2009), the GoI committed to achieve emission reductions target by developing NAP-GHG which GHG, which can be categorized as a National Appropriate Mitigation Actions of developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable reportable and verifiable manner). These various programs would be funding obtained from various financing instrument.

Regarding these conditions, the Government of Indonesia sees the opportunity to finance green activities through sukuk financing mechanisms. Sukuk (SBSN) is issued with the aim of funding programs within the scope of the state budget including funding for project development. This is stated in Law No.19 Year 2008 concerning Government Sharia Securities and Government Regulation No.56 Year 2011 concerning Project Financing through SBSN Issuance. Sukuk is asset-based financing, which is allocated for capital expenditure in the State Budget (APBN), producing underlying assets. The planning process, including the tender for the procurement of goods / services with sukuk financing, fully follows the provisions of the state budget regulations (no intervention by lenders or other parties). In general, the issuance of green sukuk can follow the mechanism of the issuance of state sukuk (SBSN), as well as the wakalah (contracts) used in the issuance.

Then, Indonesia have been able to successfully issue the first Global Green Sukuk in March 2018. Even so, green sukuk can finance projects related to climate change since 2016. This financing mechanism is called refinancing while for financing start from the 2018 fiscal year is called the financing mechanism. The investment through green sukuk were utilized to refinance completed project from 2016 budget (51%) and to finance new projects from 2018 budget (49%). Green sukuk's re-finance mechanism use the state budget as the first method to finance the project. After paid by the state budget, Selection procedure of the green project that can be financed/Re-financed by green sukuk mechanism are based on Climate Budget Tagging (CBT) mechanism. The CBT system is embedded into government's national budget system (ADIK system in 2016 and KRISNA system in 2018) and is established to track and identify expenditures of projects delivering environmental benefits in accordance with Indonesia's climate change targets (BKF Report, 2019). The green projects funded by Green Sukuk are selected from tagged projects that fall into one of the nine Eligible Green Sectors under the framework based on NAP-GHG. After that, the government will issue bonds or sukuk for selected projects. Funds derived from bonds and sukuk will go back into the State treasury as the main instrument of state budget financing to cover the State Budget deficit and to repay debt refinancing and investment for selected projects.

Diagram of Finance Mechanism Scheme of Green Sukuk



Source : ITB Analysis, 2020

Based on the above diagram, there are two mechanisms of assistance from international climate finance. The first ICF encouraged technical assistance in developing the NAP- GHG which was then integrated into the Midterm National Development Planning (RPJMN). The programs in the RPJMN are funded by the state budget whose funding circulation is regulated using the second international climate finance, Green Sukuk. In addition, the Green Sukuk framework, which can be categorized as the green initiative of Indonesia, has become an enabling instrument in the integrated climate change program implemmentation and financing system.

III.2 Implementation through NRE Projects

Based on CDKN report on 2015, Indonesia had faced distinct long-term challenges to its energy system, including the expected growth in energy demand over coming years to rates as high as 7-8% annually; the need to change the current energy mix that leaves Indonesia vulnerable to the price of imported oil due to subsidies; and the country's commitment to substantially reducing national greenhouse gas emissions relative to business as usual. Given the significant contribution of the energy sector towards Indonesia's emissions, one of the efforts undertaken is by constructing and operating NRE which aims to provide access to energy (electricity) to the outside coverage areas and increasing the area's electrification ratio in accordance with the commitment set at the Paris Agreement to reduce emission (Ministry of Energy and Minerals) Resources, 2018). To keep up with the commitment, the Government of Indonesia sets target through Presidential Decree No.22/2017 concerning the National Energy General Plan that stiupates Provision of the general plan of the national energy (targeting the renewable energy shares of 23% in 2025 and 31% in 2050) (Green Sukuk Report, 2020).

Based on green sukuk report (2020), to fulfill this target, this project involves the construction of new and renewable energy infrastructure, with a focus on areas outside the current electricity coverage and undertaken in 2017 and 2019. It aims to improve the electrification ratio in off-grid areas across the country, and therefore stimulate economic activity and improve distribution of economic growth as a form of implementation the equitable energy policy as mentioned in Ministry of Energy Regulation No. 12 year 2018.

III.3 Transformative Change

a. Economical Aspect

From the economic consideration, Green Sukuk plays a role to enabling the construction of renewable energy projects. This project is undertaken in 2017 and 2019. The green sukuk issuance for NRE projects in 2019 up to USD 1.319.620 and USD 3.913.133 in 2018. The project in 2017 involves the construction of solar power plants, solar-diesel hybrid power plants, microhydro power plants, and minihydro power plants, as well as biogas facilities and photovoltaic street lighting, with locations spread across 17 of 34 provinces in Indonesia. The 2019 development of such infrastructure are spread across all provinces and includes the revitalization and maintenance of existing renewable energy infrastructure. The project contributed to an increase of 15,067 electrified households in 2017 while generating 7,429 kW of electricity, reducing the use of diesel-powered generators in areas that are not covered under the national electricity grid, therefore improving the electrification ratio while reducing emissions.

It is known that through the green sukuk financing mechanism, the NRE project impact on emission reduction has been calculated. The impact of NRE projects on emission reduction is calculated based on 3 criteria which are 1) the Annual GHGs emissions reduced / avoided in tonnes of CO₂ equivalent / b;) Annual renewable energy generation in MWh / GWh (electricity) and GJ / TJ (other energy); and 3) The capacity of renewable energy plant (s) constructed or rehabilitated in MW. It is known that there was a decrease in emissions which amounted 1,319,620.41 tonnes from NRE Projects for the issuance of 2017 (Green Sukuk Report, 2020) while the calculation has not been carried out for the issuance of 2019. Based on the calculation results, the implementation of the NRE Project with the green sukuk financing mechanism achieved the emission reduction target of around 1.4 percent of the target the energy sector for electricity generation with NRE from 2017. The number is relatively small compared to the overall energy sector target even for NRE target itself, but we can see that green sukuk potentially play a role as financing window to realize more energy sector programs in achieving the NDC target.

In addition, green sukuk for the NRE Project not only promotes electrification ratios and the achievement of NDC targets, but also supports the realization of sustainable development. Green Sukuk realizes technological changes in producing energy by utilizing renewable energy, while also changing the behaviour of the people who originally used energy based on fuels and also give the benefit to the people who at first don't have any access to use energy. The projects such as Micro-Hydro Powerplants in rural areas can contribute to small-scale productive activities supporting the home industry such as folk crafts or the agricultural sector for post-harvest, and livestock. The environmentally friendly energy can be said to help rural communities in increasing economic growth in the region. It is stated in the report that the projects aim to achieve the SDGs target number 7, 9, and 13 which meant to talks about making sure everyone has access to renewable energy by 2030, ensuring the infrastructure that is needed by everyone to connect with the rest of the world, and deal with the effects of global warming.

b. Political Economy

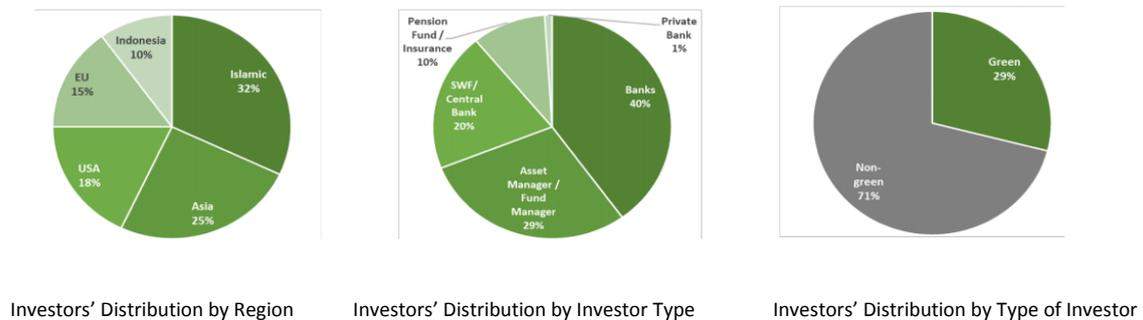
Promising investment for two sides

Green sukuk has promising considerations for the recipient and investors who will be involved. In general, from the side of the recipient agency will get the opportunity to contribute in alleviating the

problem related to climate change. While from the investor's side, they participate in sustainable development as the goal of green sukuk. An interesting consideration for the Republic of Indonesia is that Indonesia has the potential to become the first country to issue Green Sukuk in the international market.

Green sukuk as a financial instrument successfully attracted interest from diverse group of domestic and international investors. Demand from investors amounted to USD 3,000 million, or 2.4 times of tranche size and come from the varied types of financial institutions. The figures below describes the types of investors in the sukuk green financing mechanism. As described by the picture below, 90% of green sukuk investors come from international investor and only 10 % is domestic investors.

Green Sukuk Investor's Type



Source : BKF Report, 2019

Based on picture above, we can see how political economy aspect plays a role in Green Sukuk. Most of the investor (32%) come from Islamic region since green sukuk is sharia bond which attract Islamic country which becomes the biggest investor based on region. The concept of green sukuk also attract some green investor which play 29% on the investment of green sukuk.

From the Indonesian side itself, green sukuk is important to realize programs according to the NDC target of the energy sector. In addition, there are also couples of motives who might play a role for example to attract capital and the second one was to tap into the emerging green market for financial products

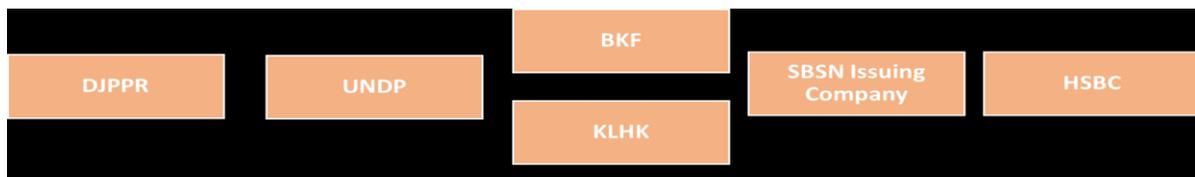
Another aspect to be seen in political economy is the influence of actors from various sides. It is known that this study focuses on the innovation of the green sukuk programs and its relevance on NRE Projects.

Influence of actor - Green Sukuk Initiative

Green Sukuk was initiated by DJPPR (Syariah Financing Direktorat) and the green sukuk framework was developed by UNDP. This Wakalah Sukuk is issued by the Indonesian SBSN Issuing Company III

(PPSI-III), a legal entity of the Indonesian government who have specific purpose to issue the securities in accordance with sharia principles in foreign currencies on the international market. The structure of this sukuk contract is wakalah with collateral assets (underlying assets) including state property (BMN) in the form of land and buildings as much as 51 percent, and government projects that are being and will be built at 49 percent. Deutsche Bank AG, Dubai Islamic Bank PJSC, Maybank Investment Bank Berhad, PT Mandiri Sekuritas and HSBC have roles as Joint Lead Managers and Joint Bookrunner as well as advisors for sustainable project structures. Meanwhile, PT Bahana Sekuritas, PT Danareksa Sekuritas, and PT Trimegah Sekuritas Indonesia Tbk acted as co-managers for the transaction. Meanwhile the reporting of green sukuk was held by Fiscal Policy Agency and MoEF.

Green Sukuk Initiative Actors



Influence of actor - Green Sukuk Issuance Process

Indonesia is also indeed noted as a pioneer in the issuance of green bonds in the Southeast Asia region through the issuance of Green Sukuk valued at USD1.25 billion in March 2018. This transaction goes hand in hand with the issuance of the first ever Green Sukuk in the world by the country of Indonesia (the world's first sovereign green sukuk). To promote green sukuk of Indonesia, The Directorate of Financing and Risk Management, Ministry of Finance held meetings with several countries in the world to introduce the green sukuk mechanism as a door for green financing in Indonesia.

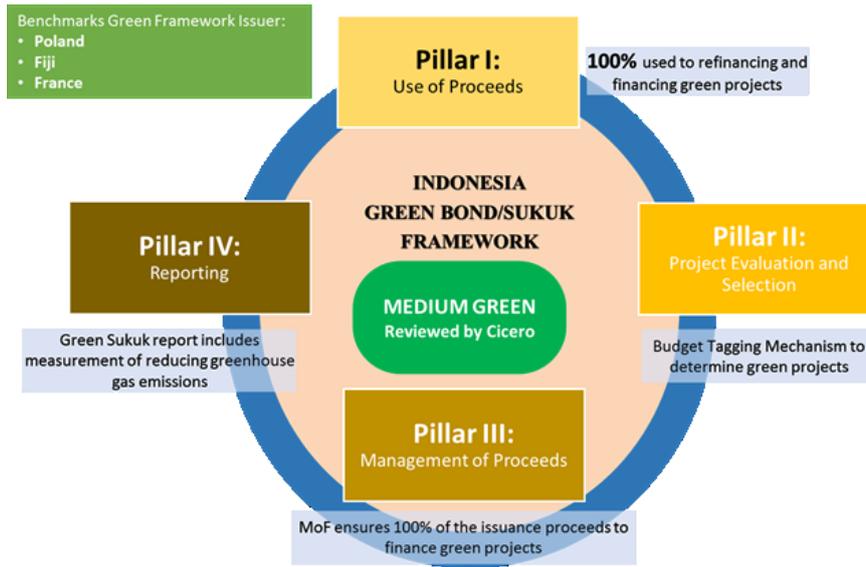
As the result, the Government of Indonesia success in issuing State Sukuk on the international market with a value of USD 3 billion and at the same time success including issuing State Sukuk in the international market to finance environmentally friendly projects (Global Green Sukuk) worth USD1.25 billion on March 1, 2018. In February 2019, the Government of the Republic of Indonesia received international awards "1. Islamic Issues of the Year" and 2. "SRI Capital Market Issues of the Year" from the International Financing Review Asia in Hong Kong. The Government of the Republic of Indonesia also won an international award as the "Most Innovative Debt Management Office (DMO) of the Issuer of Sovereign Sukuk". The receipt of the award demonstrates international recognition and appreciation for the Government's commitment and contribution in overcoming climate change which is realized through the issuance of innovative and sustainable financing instruments. This award is given for the success of the Government of the Republic of Indonesia in issuing a Global Green Sukuk valued at USD750 million in early February 2019.

c. Policy Process and Governance

Governance system

At the end of 2017, the government issued a framework for Green Bonds and Green Sukuk. This Framework regulates the issuance of green bonds and sukuk, and the criteria for green projects that can be financed. Selection of eligible green projects through a list of outputs climate change marked by Ministries in the KRISNA system and budget tagging mechanism.

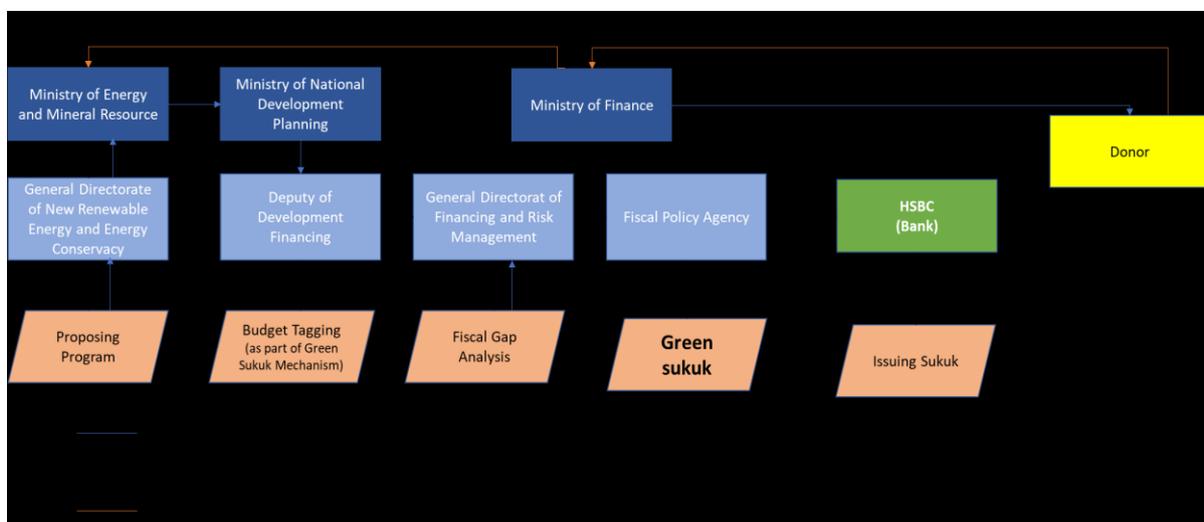
Green Sukuk Framework



Source : DJPPR Interview, 2020

In 2016, the Ministry of Finance initiated the implementation of budget tagging for activities related to climate change mitigation and adaptation. Currently, budget tagging is carried out for the Ministries /Institutions Work Plans through the Budget Performance Planning and Information Collaboration System (KRISNA) and is carried out both for mitigation and adaptation activities. From the results of budget tagging, it can be reported that the climate change budget in Indonesia increased nominally from IDR 72.4 trillion in 2016 to IDR 109.7 trillion in 2018. Indonesia will need about USD 81 Bio to finance Mitigation & Adaptation Actions in 2015-2020 (TNC Report to UNFCCC, 2017). Based on the green sukuk framework, various stakeholders have their respective functions according to their functions in climate change budgeting and planning. Coordination among stakeholders can be seen in the Figure as follows.

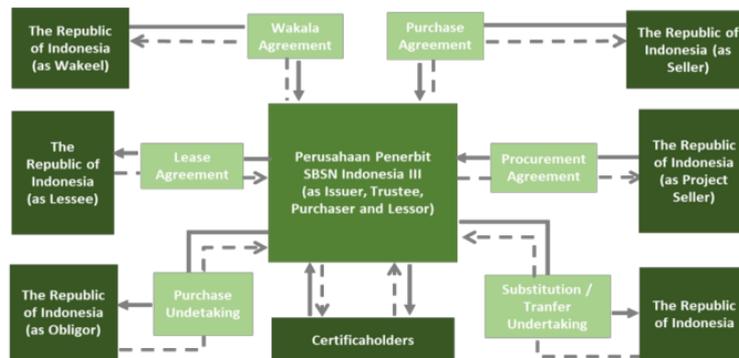
Coordination Between Stakeholder based on Green Sukuk Mechanism



Source : ITB Analysis, 2020

Based on the figure presented above, the Ministry of Energy and Mineral Resources proposes a program to be financed by Ministry of National Planning and Development. Eligible programs will be selected through budget tagging by the KRISNA system developed by Ministry of National Planning and Development. Then, the eligible programs will be calculated in terms of their fiscal gap and financial risk by the Directorate of Financing and Risk Management and then submitted to Fiscal Policy Agency to be processed through green sukuk. Then, HSBC (year 2018) as a management bank will issue the sukuk and sell to donors which already get the information related to sukuk from Ministry of Finance promotion. The money from donors will go into state income as an investment and be used for financing and refinancing programs that can be funded by green sukuk. After the program is implemented, the Ministry of finance will report to the donor. The detail about issuance process of green sukuk can be seen in the below figure.

Green Sukuk Issuance Process



Source : BKF Report, 2019

Green Sukuk is issued by the Indonesian SBSN Issuing Company III (PPSI-III), a legal entity of the Indonesian government who have specific purpose to issue the securities in accordance with sharia principles in foreign currencies on the international market. Deutsche Bank AG, Dubai Islamic Bank PJSC, Maybank Investment Bank Berhad, PT Mandiri Sekuritas and HSBC have roles as Joint Lead Managers and Joint Bookrunner as well as advisors for sustainable project structures. Meanwhile, PT Bahana Sekuritas, PT Danareksa Sekuritas, and PT Trimegah Sekuritas Indonesia Tbk act as co-managers for the transaction.

Based on the explanation above, we can say that the Green Sukuk framework, which can be categorized as the green initiative of Indonesia, has become an agent in the integrated climate change funding system to manage the climate change implementation in Indonesia. Green sukuk framework fills the system gap in the planning process to the implementation of energy programs and opens up financial opportunities to realize the NRE program which is part of achieving the NDC target.

Meanwhile, in the other side, it is known that green sukuk is a investment mechanism that using shariah agreement, it make the agreement and sharing profit should be clear and there should be real assets. As DJPPR (Syariah Financing Directorate) said that Green Sukuk Future Challenges are :

- Indonesia doesn't have enough underlying assets/limited assets
- How to modify underlying assets/structure in the future
- Challenges for the line ministries to provide the assets and using green sukuk instrument
- The preparedness of the line ministries for changing green sukuk into project based mechanism

III.4 Summary and Lesson Learned from Hypotheses

Indonesia has developed various innovative financial instruments such as Green Sukuk which has been successful in opening the windows to finance the NRE Projects. Moreover, it becomes the potential instrument in financing projects to achieve Indonesia 29% NDC Target. Particularly, the financed projects have managed to achieve positive results by contributing to implement existing planned programs and refinancing the program which has been done and encouraging the sustainable development through green projects.

A number of factors and conditions have contributed to the attainment of such outcomes. We can highlight:

Economic

- a) Green sukuk as the innovative instrument enabling the implementation of equitable projects and give the long-term impact to the society
 - Innovative instrument : When almost all International Climate Finance focus on technical assistant financing and there are still finance needs for programs implementation, green sukuk is present as a window to finance the implementation of planned programs. Green sukuk see opportunities for bond sales trends in Indonesia and sharia mechanisms to become "green sukuk" that can attract many investors, both green investors and Islamic countries investors. This mechanism also allows Indonesia to achieve the NDC target (29%), without having to tapping the target of 41 percent because green sukuk investment goes into the state budget.
 - Equitable projects : The government provides electricity for as the form of implementation the equitable energy policy as mentioned in Ministry of Energy Regulation No. 12 year 2018. This is happening through the construction of various electricity installations sourced from NRE. The areas of which the program is implemented are underdeveloped regions and small islands in Indonesia. All provinces in Indonesia was covered by the pogram through green sukuk financing instrument
 - Long term impact : Green Sukuk realizes technological changes in producing energy by utilizing renewable energy, while also changing the behaviour of the people who originally used energy based on fuels and also give the benefit to the people who at first don't have any access to use energy to make industries in small scale so they can get the more sustainable profit.

Political Economy

- a) Financing instrument innovation which related to nowadays trend is effective in catalysing the implementation process of climate change activity
- Innovative instrument : When almost all International Climate Finance focus on technical assistant financing and there are still finance needs for programs implementation, green sukuk is present as a window to finance the implementation of planned programs. Green sukuk see opportunities for bond sales trends in Indonesia and sharia mechanisms to become “green sukuk” that can attract many investors, both green investors and Islamic countries investors. This mechanism also allows Indonesia to achieve the NDC target (29%), without having to tapping the target of 41 percent because green sukuk investment goes into the state budget.
 - It is also known that green sukuk as a financial instrument successfully attracted interest from diverse group of domestic and international investors. Demand from investors amounted to USD 3,000 million, or 2.4 times of tranche size and come from the varied types of financial institutions.
 - Most of the investor (32%) come from Islamic region since green sukuk is sharia bond which attract Islamic country which becomes the biggest investor based on region. The concept of green sukuk also attract some green investor which play 29% on the investment of green sukuk.
- b) Initiatives and the government's capacity to see market opportunities play a role in increasing investment in climate change activities
- Indonesia is indeed noted as a pioneer in the issuance of green bonds in the Southeast Asia region through the issuance of Green Sukuk valued at USD1.25 billion in March 2018 and USD 0.75 billion in February 2019. The amount of Green Sukuk for renewable energy in 2018 USD 102,519,477 and USD 41,262,037 in 2019. See the “green” aspect could be potential in attracting investor
 - The Government of the Republic of Indonesia also won an international award as the "Most Innovative Debt Management Office (DMO) of the Issuer of Sovereign Sukuk".

Policy Process and Governance

- a) Integrated system and open data (Budget tagging, KRISNA) enhance the more collaborative and transparant management of planning and evaluation system related to climate change projects
- Green Sukuk framework, which can be categorized as the green initiative of Indonesia, has become an agent in the integrated climate change from planning and budgeting system. Based on the green sukuk framework, various stakeholders have their respective functions according to their functions in climate change planning and budgeting
 - Selection procedure of the green project that can be financed/re-financed by green sukuk mechanism are based on Climate Budget Tagging (CBT) mechanism. The CBT system is embedded into government’s national budget system (ADIK system in 2016 and KRISNA system in 2018) and is established to track and identify expenditures of projects delivering environmental benefits in accordance with Indonesia’s climate

change targets (BKF Report, 2019). It helps the planning and evaluation process of the projects

- b) Specific needs (resources in terms of technical assistance, finance, capacity development, from ICF sources) strengthens the implementation possibility when aligned with existing policies.
 - Programs funded by green sukuk are a collection of programs that were previously funded by other international climate change mechanisms. Through this funding, there is a need for programs to achieve the NDC target. This is important because Green Sukuk requires careful planning, Green Sukuk is only an instrument that can fund programs with underlying assets. So, if the plan or asset has not been identified, then the investment cannot be carried out

IV. REDD+

Reducing Emissions from Deforestation and Forest Destruction, or Reduction of Emissions from Deforestation and Forest Degradation (REDD), is a mechanism for reducing deforestation and forest destruction with a view to reducing emissions from deforestation and forest destruction. The overall goal of REDD + is to help mitigate global climate change, by creating incentives for various countries to reduce greenhouse gas emissions caused by deforestation and forest degradation.

REDD in Indonesia began long before the Indonesia-Norway Lol was signed. The idea of REDD + in Indonesia strengthened in 2007 precisely at the time of the Indonesian COP in Bali. President SBY stated that Indonesia would contribute to the REDD+ scheme. This commitment is followed by the commitment of the Indonesian government to climate change through the RAN-GRK which is then disseminated to the Norwegian government. On May 26, 2010, the Indonesia-Norway Lol was created as a form of Norwegian support for climate change activities in Indonesia.

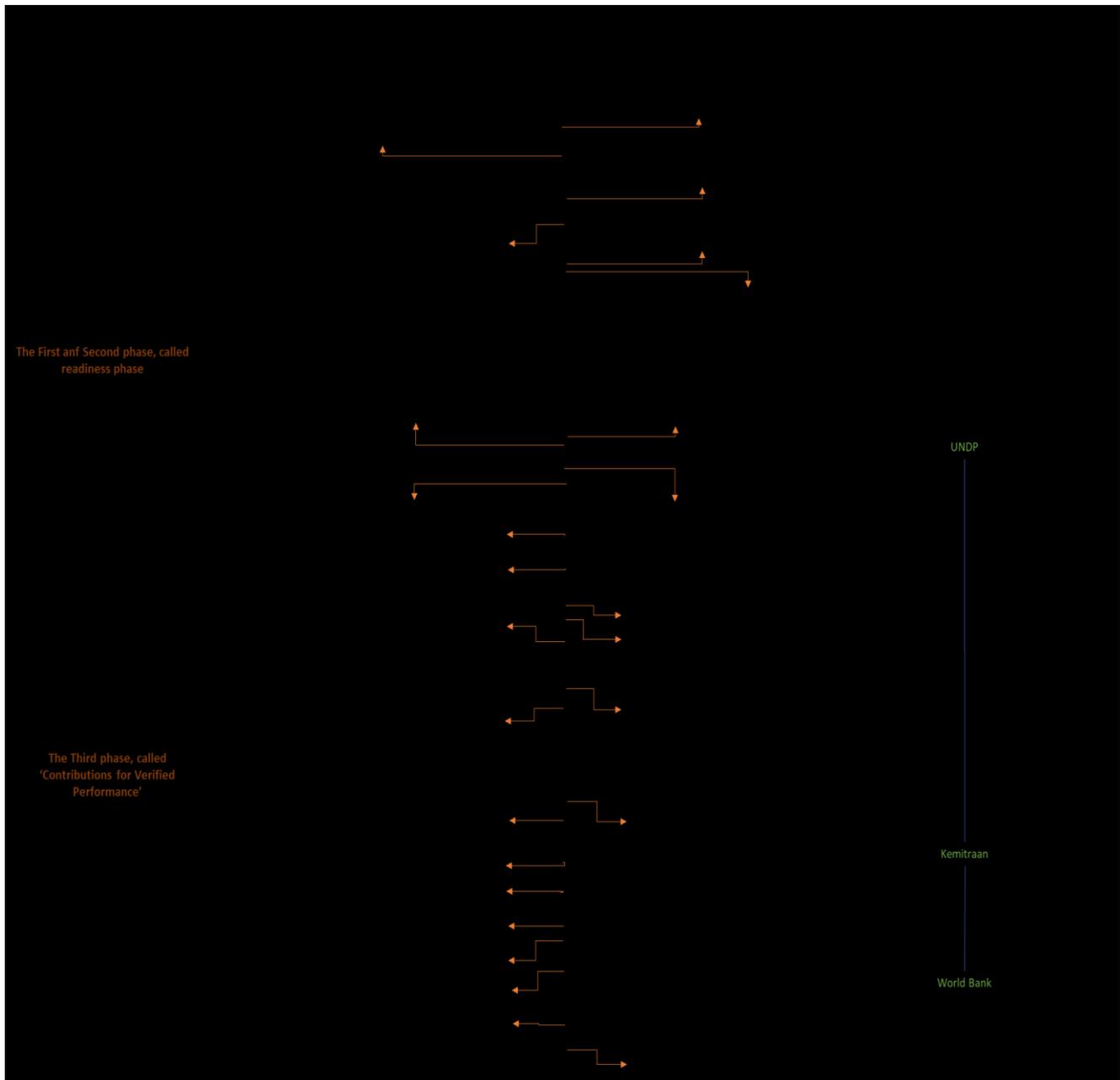
In line with Indonesia First NDC, REDD+ will be an important component of Indonesia's NDC targets in the land-based sector (NDC, 2016). The Forest Reference Emission Level (FREL) for REDD+ was submitted to the UNFCCC Secretariat in December 2015, which included deforestation and forest degradation and peat decomposition. FREL is set at 0.568 GtCO₂e / year for the Above Ground Biomass carbon pool, using the reference period 1990-2012 and will be used as a reference to actual emissions from 2013 to 2020. In line with its commitment, In 2016, Indonesia (the Government and the Parliament) successfully agreed to ratify the Paris Agreement through the enactment of Act No. 16/2016 Article 5 of the Agreement recognizes the role of forests sector and REDD+.

The importance of REDD+ is clearly reflected in the document of the 1st Indonesian NDC, where REDD+ is the back-bone of achieving mitigation target from forestry sector. The REDD+ development programme is the reflection of Indonesia's willingness to improve forest management by following and fulfilling guidance based on UNFCCC decisions. The national strategy of REDD+ in Indonesia has two main foci: enhancement of forest and peatland governance and development of the infrastructure of REDD+. Infrastructure development includes the establishment of the REDD+ Agency; a funding instrument; and a measurement, reporting and verification (MRV) institution. As for, the essential elements for REDD+ implementation, i.e.

- a) REDD+ National Strategy,
- b) Forest Reference Emission Level (FREL),

- c) National Forest Monitoring System (NFMS),
- d) Safeguards Information System (SIS), and
- e) Measuring, Reporting and Verification (MRV) system.

Since its early development, Reducing Emissions from Deforestation and Forest Degradation (REDD+) programme in Indonesia is not regarded as the only mechanism for emission reduction from forest, but rather as fundamental and momentous opportunity as well as challenge for reformation of forest and land governance. The following picture is an overview of REDD + historical development.

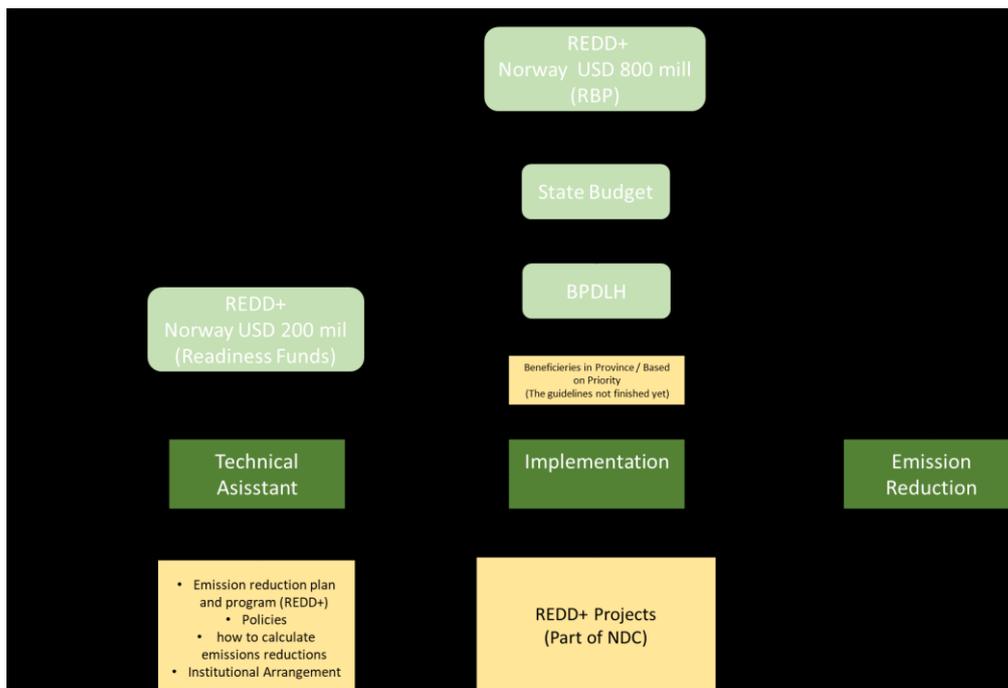


Source : ITB Analysis, 2020

IV.1 REDD+ Financing Mechanism

Since 2005, an international policy framework has been in development to financially incentivize emissions reductions from deforestation and forest degradation and to conserve and enhance carbon sinks (REDD+). It was agreed at the 12th meeting of the GCF Board in March 2016 that it would operationalize the results-based payment aspects of REDD + finance disbursement before the end of the year. REDD+ Indonesia refers to article 5, which is a financing mechanism without carbon transfer so that REDD+ financing is a profitable and safe financing for Indonesia REDD + Indonesia refers to article 5, the cooperation for financing mechanism doesn't need carbon transfer so that REDD+ is a profitable and safe climate change financing mechanism for Indonesia. Berikut dapat dilihat schematic mekanisme pembiayaan melalui REDD+.

Diagram of Finance Mechanism Scheme of REDD+



Source : Team Analysis, 2020

Based on the diagram above, it can be seen that REDD + is one of the funding mechanisms that drives climate change actions from preparation to implementation including the calculation of the emission reduction. In Indonesia's REDD+, there are generally two phases. The first phase is a readiness phase carried out with USD 200 from Norway and an implementation phase worth USD 800 out of a total of USD 1 billion. In the readiness phase, REDD+ funds were used to technical assistant and develop institutional set-up and policy regarding its implementation. In this implementation phase, the financing mechanism through the Result Based Payment scheme is implemented. The Result Based Payment (RBP) mechanism is given as an incentive from Norway for Indonesia's performance in implementing the REDD+ program. It is known that Indonesia's NDC **emission reduction target** has been set with about 17.2 percent from emission baseline from land and forestry sector. The forestry sector financing estimates are 75-80 percent sourced from The Result Based Payment - REDD+ funds. The RBP process start from the calculation of the emission reduction which

to be claimed to the Norway. The carbon stock calculation results are reported to the Minister of Finance for claims and the claims will be paid periodically. Then the funds will go to the state budget will be earmarked to Environment Funds Management Agency (*Badan Pengelola Lingkungan Hidup - BPD LH*) to be transferred to beneficiaries as investment funds which will be used to finance the 2020-2037 emission reduction target or will be used in accordance with the priorities set by BPD LH. Based on MoEF regulation No. 70, beneficiaries will be distributed to each province and can be used limitedly for the benefit of the environment (on progress to making the guideline).

IV.2 Project Implementation

The development of REDD+ in Indonesia is still in the preparation stage, although it is planned that REDD+ in 2014 will begin to be fully implemented. But until now there have been no studies that confirm the results of the implementation of REDD+ with a view to impacts on the development of forest and land use sector in Indonesia. Otherwise, calculations have been carried out for 2016 and 2017 to see Indonesian performance so the REDD+ incentive from Norway can already be claimed at 11 million tonnes (USD 55 million). Based on interviews with the Head of the Sub-directorate of REDD+, The Ministry of Environment and Forestry, the Indonesia is in the process of claiming Norway's RBP fund. The financing should be claimed at the October 2020.

For the time being, it is known based on REDD Report 2018 published by Ministry of Environment and Forestry, during the implementation of REDD period in 2013-2017 Indonesia has reduced 20.4% emissions from deforestation and forest degradation or 10.4% if peat decomposition is included. Total emissions from deforestation, forest degradation and peat decomposition combined from period 2012-2013 to 2016/2017 are 299 MtCO₂ from all proposed activities or 259 MtCO₂ while excluding peat decomposition, which both values on with and without peat decomposition emission, are still lower than the baselines. Yet complete calculation in the complete year (2017-2018) has not done, as the period of data source provided for land cover, land cover change and forest fire data sets, have not been completed. However, this issue regarding REDD+ emphasizes the quantification of the impact related to the program is still not calculated yet and the impact document needs to be prepared as a report to receive a reward considering the mechanism of REDD+ funding is the result based payment.

IV.3 Transformative Change

a. Economical Aspects

Regarding the economic transformation that occurred as a result of the Norway-Indonesia cooperation related to REDD+, it cannot be seen significantly yet. The economic impact has not yet been measured because the process of implementing REDD is still at the readiness stage and the claimed for the performance for year 2016-2017 still on the process.

The distribution of funding from REDD + is divided into two, which are for preparation and implementation. Based on the results of interviews with the Ministry of Environment and Forestry, it is known that from the commitment value of the RI-Norway Letter of Intent (LoI) of 1 USD Bill, USD 200 mill is allocated for readiness. From USD 200 mill, it has been partially used for the readiness process and currently there still remains USD 26 mill. As for the USD 200 million, it is used to develop

various policies and task forces to implement REDD+ programs. Here are some results from the readiness funds of REDD+

i. REDD+ Institution

- Indonesia's agreement with Norway has implications for the necessity of having an Institutional unit that regulates and reports directly to the President on the progress of implementing REDD+ projects. Based on this commitment, various efforts to establish institutions responsible for the implementation of REDD + continue to be made using the REDD+ readiness financing. The development of REDD+ Institutional arrangement start from REDD+ Task Force, REDD+ Management Agency until it merged into the Ministry of Environment and Forestry

ii. Moratorium

One of main strategy of emission reduction is moratorium of new license or land concession release in peat lands. A number of presidential regulation have been released to materialize in achieving of emission reduction target that in line with spirit of improvement in forestry sector.

iii. REDD+ implementation instrument such as

- National Strategy, Forest Reference Emission
- Level (FREL) / Forest Reference Level (FRL),
- Measuring, Reporting, Verifying (MRV),
- National Forest Monitoring Systems (NFMS),
- Funding Instruments,
- Safeguards and the REDD + Safeguard Information System,
- System National Registry (SRN)

iv. MoEF Regulation Number 70 Year 2017 about Implementation Guidelines for Reducing Emissions from Deforestation and Forest Degradation, Role of Conservation, Sustainable Management of Forest And Enhancement Of Forest Carbon Stocks

- National approach and implemented in sub-national level Local government (provincial government) has a role to control the emission reduction measures in sub-national levels involving REDD+ entities
- In the case of REDD+ Norway, as long as it can build justification from the theory of change it is possible to include other programs (besides forestry)
- REDD+ Finance management is under BLU (*Badan Pengelola Dana Lingkungan Hidup/ Environmental Fund Management Agency-MoF*): Explain the BLU mechanism including the consist of steering committee (a combination of various ministries) to provide proposals for the preparation of program strategies and to support ideal coordination between the line ministries

The Indonesia-Norway partnership consists of three phases. First phase; funds will be used to finalize Indonesia's forestry and climate strategy and lay the foundations of supporting policies and institutional reforms. Second phase; aiming that Indonesia is ready to contribute to verified emission reductions while at the same time taking the initiative to mitigate on a larger scale through pilot

projects at the provincial level. Third phase; Indonesia is expected to be able to implement a nationally verified emission reduction mechanism.

However, although the strategy includes concept of what we call now as Result based-payment which means to compensate all activities related to REDD+ activities based on performance indicators, after seven years of implementation the progress so far show that it is still not completed yet. Even though there are many sources of finance from International donors, in fact the amount of money is still not enough for the implementation of climate change program and action in Indonesia. This is because operational costs and initial costs are still needed. Long process of materialization of concept into implementation could become potentially obstacle on future emission reduction in forest sector. Therefore, factors that have contributed to long-process need to be scrutinized and tackled for better program in the future.

b. Political Economy Aspect

Moratorium

Related to the government's REDD+ policy and the Letter of Intent (LoI) signed with the Government of Norway, in 2011 President Yudhoyono announced a two-year moratorium on new forest concession licenses for primary forest and peatland, which was later extended for two additional years (2013–2015). On May 13, 2015 Indonesian President Joko Widodo extended the moratorium for a third time. The moratorium means to allow the government to develop improved processes for land-use planning and permitting, strengthen data collection and information systems, and build institutions necessary to achieve Indonesia's low emissions development goals (Austin et al., 2012). The Moratorium itself is a process of collective negotiation and a transformational national policy between Indonesia and Norway. Although the interaction developed between Norway and Indonesia is more a form of support than demanding. For the moratorium itself, support from Norway appeared in the the form of funding to encourage the creation of a moratorium.

The moratorium of new license or land concession release in peat lands was originally envisioned as a 'stepping stone' towards reforming Indonesia's land tenure system and lowering the rate of deforestation (Austin et al., 2012). Peatlands receive special attention in the moratorium because of their significant role in storing carbon and providing other environmental services, including water and biodiversity conservation. Indeed, the main positive environmental impacts of the moratorium stem from the additional protection that it extends to this ecosystem (CIFOR, 2011). To support the achievement of the moratorium, The GoI developed One Map Policy (OMI) which intended to ensure the number of peatlands and primary forests that must be protected. Later on, this One Map Policy will not only benefit the forestry sector, but will also integrate and answer the needs of various sectors.

As the result, it is known that the estimation of Indonesia's emission rates without the moratorium between 2011 and 2015 would likely have been 1.0–2.7% higher than they were with the moratorium in place (Busch et al., 2015). This calculation is based on data from the years 2000–2010 that showed that 58.7% of emissions from deforestation came from outside of existing concessions and areas protected by the moratorium (Andersen, et.al, 2016). From those data, we can estimate that even the impact of moratorium toward the reduction of emission is not significant. Moreover, the moratorium leads Government of Indonesia to keep the commitment on setting regulation related to forestry of Indonesia as elaborated within the policy process and governance section below.

In the other side, with the protection of primary forests and peatlands causes limited expansion of oil palm land. Meanwhile, in Indonesia itself the role of palm oil in economic development and environmental degradation has become such a highly debated topic since Indonesia has 14 million hectares (ha) of oil palm and its palm oil exports were valued at USD 23 billion in 2017 and USD 21 billion in 2018 (Purnomo et.al, 2020). Pressure from global markets and the need to fulfill the domestic economy are inevitable in this debate. This has become one of the political economy dilemmas regarding optimizing the role of REDD+ for comprehensive land protection policies.

Based on the study conducted by Irawan et,al (2013) the estimates of the minimum REDD+ payment to compensate for the opportunity costs of oil palm plantations in Indonesia based on the 2013 palm oil prices, cost amounts to about US\$57 per tCO₂ for the case of plantations on mineral soils and logging in degraded forest using the higher carbon stocks reported in the literature, and a mid-range discount rate of 10%. This estimate does not include other costs, such as the management of REDD+ activities and transaction costs. Given that large areas of forest have been degraded – 55.6% and 49.4% of secondary forests in areas classified as production forests and in all areas classified as forests respectively (Ministry of Forestry, 2008b) – it seems that the establishment of REDD+ activities in those areas may be too costly if the development of oil palm plantations is an option. The study highlight the importance of considering the political economy of land-use change, including the distribution of power between the central and local governments, and the existing incentive structures influencing different stakeholders in the pursuit of forest exploitation and land-use change.

c. Policy Processes and Governance Aspect

As already mentioned before, the importance of REDD+ is clearly reflected in the document of the 1st Indonesian NDC, where REDD+ is the back-bone of achieving mitigation target from forestry sector. To support the work, President released the President Regulation no. 16/ 2015 on Ministry of Environment and Forestry (MoEF), then followed by the Ministerial Regulation no. 18/ 2015 on Organization and Work Mechanism of MoEF. In order to help, the roles of MoEF are to conduct governance matters on environment (including climate change issues) and forestry sector. Several policy and regulation have been enacted to support NDC through REDD+ as can be seen from the table belows,

Policy and Regulation Related to REDD

| No. | Regulation | About |
|-----|---|--|
| 1 | Ministerial Regulation No. 70/2017 on REDD+ Implementation (Tata Cara Pelaksanaan REDD+), considerations: | Indonesia's commitment on GHG emission reduction (Target 29% and 41% on 2030) |
| | | MoEF is assigned to policy formulation and implementation of climate change control |
| | | Climate change mitigation actions in forestry sectors, that are conducted through reduction of emission from deforestation and forest degradation, role of conservation, sustainable management of forest and enhancement of forest carbon stocks, are implemented at both national and sub-national level |
| | | The implementation refers to CoPs' Decisions and Paris Agreement |

| No. | Regulation | About |
|-----|--|--|
| | | REDD+ is mitigation action in forestry sector with policy and positive incentive approach and becomes an important component of contribution on NDC target achievement |
| 2 | Ministerial Regulation No. 71/2017 on National Registry System. It has been authorized to complete the requirement of MRV system | In order to record the existence of climate change actions (including REDD+ related activities) in Indonesia |
| | | To support the implementation of Paris Agreement, in particular on the rules of CTU (clarity, transparency and understanding). |
| | | Recognition to the contributions from various stakeholders |
| | | Provide public data and information on the actions and resources on adaptation and mitigation as well as their achievements |
| | | To avoid double counting on the actions and resources |
| 3 | The Ministerial Regulation No 72/2017 on Guideline for MRV Implementation (of climate change actions and resources) | This is the follow up or mandate of Presidential Regulation no. 71/ 2001 on Implementation of National GHG Inventory |
| | | Considers the MRV of climate change actions and resources should be done to ensure accountability of achievement with accurate, transparent and accountable manners |
| 4 | The Directorate General of Climate Change Control's Regulation no. P.5/SET/KUM.1/12/2017 on Guideline of GHG Emission Calculation for Community based Climate Change Mitigation Actions (Pedoman Penghitungan Emisi GRK untuk Aksi Mitigasi Perubahan Iklim berbasis Masyarakat) | The regulation encompasses 4 main sectors, i.e.: Energy Sector; Forestry Sector; Agriculture and Livestock Sector; and Waste Sec |
| | | This tool is designed by application of cellular based-technology and simplified to make easy use. Therefore public users are able to calculate directly their emission reduction on the site. It is supplemented also by spatial technology |
| | | In addition, the tool has also been accompanied by a book manual "Sistem Perhitungan Reduksi Emisi GRK secara Cepat, Tepat dan Responsible/ Fast, Accurate and Responsible GHG Emission Reduction Calculation System". The development of this manual is supported by GGGI-Global Green Growth Institute |
| | | This tool is design and intended to support NDC implementation from NPS- Non-Party Stakeholders (provincial and district governments, private sectors, and communities) |
| | | It is expected that calculation results of climate change mitigation actions conducted by public/ communities can be reported to the MoEF/c.q. DG of CCC through the on-line system of SRN-Sistem Registri Nasional/ National Registry System |
| | | As information, detailed achievements are coordinated and monitored by relevant ministries that have been assigned as a leading ministry/institution responsible for the specific sector |
| 5 | Governmental Regulation no. 46/ 2017 on Economic Instrument for Environment | |
| 6 | The regulation has been an initiative of Ministry of Environment for decades in order to support implementation of environmental protection and management | |

Source : ITB Analysis, 2020

Even though various regulations have been developed to make REDD+ of Indonesia successful, there are still some challenges given that the financing mechanism with REDD+ uses Result Based Payment which requires proof of emission reduction through the forestry sector, and then the cost of protecting the forest is reimbursed. One thing that continues to be a major challenge for a successful transition to sustainable natural resource management lies in its governance. Unclear regulation of forest and land tenure rights; there is no agreement on who has the right to own, access or control Indonesia's forests; differences in forest area data between one source to another source triggering the development of **One Map Policy/One Map Initiative (OMI)** as an initiative as well as the transformative change to increase transparency and effectiveness of forest governance and spatial planning in responding to REDD needs.

Based on study conducted by Mulyani and Jepson (2017), one of the OMI's most significant contributions as the contingency effect with respect to policy coordination amongst government ministries. The Geospatial Information Law No. 4/2011, which mandates the Geospatial Information Agency to lead the implementation of the OMI policy, including the preparation of system infrastructure and the standardisation of existing maps, was considered significant as it decouples mapping from 'ego-sectoral' strategies which not only helps to regulate forest-things related matters but also brings a critical juncture to Indonesian governance related to map-aspects. OMI becomes a vehicle to improve sectoral policy integration by breaking forms of 'ego-sectoral' path-dependency that puts the interests of individual ministries before those of the nation. OMI is not merely a map or product, it is a movement towards greater transparency and public participation in map-making, and importantly transparency in the land-use licensing process, all of which represent a new paradigm in the governance of map-making.

The Development of REDD+ Institutional Arrangement in Indonesia

In managing REDD+ agreements of Indonesia, The President has direct authority to determine the formation of REDD+ governance in Indonesia. Indonesia's agreement with Norway also has implications for the necessity of having an Institutional unit that regulates and reports directly to the President on the progress of implementing REDD+ projects. Based on this commitment, various efforts to establish institutions responsible for the implementation of REDD + continue to be made.

In 2011, the President issued Presidential Decree Number 19/2010 concerning the Task Force for the Establishment of a REDD + Institution, which ended its term of office on 30 June 2011. The first REDD+ task force was the Indonesian government's response to the Norwegian Government which signed the Lol with Indonesian government. The establishment of the first REDD Task Force made some outputs such as; Draft of the National REDD+ Strategy which has been widely consulted with various parties, Inpres 10/2011 concerning Postponement of Granting of New Permits and Improving Governance of Primary Natural Forests and Peatlands, as well as selection and implementation of activities in Central Kalimantan Province as The first REDD + Pilot Province in Indonesia.

In September 2011, as a follow up to the establishment of the first REDD+ Task Force, the President issued a Presidential Decree No. 25/2011 and formed the second REDD+ Task Force consisting of 10 working groups (*Pokja*). Each *Pokja* is chaired by elected people from government and non-government levels who work intensively and build cross-sectoral relations. This approach will synergistically integrate the work of policy makers at the national level by accommodating local knowledge and aspirations with the hope of becoming a transparent, participatory and accountable

institution. This is in line with good governance that is authoritative, responsive, and adaptive to the fast-moving world development. At the end of 2012, the REDD+ Task Force ended its tenure with the following output:

- Presidential Decree on Establishing REDD+ Institutions, which includes the Financial Management Scheme (*FREDDI*) and MRV Strategy;
- Multi-Door Approach Law Enforcement Guidelines and Academic Documents regarding One Door License;
- Guidelines for Mainstreaming REDD+ into the Development Planning System and *MP3EI* Greening Guidelines;
- National REDD+ Strategy Document and Provincial Strategy Plan and Action Plan (*SRAP*) of West Sumatra, Riau, West Papua and East Kalimantan;
- Renewal of the Indicative Map for Postponing New Permits (PIPIB) related to the implementation of Presidential Instruction no. 10/2011;
- Establishment of an online REDD + Task Force website: <http://www.satgasreddplus.org> and various publications and stakeholder engagement activities related to REDD +

In 2012, a Presidential Decree Number 5/2013 was issued concerning Amendments to Presidential Decree Number 25/2011 concerning the Institutional Task Force for Reducing Emission from Deforestation and Forest Degradation (REDD+) which stated that a third REDD+ Task Force would oversee the establishment of a REDD + institution known as the Agency for REDD+ Manager.

The REDD+ Management Agency (*BP REDD+*) is a ministry level institution established through Presidential Decree No. 62/2013 to carry out the task of guarding the decline in deforestation rates, renewing governance and transparency in the management of Indonesia's natural resources. *BP REDD+* is tasked with assisting the President in coordinating, synchronizing, planning, facilitating, managing, monitoring, monitoring and controlling REDD + in Indonesia. However, based on the results of the evaluation, the REDD+ Management Agency was deemed ineffective in implementation actions at the regional level and had difficulty coordinating with several ministries, so that in 2015, President Joko Widodo made a dissolution of the *BP REDD+* and integrated these institution into the Ministry of Environment and Forestry then managed directly under a special General Directorate of Climate Change Control in the hope of strengthening the implementation with making a command line and making it easier to give authority to the regions. To strengthen the mechanism of governance and funding of the REDD + program, in 2017 a new trust fund was formed by Ministry of Environment and Forestry namely the Environmental Fund Management Agency which will be formalized in September 2020.

For institutional set-up, the condition of pre and post the dissolvment of *BP REDD+*, each has advantages and disadvantages. In the pre condition, it is known that REDD+ doing more better in coordination but weak in implementation which can be seen from the regulation which has been set up compared the post condition. Meanwhile the Post condition relatively weak in coordination but better in implementation. This is shown by the process of policy set up and the fast progress for claiming the incentive from Norway. However, considering that Indonesia's NDC target has been set, with 17.2 percent of forestry mean when the forestry sector financing estimates are 75-80 percent sourced from REDD+ funds, of course REDD+ workloads become so heavy. There are issues regarding regulations related to oil palm as a threat to economic perspectives and forest cover as a threat to climate change. In addition, the forestry sector itself is interspersed with many development and land management agendas that require a lot of coordination across sectors. Therefore, REDD+ still needs

support at a higher level of government. Currently, it is regulated at level 3 government inside Ministry of Environment and Forestry so it is less effective for coordination with other institutions or sectors. REDD+ workloads should also be regulated by higher levels of government and has the implementation authority, so that it has power over policy and responsiveness to the program implementation.

Other challenge of REDD+:

- In fact many private parties interact with outsiders to conduct carbon trading. This condition will be the challenge since the amount of Indonesia carbon still not achieved the NDC target yet. The phenomena must be regulated.
- Currently several European countries shifted REDD+ scheme to article 6, so that later the mechanism will become carbon trading (it will change cooperation into buying and selling)

During the Lol period, the progress of REDD + in Indonesia appeared to be slow. Compared with Brazil's success story in REDD+, there are several factors that hinder Indonesia, which Indonesia condition which have large and broad geographical obstacle and complex Indonesian governance structure. The dynamics of changes in governance are also become a slowing factor, bilateral agreements are also work slowly (reinforced by the issue of environmental and forestry merging).

REDD + requires political infrastructure to reduce emissions. The implementation of REDD + is faster in Brazil because Brazil has a starting point far more advanced than Indonesia. At that time Brazil only needed to prepare a financing mechanism because institutions and regulations were sufficiently settled while Indonesia had to start from zero.

IV.4 Summary and Lesson Learned from Hypothesis

Economics

- a) REDD+ financed capacity development resulted in the preparation of new policies (one map, moratorium), but did not lead to the flow of real financial contributions at the scale as it was expected
 - Regarding the **economic transformation** that occurred as a result of the Norway-Indonesia cooperation related to REDD+, it cannot be seen significantly yet. The economic impact has not yet been measured because the process of implementing REDD is still at the readiness stage
 - The distribution of funding from REDD + is divided into two, which are for preparation and implementation. Based on the results of interviews with the Ministry of Environment and Forestry, it is known that from the commitment value of the RI-Norway Letter of Intent (LoI) of 1 USD Bill, USD 200 mill is allocated for readiness. From USD 200 mill, it has been partially used for the readiness process and currently there still remains USD 26 mill. As for the USD 200 million, it is used to develop various policies and institutional arrangement to implement REDD+ programs.
 - Even though various regulations have been developed to make REDD + of Indonesia successful, there are still some challenges given that the financing mechanism with REDD + uses Result Based Payment which requires proof of emission reduction through the forestry sector, and then the cost of protecting the forest is reimbursed. These condition is triggering the development of **One Map Policy/One Map Initiative (OMI)** as an initiative as well as the transformative change to increase transparency and effectiveness of forest governance and spatial planning in responding to REDD needs .Furthermore, OMI is not

merely a map or product, it is a movement towards greater transparency and public participation in map-making, and importantly transparency in the land-use licensing process, all of which represent a new paradigm in the governance of map-making.

Political Economy

- a) REDD+ programme resulted in the establishment of the moratorium, and which had an effect on lowering deforestation rates, but REDD+ programme was not impactful enough to achieve a change in the political economy due not fully inline with national policies on palm oil production as of signification contribution to national economy revenue.
- Related to the government's REDD+ policy and the Letter of Intent (LoI) signed with the Government of Norway, GoI make 3 moratorium related to new forest concession licenses for primary forest and peatland. As a result of the moratorium, The Government of Norway, since 2012, has committed to provide support worth USD 1 billion to Indonesia in achieving its goal of reducing emissions
 - The moratorium was originally envisioned as a 'stepping stone' towards reforming Indonesia's land tenure system and lowering the rate of deforestation. The estimation of Indonesia's emission rates without the moratorium between 2011 and 2015 would likely have been 1.0–2.7% higher than they were with the moratorium in place (Busch et al., 2015). This calculation is based on data from the years 2000–2010 that showed that 58.7% of emissions from deforestation came from outside of existing concessions and areas protected by the moratorium (Andersen, et.al, 2016)
 - Enhancement of renewable energy in transport sub-sector:
 - Minister of EMR has released the regulation on supply and utilization of biodiesel under the framework of Palm Oil Plantation Fund (Ministerial Regulation no no. 41/ 2018)
 - The President released a regulation on collection and utilization of palm oil plantation fund, among others for enhancing biofuel development in 2018 (Presidential Decree no. 66/ 2018 concerning the 2nd Revision to the the Presidential Decree no. 61/ 2015)
 - Minister of EMR has released the regulation on regulation of utilization and administration of biofuels (Ministerial Regulation No. 12/ 2015 on Biofuel Blending).

Policy Process and Governance

- a) The provision of technical assistance until implementation as a whole process funded by the international donors enhances implementation capacity.
- LoI provides managerial guidance to implement matters that makes Indonesia (as a recipient country) to develop achievable work plans and emission reduction targets with internationally technical standards within a certain time frame.
 - As for the USD 200 million (readiness funds), it is used to develop various policies (moratorium, OMI, REDD+ instrument) and institutional arrangement to implement REDD+ programs

- b) The institutional arrangement under ministry perform more effective implementation of projects but the higher level of institution lead to better coordination.
- The institutional arrangement of REDD+ developed from year to year. The REDD+ Management Agency (BP REDD+) is a ministry level institution. BP REDD+ is tasked with assisting the President in coordinating, synchronizing, planning, facilitating, managing, monitoring, monitoring and controlling REDD + in Indonesia. However, based on the results of the evaluation, the REDD+ Management Agency was deemed ineffective in implementation actions at the regional level and had difficulty coordinating with various ministries, so that in 2015, President Joko Widodo made a dissolution of the BP REDD+ and integrated these institution into the Ministry of Environment and Forestry then managed directly under a special General Directorate of Climate Change Control in the hope of strengthening coordination between ministries with making a command line and making it easier to give authority to the regions. To strengthen the mechanism of governance and funding of the REDD + program, in 2017 a new trust fund was formed by Ministry of Environment and Forestry namely the Environmental Fund Management Agency which will be formalized in September 2020

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