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The Biodiversity Finance Initiative – BIOFIN
INDONESIA

Biodiversity Finance Plan (BFP)

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FOREWORD

Biodiversity and viable ecosystems are the foundations of human existence and well-being. They protect us from natural disasters, regulate the climate, as well as provide food, fertile soil and medicine. Conserving biological diversity is key to achieving Indonesia's sustainable development and economic prosperity. Therefore, unprecedented mobilization of both public and private financing will be required to close the financing gap for the management and conservation of biodiversity.

Planning the management of biodiversity as an asset should be an important part of development, so that the Indonesian people can have a reference for the sustainable management and utilization of biodiversity for the prosperity of the nation. The government of Indonesia issued guidelines that were presented in the Biodiversity Action Plan for Indonesia (BAPI) in 1993. This action plan was renewed and became the Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2003-2020 and it has been implemented for more than 10 years.

The Biodiversity Financing Plan (BFP) was developed using findings found in the Biodiversity Policy and Institutional Review (PIR), Biodiversity Expenditure Review (BER), and Financing Need Assessment (FNA). BFP provides steps on implementing a mix of financial solutions, to improve the country's biodiversity financing and achieve national biodiversity targets. Several recommendations related to the implementation of biodiversity finance solutions are included, of which were formulated through case studies and consultations with multiple stakeholders.

We; the Center for Climate Change and Multilateral Financing Policy, Fiscal Policy Agency, Ministry of Finance, express our appreciation and gratitude for the active contributions of relevant ministries, government institutions, and privates in the preparation of this document, to develop a clear roadmap for the implementation of biodiversity financial solutions. In addition, we also thank UNDP Indonesia for providing support in the preparation and implementation of the meeting activities that have achieved.

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EXECUTIVE SUMMARY

The Biodiversity Finance Plan (BFP) for Indonesia has been prepared as a brief strategic paper outlining a resource mobilization strategy that enables Indonesia to achieve biodiversity management goals. This includes strengthening the role of stakeholders to increase biodiversity funding and close gaps through innovative, measurable and scalable mechanisms.

The government's commitment to biodiversity is reflected in the biodiversity strategy document that evolved since 1993 and most recently in February 2016, Indonesia launched the 2015-2020 Indonesian Biodiversity Strategy and Action Plan (IBSAP) which is used as a guideline for biodiversity management. The strategies and action plans in IBSAP are designed in a way that they are aligned with the 2015-2020 National Medium-Term Development Plan (RPJMN).

The vision of Indonesian biodiversity management is to achieve the preservation and development of Indonesian biodiversity that contributes to national competitiveness and the fair and sustainable use of resources to improve the welfare of current and future generations. To achieve this vision, a number of strategic missions that include: a) increasing the ownership and use of the biodiversity, b) treating biodiversity as a source of prosperity, and creation of sustainable welfare and the life for the people of Indonesia, and c) to employ fully responsible biodiversity management for the sustainability of all creatures in the world.

Biodiversity Finance Plans is compiled through a series of processes and stages involving among others: 1) assessment of biodiversity institutions, biodiversity expenditure review which identify and analyze a range of biodiversity spending by stakeholders, and analyse the budget required for biodiversity by calculating the gap of biodiversity needs and existing funding; 2) analyzing existing and potential financial solutions; 3) integrating the IBSAP action plan and the development of the biodiversity priority program; and 4) prioritizing financial solutions that can be implemented.

An analysis of financial solutions found 157 financial instruments that were both presents and potentially applied. Furthermore, these financial solutions are grouped according to their ability to obtain results and financial resources. The ability to get these results assesses the extent of financial solutions: 1) avoid future expenditure; 2) deliver better; 3) generate revenue, and 4) realign expenditure. While financial resources are assessed to include the government,

private sector, bilateral & multilateral donors, national financial institutions, NGOs, mass organizations, and civil society.

List of financial solutions are then judged by the impact (on biodiversity, scale of implementation) and priorities based on the likelihood of success in order to close the biodiversity finance gap, therefore it produces financial solutions priorities, namely: 1) Islamic social fund (zakat, infaq, sadaqa, waqf); 2) Corporate social responsibility (CSR); 3) green Sukuk; 4) Ecological fiscal transfer (EFT); 5) crowdfunding and 6) Bioprospecting. Bioprospecting is considered to have a low impact but the priority scale is considered high by stakeholders given its long-term implementation.

Strategizing Islamic Funds for Biodiversity

Zakat is a form of Islamic social finance that part of a broad category of Islamic finance and is a unique form of responsible social investment. The purpose of this solution is to contribute to the improvement of local livelihoods through sustainable business options which are simultaneously improving environmental quality as a key asset. In 2016, the amount of zakat allocation reached $ 201 million distributed to five sectors, namely the economy (18%), education (31%), religious (16%), humanitarian assistance (27%), and health (8%). This financial solution is expected to generate 1% of the total economic allocation, which is approximately $ 350,000. Implementation of this solution will expand the work through partnerships with the private sector so that the impact will be greater.

Corporate Social Responsibility (CSR)

This financial solution aims to match CSR funds with the development of selected ecotourism villages. As a pilot location, Bali was chosen as a center for tourism development that will be used as a reference to be applied in other regions in Indonesia. Its activities include the development of a rural tourism feasibility study, the delivery program through a design process and the development of a multi-sectoral integrated approach. The national bank is expected to involve in this initiative with an investment of approximately $ 178,000 per year.

Green Sukuk

In March 2018, the Indonesian government succeeded in issuing sovereign Sukuk to the global market worth US$ 3 billion. Sukuk with wakalah contracts consist of green Sukuk worth US$ 1.25 billion or equivalent to Rp 16.7 trillion, and general Sukuk (regular global Sukuk) worth US$ 1.75 billion. This is the first time in the world of green Sukuk issued by a government institution. This financial solution aims to provide green Sukuk to finance viable biodiversity projects. This solution will support the preparation needed to formulate and develop biodiversity projects. The results of financing the biodiversity project for Sukuk / green Sukuk can be estimated at around US$ 22 million refers to the list of climate change adaptation/mitigation projects co-benefit with biodiversity in 2016.

Ecological Fiscal Transfer (EFT)

Ecological fiscal transfer (EFT) is a financing instrument that carries out fiscal transfers for environmental and ecological initiatives through revenue-sharing arrangements between various levels of government (national, provincial and district). EFT can provide incentives or rewards for encouraging regions to protect and preserve the environment. EFT through regional incentive funds (DID) encourages environmental protection through incentive schemes, allows room for creativity by the regions, and is easier to administer than other fiscal transfer instruments such as DAU and DAK. EFT results through DID is very potential, the DID allocation is increasing over time. In early 2010, the DID allocation reached Rp 1,387.8 billion and at the end of 2016 it increased to more than 200% or Rp 5,000 billion.

Crowdfunding for Biodiversity

Innovative financial solutions like crowdfunding can help push biodiversity initiatives passing the constraints faced under the traditional financial system and make them independent of government budgets. Crowdfunding matches the financial demand and supply as it allows individuals to contribute directly to and invest in the projects they wish to support. Crowdfunds can also finance biodiversity-related activities. The financial solution is targeting a donation of US$ 50,000 from a fundraising campaign with an initial investment of approximately US$ 10,000 to organize and provide a platform for the activity. The financial solution is expected to contribute to the non-monetary results in the form of increased awareness of the biodiversity which in turn will increase the people's willingness to invest in the biodiversity sector.

Bioprospecting

This financial solution aims to improve the mechanism of bioprospecting through enhancing capacity building of bioprospecting implementing agency and ensure sustainable use of resources is implemented and benefit the people who highly depend on those resources. This includes the exchange of knowledge, shared intellectual property rights, preservation of traditional product knowledge, valuation and negotiation which are the capabilities needed to make the bioprospecting mechanism works. In essence, this solution will open a greater opportunity for financing the bioprospection and biodiversity programs.

BFP documents must be viewed as living documents, which are intended to be owned and used by the government and stakeholders to manage biodiversity as a whole. This is part of an initiative to promote and encourage biodiversity finance in Indonesia and can be updated as conditions, needs, and opportunities develop. For implementation, it will require concerted efforts from ministries/ institutions, civil society (NGOs), the private sector, and development partners. The most important is that commitment and funding by the public sector must be increasingly supplemented by contributions from the private sector.

1 INTRODUCTION

1 Introduction

1.1. Introduction

Indonesia is a tropical archipelago with 13,466 verified islands out of a total of 17,499. The country's terrestrial area spans 2.01 million km2 and its marine area is approximately 5.8 million km2. Indonesia is also flanked by the Pacific Ocean and the Indian Ocean, making it rich in biodiversity—often referred to as a mega-diversity country. According to its CBD Country Profile, Indonesia possesses 10% of the world's flowering species (estimated 25,000 flowering plants, 55% endemic) and ranks as one of the world's centers for agro biodiversity of plant cultivars and domesticated livestock. For fauna diversity, about 12% of the world's mammals (515 species) exist in Indonesia, ranking it second, after Brazil, at the global level. Moreover, bout 16% of the world's reptiles (781 species) and 35 species of primate place Indonesia fourth in the world. Furthermore, 17% of the total species of birds (1,592 species) and 270 species of amphibian place Indonesia as the fifth and sixth, respectively, in the world. It is estimated that 40 million Indonesians living in rural areas and rely on biodiversity for subsistence needs. Wetland ecosystems in small islands such as mangrove, coral reef, and sea grass plain are important for local communities, especially traditional fishermen.

Indonesia has 566 national parks covering 36 million ha, which consists of 490 terrestrial protected areas (22,5 million ha) and 76 marine protected areas (13,5 million ha). The terrestrial protected areas include 43 National Parks, 239 Nature Reserves, 70 Game Reserves, 13 Hunting Parks, 22 Grand Forest Parks, and 103 Nature Tourism Parks. Marine protected areas comprise 4.59 million ha which are managed by the local government. Forests in Indonesia cover 88.5 million ha and have rich biodiversity, particularly for lowland forests. As for the list of species threatened by extinction, this includes 140 species of birds, 63 species of mammals and 21 species of reptiles. Indonesia has 728 conserved species, which consists of 130 mammals, 390 birds, 48 reptiles, 8 fish, 20 butterflies, 12 mollusks, and 9 Crustacean.

Indonesia's biodiversity is an asset to the development of the national economy. From the abundant biological resources, a considerable number of benefits have been gained for various aspects of the community life, in connection with genetics, species and the ecosystem. Indonesian biodiversity has been utilized to support

livelihoods, especially for food, health and energy, and basic industrial materials that ultimately aim to meet human necessities.

Several important processes in the ecosystem influence productivity, since processes in the ecosystem also affect many other issues, such as the fertility of land, water quality, chemical composition of the atmosphere, and other environmental conditions that ultimately impact the welfare and lives of people. Degradation of biodiversity in the ecosystem reduces the dimension and stability of the processes in the ecosystem and disturbs the process of evolution (IBSAP 2015-2020). Degradation in the function of the ecosystem occurs if the variety and number of species in the ecosystem decreases. Hence, the management of biodiversity and ecosystems preservation is extremely important to safeguard the integrity of services provided by ecosystems, and to open new opportunities for the sustainable utilization of biodiversity.

The Biodiversity Financing Plan is the culmination of all work from the national BIOFIN process. It provides a framework for undertaking resource mobilization strategies embedded in a transformative process, allowing Indonesia to implement its IBSAP and achieve national biodiversity targets. Moreover, the BFP provides specific finance solutions that will allow stakeholders to leverage biodiversity financing through innovative, measurable, and scalable mechanisms.

Using findings from the preliminary studies and literature review, the Biodiversity Finance Plan has identified several finance solutions that are important for channeling financial support from various sources to achieve national and international biodiversity goals. While the provision of additional funding for biodiversity initiatives is ideal, the plan recognizes this may not always be feasible, and therefore, supplemental financial support can be leveraged to help address financing gaps. These solutions range from Islamic financing, Ecological Fiscal Transfers, and Blended Finance, all of which will contribute to effective and improved biodiversity conservation and management.

1.2. Indonesian Biodiversity Strategy and Action Plan (IBSAP)

Realizing the importance of biodiversity management and conservation, the Government of Indonesia previously implemented various national plans. The commitment of the government on biodiversity sustainability is reflected in the development of its Biodiversity Action Plan for Indonesia (BAPI) launched in 1993, followed by the Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2003-2020 launched in 2003. In February 2016, Indonesia launched Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2015-2020 as the updated version of the previous IBSAP. This updated plan is to be used as a guideline for biodiversity management. All strategies and action plans in IBSAP have been designed so that they are aligned with the National Medium-Term Development Plan (RPJMN) 2015-2020.

IBSAP 2015-2020 states the economic contribution of Indonesia's biodiversity and ecosystem in 2012 was IDR 2,053.8 trillion (Table 1). IBSAP adopted The UK National Ecosystem Assessment (UK NEA) methods and approaches in calculating the economic contribution value of biodiversity and ecosystem services in Indonesia, namely: a) provisioning services; b) regulating services; c) cultural services[1]. Provisioning services include provision of food biomass sources, drug resources, health and cosmetics, renewable energy sources and sources of timber and non-timber forest products. Regulatory services include organic waste treatment services, plant pollination services, and carbon sequestration services. Cultural services include the economic value of ecotourism in the form of cultural environmental services able to provide job opportunities and work for the community, and can be calculated from the costs expended by tourists and their willingness to visit the biodiversity ecosystem. The calculation above comes from the economic value offered by conservation areas in Indonesia in 2012. The basis of the calculation comes from the definition of biodiversity benefit values previously discussed.

Table 1.1 Economic Contribution of Indonesia's Biodiversity and Ecosystem in 2012

Type of Biodiversity Service	Value[2] (In Trillion IDR)
Provisioning Services	**1,680.76**
Food biomass	1,338.75
Material for medicines, health products and cosmetics	4.04
Wood biomass & non-wood forest products	1.08
Renewable energy	336.88
Regulating services	**372.47**
Waste processing	134.11
Pollination	183.72
Carbon capture/sequestration services	54.64
Cultural/tourism services	**0.60**
Total	2,053.83

Source: IBSAP 2015-2020

According to IBSAP, the vision of Indonesia's biodiversity management aims to achieve Indonesian biodiversity preservation and development that contributes to national competitiveness and fair and sustainable use of resources to improve the welfare of current and future generations. To achieve this vision, IBSAP has determined several strategic missions to be implemented, which include: a) to improve Indonesia's biodiversity ownership and utilization of Indonesian

1 In standard classification, the fourth type of ecosystem services is supporting services. Supporting services are services necessary for the production of all other ecosystem services. See Pagiola et al. (2004).

2 We have to be careful in looking at this figure because of the potential of double counting because of theoretically the type of values are not typically additive. For example, pollination contributes to provisioning services.

biodiversity, b) to treat biodiversity as a source of improving welfare, and creating sustainable welfare and sustainability of life for the Indonesian people, and c) to employ fully responsible biodiversity management for the sustainability of all creatures in the world. In order to achieve the national vision and mission, the new IBSAP 2015-2020 formalizes strategies into an Action Plan and National Targets, with the source of funding for all the activities deriving from public and private funds.

2 METHODOLOGY

2 Methodology

2.1. Methodology

The development of the Biodiversity Finance Plan included four phases: 1) a preliminary study covering the Biodiversity Policy and Institutional Review (PIR), Biodiversity Expenditure Review (BER), and Financial Needs Assessment (FNA); 2) analyzing existing and potential financial solutions; 3) prioritization of IBSAP actions and development of priority programs; and 4) prioritization of finance solutions for implementation.

The preliminary study was necessary to identify relevant BIOFIN stakeholders, as well as review key documents. The key stakeholders identified for the BFP consisted of the Fiscal Policy Agency (BKF), the Ministry of National Development and Planning (Bappenas), the Ministry of Environment and Forestry (KLHK), the Ministry of Marine and Fisheries (KKP), the Indonesian Institute of Sciences (LIPI), NGOs/Donor Institutions, and international and local communities. In reviewing the PIR, BER, and FNA, an information checklist was used to examine the findings and develop the BFP (see Annex 1). This key information checklist is based on the BIOFIN Workbook 2016.

Analyzing existing and potential finance solutions included developing a list of alternative financial instruments derived from the preliminary study, in addition to reviewing UNDP Indonesia's catalogues and other studies related to sustainable financing from 29 countries. This process produced a list consisting of 157 alternative financing mechanisms to be crafted into finance solutions for biodiversity.

After developing a list of existing and potential financing schemes, a series of national biodiversity actions were prioritized. Identifying the prioritized biodiversity strategies became important in order to develop financial solutions that were aligned with national strategies. This processes involved several activities, which include identifying prioritized biodiversity strategies and conducting rapid and detailed screening. The results of these activities were then used as inputs for assessing and prioritizing financial solutions. Formulating proposals for the selected finance solutions involved the recommendation of 10-15 prioritized finance solutions to be implemented in Indonesia, based on the previously

conducted assessments and analyses. Subsequently, two finance solutions were developed to provide a detailed description prior to implementation.

2.2. Summary Results of the BIOFIN Workbooks

2.2.1. Biodiversity Policy and Institutional Review

The PIR examined the policy and institutional context for biodiversity financing in Indonesia and identified key stakeholders. The study found that government expenditures play a central role in biodiversity management through active involvement in the business processes of private actors. Additionally, the role of non-government actors, largely undertaken by NGOs and sponsored by grants and loans, is limited to early initiatives to stimulate sustainable biodiversity management. After projects are initiated, the government becomes the responsible party for continuing the project. In general, institutional biodiversity expenditure is limited to two types: subsidy expenditures and central and local government expenditures. Central government expenditures are very important because these expenditures will leverage biodiversity management in the broader sense. This situation is inseparable from the shift of authority related to ecosystem maintenance at the local government level.

Government subsidies have a large impact on biodiversity management in Indonesia as they often suppress prices below market standards. This condition has an impact on inefficiencies in subsidized product markets. Currently, energy subsidies only focus on the type of diesel fuel used mostly in the transportation and distribution of goods. In addition, another type of subsidy granted by the government is non-energy subsidies. Of the several types of non-energy subsidies spent by the government, fertilizer subsidies impact fertilizer prices and have the potential to provide incentives for farmers to use more rather than develop organic farming. Direct subsidies to these farmers have the potential to drive agricultural land degradation. Nevertheless, there are several types of subsidies that support biodiversity management. Several types of subsidies on renewable energy sources are one of the forms of direct subsidies provided by the government to community. Unlike previous diesel fuel subsidies, this is part of the government's effort to ensure correct targeting to effectively contribute to positive biodiversity trends.

Central government expenditures are represented by ministry/agency expenditures that contribute to the four national action plans listed in the IBSAP. A crucial aspect of public expenditures is the use of performance-based budgeting (PBK), as an implementation of the "follow the money method" implemented by the government. In the public expenditure flow, there are at least five ministries/agencies that have major contributions to biodiversity management expenditure in Indonesia. The largest contributions to Indonesia's biodiversity expenditure is made by the Ministry of Environment and Forestry, with the smallest provided by the Indonesian Institute of Sciences—the other three ministries/agencies

(the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Ministry of Public Works and Public Housing) have relatively balanced contributions.

The main challenge of the effectiveness of biodiversity management policy lies in its implementation in formal and informal institutions. Additional challenges include the gap *(time lag)* between the development of a policy, its implementation, and the balance between biodiversity management and economic development. A mechanism that will generate revenues from biodiversity is needed to ensure sustainable biodiversity management. There are many ongoing private initiatives indicating that the future of biodiversity management and financing will be increasingly provided for by the non-government sector.

Under Indonesian law, the division of roles between the central government and regional government is conceptually based on the division of tasks with an ecosystem perspective. Provincial governments now manage most ecosystem tasks such as those relating to forestry, environment, energy and mineral resources, and marine affairs and fisheries. However, affairs in the agriculture and plantation sectors are still under the authority of the district government. This poses a challenge for provincial biodiversity management. It is important to anticipate the behavior of provincial governments that have the potential to take similar action as district/city governments.

On the issue of environmental protection, a number of civil society organizations regularly engage in conservation activities. Civil society organizations undertake two strategies namely policy advocacy and conservation/direct rehabilitation of land, flora, and fauna. The advocacy is conducted in several ways, among others, encouraging permit reviews/ cancellation as well as judicial review of several laws. However, the cost to rehabilitate environmental damage is higher than the benefits generated by land use change and exploitation of natural resources. Efforts to include financing for biodiversity management during land expansion and exploitation of natural resources, as well as early pollution prevention can help to address this issue.

Currently, the mechanism for private sector involvement is limited to a number of mechanisms that still places the government as the main actor. For example, in the revitalization of palm oil, the Public Service Agency for Palm Oil (BLU Dana Sawit) sees the government as project lead, civil society as the implementer, and the private sector as the source of funding. Meanwhile, private sector initiatives are still very limited, especially related to the mechanism of corporate social responsibility (CSR).

Despite many policies governing biodiversity management, Indonesia still faces threats to its biodiversity sustainability. In terms of policy, threats to biodiversity still require supporting laws and regulations. The policy analysis reveals that there are still laws and regulations that have a negative impact on biodiversity and additional regulations are needed to support biodiversity conservation in Indonesia. Laws needed are those that support the conservation of peatlands and primary forests,

regulations to support the protection of high conservation value areas, and regulations to support the application of access and sharing of benefits of biodiversity.

2.2.2. Biodiversity Expenditure Review

The Biodiversity Expenditure Review process involved analyzing public and non-public expenditures in Indonesia that benefit biodiversity. The activity grouped these expenditures according to the national action plan as set out in the IBSAP, collected and analyzed the entire state budget from 2006 to 2013, and made future spending projections tailored to the current budgeting pattern. According to the BER, most of the expenditure for biodiversity management (43 percent) is managed by the central government and is used to conduct four main activities: management of conservation areas, recovery for ecosystems outside conservation areas, pollution control, and integrated management of watersheds (*Daerah Aliran Sungai*/DAS).

Indonesia's biodiversity management activities are mostly funded by the state budget, which is focused primarily on Action Plan 3: Biodiversity maintenance and conservation; and Action Plan 2: Enhancement of biodiversity benefits. Alternatively, non-state budget funding sources are mostly from loans rather than grants. The average proportion of the budget for the two action plans was respectively 50.8% and 34% of the total budget of biodiversity. The smallest budget was under Action Plan 1; biodiversity research, data management and documentation, and had an average proportion of 4.7% in the same period.

Based on the identification and mapping of funding, and programs carried out by the various actors, it's been found that management of biodiversity in Indonesia has received increased attention from the government. This is highlighted by the annual budget allocation for biodiversity. In the period 2006-2016, the total biodiversity budget of the central government reached $3.5 billion USD fluctuating annually. Moreover, the Ministry of Environment & Forestry has the largest biodiversity budget of the five key ministries/agencies, and its budget increased during this period.

Biodiversity financing by international donors channeled through loans and grants represented a total budget allocation of $295.8 million USD. Funding in the form of loans reached 85% from bilateral, multilateral, and commercial schemes. The total loan for 10 years (2006-2016) reached $252.8 million USD. Relevant biodiversity grants derived from bilateral, multilateral, and corporate schemes amounted to 43 million USD. Funding for biodiversity management in Indonesia from NGOs during the period 2012-2017 was quite large, reaching $48.4 million USD. During the period 2010-2015, state-owned enterprises spent more for biodiversity programs than private companies. Biodiversity expenditure budgets of state-owned companies for the period amounted to $1.7 million USD or 64% of the total biodiversity expenditures of the 14 companies examined which reached $2.7 million USD. The three companies with the largest budget were Astra Agro Lestari, Bank Negara Indonesia, and Pertamina.

Management of biodiversity still faces challenges as it has not been integrated into the state budget. It is characterized by a downward trend in the ratio of biodiversity budget to the state budget in each period. In the period 2011-2016 after the implementation of PBB, the proportion declined from 1.41% to 0.87%.

Biodiversity management is supported by many parties, both national and local governments, and non-governmental organizations. The central government is a key stakeholder through the ministries and agencies that are closely related to biodiversity activities and has the largest portion of biodiversity budget. Meanwhile, non-government parties are divided into international donors (multilateral and bilateral), NGOs, and companies (state-owned and private). The synergy between the actors involved in biodiversity management is not clearly visible. Each actor tends to act in accordance with their respective program or activity. Biodiversity financing by international donors focused more on Action Plan 2, while companies tend to focus more on Action Plan 3. Meanwhile, biodiversity programs of NGOs are spread across Action Plans 1, 3, and 4.

2.2.3. Financial Needs Assessment

The Financial Needs Assessment was a process that included analyzing management activities based on strategies and action plans to achieve the targets of the IBSAP, with respect to the standard of activities and cost of managing the biodiversity. The FNA covers: 1) Financing needs, current finance solutions, and financing gaps for prioritized biodiversity strategies, actions and results; and 2) Potential finance solutions associated with each prioritized strategy, action, or organization that could be scaled, made more effective, or otherwise improved.

The FNA conducted its analysis for eight national targets: (a) National Target 5, Development of ex-situ conservation areas to protect local ecosystems; (b) National Target 6, Implementation of policy for sustainable management and harvesting; (c) National Target 10, Reduced level of anthropogenic pressure on coral reefs and other vulnerable ecosystems affected by climate change; (d) National Target 11, Realization of sustainable maintenance and improvement of conservation areas; (e) National Target 12, Realization of efforts to maintain the populations of endangered species as a national conservation priority; (f) National Target 14, Improved functionality of integrated ecosystems to ensure the improvement of essential services (water, health, livelihoods, tourism); (g) National Target 15, Realization of conservation and restoration of degraded ecosystems in the region and (h) National Target 21, Implementation of comprehensive and integrated data gathering and information mapping on biodiversity. Furthermore, the analysis examined the roles of the main IBSAP actors: The Ministry of Environment and Forestry, the Ministry of Marine and Fisheries and Indonesian Institute of Science.

Based on the analysis, the total budget needed to accomplish the eight national targets is approximately $11.58 billion (US$1= Rp 14,500). The calculation for financing needs is based on several assumptions, including

the identification of ideal conditions (scale of issues) of each national target, which activities support achievement of the targets and the costs required for each activity based on central government. The financing gap for the eight national targets is approximately $10.9 billion or 94% of total biodiversity finance need.

National Target 15 has the highest financial gap of approximately $8.05 billion concerning efforts to realize the conservation activities and restoration of degraded ecosystem in the region. This covers the size of the conservation area restoration around 250,000 ha and the restoration area outside conservation areas.

According to the calculation results, the existing budget of the three key ministries/institution relevant to the eight national targets analyzed is $676.1 million for period 2015-2020. These results indicate that the government's fiscal capacity in allocating a budget for managing biodiversity is still low when compared to the assessment of funding required for the management of biodiversity for the eight national targets selected from the IBSAP. While biodiversity has not yet government's priority, the fiscal capacity becomes narrower because of mandatory budgetary allocations for items such as education and health, which is suspected to be the variable that causes the budget for biodiversity to be relatively low. However, the results of the analysis of biodiversity funding requirement do not reflect the total IBSAP national target. In the analysis process, several activity components and costs are calculated based on the targets to be achieved from each national target. The targets still need to be adjusted with the IBSAP time period (until 2020).

Viewed from the managing actors, the budget issued by the Ministry of Marine and Fisheries is the largest among all amounting to $471.3 million, while Ministry of Environment and Forestry and Indonesian Institute of Science allocated $73.5 million and $131.3 million respectively. Analyzing budget of each ministry/institutions showed that the budget allocation from the biodiversity program/activity at the Ministry of Environment and Forestry only reaches 18.9 percent of the total needs. While Ministry of Marine and Fisheries and LIPI allocated 25.73 percent and 57.98 percent of total needs respectively.

3 FINANCE SOLUTIONS

3 Finance Solutions

3.1. Alternative Financial Instruments for Biodiversity

The list of existing and potential financial solutions consists of 157 financial instruments. The sources of the list include UNDP catalogues, IBSAP, Indonesia's PIR and BER, and existing studies from other countries. This process groups the alternatives into two categories: results and sources. BIOFIN has outlined a conceptual framework based on four kinds of finance results. In order to identify the mix of finance solutions that is the most effective for a country, it is important to understand the financial results that BIOFIN aims to achieve. The result category consists of future expenditure, improved delivery, revenue generation, and realignment expenditures (Table 2). The source category consists of government, private category, bilateral & multilateral donor, national financial institutions, NGO, CBO, and civil society.

Table 3.1 Categorization of Financial Result

Category: Results	Description
Generate revenues	Any existing or innovative mechanism or instrument that can generate and/ or leverage financial resources to allocate to biodiversity. Examples include the attraction of impact investment in conservation projects, the review or introduction of green taxes (e.g. fuel taxes, taxes on chemical pesticides, water fees etc.), the issuance of debt instruments such as green and blue bonds, etc.
Realign expenditures	Any measure that can reorient existing financial owes towards biodiversity. This result can be achieved by phasing out and reforming fossil fuel/energy subsidies and using these freed resources to invest in renewable energy or green infrastructure. Another example is lobbying for changes in budget allocations towards biodiversity and livelihood programs.
Avoid future expenditures	Any measure that can prevent or reduce future investment needs by eliminating or amending existing counter-productive policies and expenditures. This can be achieved by taxes that can generate a double dividend, or by fines for stopping ecosystem contamination by alien invasive species. The objective is to free up future resources for investment in other areas.
Deliver better	Any measure or instrument that can enhance cost-effectiveness and efficiency in budget execution, achieve synergies and/or favour a more equitable distribution of resources. Examples include the establishment of biodiversity business challenge funds, the merger of national conservation funds, the establishment of central procurement units or incentives to increase delivery of resources.

Source: BIOFIN Workbook

Figure 3.1. Mapping Alternatives of Financial Instruments for Biodiversity

Note: There are finance solutions that include one or some sources

From the 157 existing and potential financial solutions, 74 existing and 83 potentials are to be implemented in Indonesia. From each of these financial solutions, there are financial solutions that involve multiple parties or types of organizations, such as collaboration between government and private or private, NGO and community, and so on. The complete list is in Annex 2. Furthermore, a single solution can achieve multiple objectives. For example, the introduction of a green tax can help reduce future costs by in influencing certain behaviors (e.g. reducing the level of use of chemical fertilizers) while mobilizing additional resources. The involvement of the private sector in conservation can help to deliver resources more effectively, while attracting new capital investments.

Table 2 is the mapping of finance solutions by result and sources categories. The existing finance solutions in Indonesia are bolded. From the 157 existing finance solutions, most are from the public sector (central and local government) and are used to generate revenues. Similarly, finance solutions from donors are not varied. In addition, finance solutions realigned with expenditures also needs to be explored and combined with other financial solutions. As well, financial solutions from the public sector need to be optimized and well managed in order to be more economical, efficient, and effective.

3.2. Action Plans and Prioritized Activities

As mandated by IBSAP 2015-2020, all financial solutions for biodiversity must be aligned with the Indonesian National Biodiversity Action Plan. This step is important for mainstreaming all policies, management activities, and stakeholder coordination. Therefore, the proposed financial solutions are referred to as prioritized Action Plans in the IBSAP. Through in-depth interviews, questionnaires,

and discussions with experts, six prioritized activities were identified (Table 4). From the biodiversity utilization action plan, the prioritized activities include, among others, development of eco-tourism attractions, water management and marine conservation, restoration and enhancing marine conservation areas. These activities aim to achieve National Targets 14 and 15.

Table 3.2 Prioritized Action Plan Activities

Action Plan	Prioritized Activities
Action Plan 1 Research, data Management, and Documentation of Biodiversity	Improvement of biodiversity data and information compilation (database)
Action Plan 2 Biodiversity Utilization	Development of eco-tourism attractions
	Water management and conservation
	Restoration and enhancing the marine conservation area
Action Plan 3 Maintenance and Preservation Biodiversity	Enhancement in protection of endangered, vulnerable, and threatened species
	Restoration of land conservation area

The process of prioritizing action plans and activities was followed by the identification of feasible financial solutions to be applied to each outlined activity. The rapid and detailed screening form was the instrument used to gather information needed for the analysis.

Table 3.3 Rapid Screening result: Financial Solution Alternatives for Marine and Terrestrial Area

Action Plan	Activity	Marine			Terrestrial		
		Alternative 1	Alternative 2	Alternative 3	Alternative 1	Alternative 2	Alternative 3
Research, data Management, and Biodiversity Documentation	Improvement the compilation and information of biodiversity (database)	State Budget	Government Allocation Fund	Trust Fund	Government Allocation Fund	Aid Coordination (realigning program)	Charges from data access
Biodiversity Utilization	Development of ecotourism attraction	CSR	Payment for Ecosystem Services	Equity Financing for Sustainable Tourism Project	PPPP (Public Private People Partnership)	Tourism Fees (Photos Safari, User Fees, Rare Species Fee, Price Discrimination)	Voluntary Payment (Crowd funding),
	Water management and conservation	Tariffs, Fees and Taxes in Water Sector	Wastewater Fees	Water Abstraction Fees	-	-	-
	Restoration and enhancing the marine conservation area	State Budget	Grant	CSR	-	-	-
Maintenance and Preservation Biodiversity	Enhancement in protection of endangered, vulnerable, and threatened species	State Budget	Debt for Nature Swap	Fisheries Licensing Fees	Grant	Crowd-funding	Rare Species Fee
	Restoration the ecosystem of land conservation	-	-	-	CSR Spending	Biodiversity offset	-

Table 3 shows results from the rapid screening process. The rapid screening aimed to assess which finance solutions are most promising using three criteria from the BIOFIN Workbook: (a) Potential for achieving biodiversity impact, the amount and significance of biodiversity that can be impacted and judged in different ways, and/or people's values assessed through economic valuation techniques; (b) The potential scale and sustainability of financial impact, the resources that can be leveraged in the context of the biodiversity finance gap being addressed; and (c) The likelihood of success, determined by a general assessment of the technical, social, and political feasibility of the proposed solutions (Annex 3). Table 4 shows the proposed financial solutions formulated from the assessment results. These results were determined through a combination of rapid and detailed screening, inputs from preliminary studies, and discussions with experts and other relevant stakeholders. The results is arranged based on priority and impact and the detail elaborated further in the next section.

Table 3.4 Prioritized Financial Solutions for Prioritized Activities

		Priority	
		High	Low
Impact	High	Zakat, Infaq, Shadaqah, Waqf Corporate Social Responsibility (CSR) Green Sukuk Crowd funding Ecological Fiscal Transfer	Tourism fees & Commercial Advertisement Wastewater fees and penalties Environmental Trust Fund Rare Species Fee
	Low	Bioprospecting	Debt for Nature Swap Biodiversity Offset Tariff/fee/tax/for water

3.3. Prioritized Finance Solutions

This section is arranged to detail elaborate prioritised finance solution based on previous section (see Table 6). Based on the findings, those finance solution categorized as high priority namely Islamic fund (zakat, infaq, shadaqa, waqf), corporate social responsibility (CSR), green sukuk, ecological fiscal transfer (EFT), crowdfunding and bioprospecting. The latter is considered as priority by stakeholders although the impact may be low due to longer term implementation. The low priority finance solutions are still considered as important however it was decided by stakeholders these are not elaborated in more detail

3.3.1. Matching Corporate Social Responsibility (CSR) for Eco-Tourism Village

a). Context

The required investment for funding the Sustainable Development Goals (SDGs) has been estimated to be US$4.5 trillion per year. The Official Development Assistance is not sufficient to implement this agenda. The financing gap required for the SDGs is only 1.1 percent of the estimated value of global capital markets, which calls for exploring new global partnerships and innovative source of finance to leverage private investment alongside official development assistance.

Biodiversity Expenditure Review (BER) revealed opportunity from private contribution for financing biodiversity. Group of companies who listed in The Sustainable and Responsible Investment (SRI) - KEHATI Index in the Indonesia Stock Exchange (BEI) contributed total expenditures of Rp 39.65 billion from 2010 to 2015. The largest spending occurred in 2013 reached Rp 13.31 billion from 11 companies. Realizing the opportunity, private sector can be engaged to channel their fund in the form of corporate sustainability to finance biodiversity relevant projects/activities.

For Indonesia, tourism business contributes directly to GDP amounting US$ 19.4 billion to the 1.9% of total GDP in 2017, with the number of international tourists reaching as high as 14 million tourists in 2017. The travel and tourism industry GDP amounted to US $ 28.2 million and there were 3.5 million jobs in the tourism sector. With increasing numbers of foreign visitor arrivals (both tourists and foreign businessmen) in combination with +5 percent GDP growth and investment growth, there is growing concern that existing tourism model has further consequences on natural resources: air; water including threat to biodiversity. A sustainable tourism model is needed to ensure greater share benefit to community while preserving natural resources. In addition, development of ecotourism is one of prioritized activities under biodiversity utilization action plan set in the IBSAP.

While law no 6/2014 regulated village fund allocation to improve village development through basic and social infrastructure investment, local economic activities and environment preservation and natural disaster preparedness. There is opportunity for ecotourism activities under this scheme and has potential to empower village business institution i.e., village-own company (BUMDES).

Bali is the most popular island tourism destination and known for the home to an ancient culture, warm hospitality, exotic temples and natural places. However, its tourism development is uneven which lead to economic disparity across region. The Indonesian Hotel and Restaurant Association (PHR) Bali recorded a total of 120,000 hotel rooms across Bali at the end of 2015, most of which were located in southern Bali. The finance solution intends to match CSR fund with tourism development particularly eco-tourism village in the northern part of Bali as pilot case and potential for replication in other part of Indonesia.

Sustainable development has been a growing interest of private sector especially banks and other financial institutions. Key regulation on sustainable finance implementation for Financial Institutions, Listed Companies and Public Companies (POJK 51/2017) guided financial institution to implement sustainable finance in various area including sustainable tourism. Culturally, green tourism in Bali has been supported by *Tri Hita Karana* as an operational philosophy of Balinese Hindu, which among others guides the harmonious relationship between human beings and the environment.

b). Objectives

The objective of the initiative is to match CSR funds with development of ecotourism village in Bali. Bali was selected as center for tourism development and once it succeeds the similar model can be replicated in other part of Indonesia. It comprises of development of feasibility study that will bring to the programme design process from previous experience and developing integrated multi-sectoral approach to the problem and presenting systematically with concise recommendation. The private sectors expected to involve in this initiative are national banks. The initiative covers following components:

1. Management of sustainable ecotourism destination,
2. Economic benefit to local community,
3. Cultural preservation by community and visitors,
4. Environmental preservation.

c). Next Steps

Steps	Lead Agency	Key Stakeholders	Duration
Feasibility study to develop business model for ecotourism village and/or community-based tourism matching with village fund	OJK, Local University, village government	Bappenas, Ministry of Tourism, Ministry of Finance, National Banks	6
Consultation and validation of the concept and business model of ecotourism village	OJK, Local University	Bappenas, Ministry of Tourism, Ministry of Finance, National Banks, village government	3
Based on consultation results, to engage financial sectors for potential financing through CSR	OJK	National banks, donor, private investors	3
Implement pilot activities of sustainable village business model and financing measures in selected villages	National bank, University, village government	Local community, village government, village own company	12
Assess capacity building need for local tourism operators, community and local government	OJK, University	local community, village government, local government	3

Steps	Lead Agency	Key Stakeholders	Duration
Monitor the pilot implementation and assessment for scaling up potential	OJK	Bappenas, Ministry of Tourism, Ministry of Finance, National Banks	1
Total			28

Expected duration of the implementation step is up to 28 months

The following risks may affect the success of the solution and should continue to inform its further planning and implementation:

- *Challenges associated with managing multiple financiers and matching with the need of the potential eco villages*
- *Capacity constraints in terms of environment management and biodiversity capacity*

d). Expected Financial Results

The expected financial gains for matching CSR fund for ecotourism village as a result of this solution is estimated based on previous investment made by national bank for similar projects and existing available resources. An example of Munduk Village in 2017 has received financial support through Corporate Social Responsibility implementation as much as IDR300 million or US$21,428 (1$=Rp14,000) from PT. Bank BRI, Tbk. The total village fund for Bali province is amounted Rp 531 billion thus average allocation reaches Rp 835 million per village in 2018. While the village fund expected to contribute a quarter of total, hence the total financial including CSR commitment are expected reaching Rp 500 million. Therefore for 5 ecotourism villages projects, the expected financial results will gain at minimum around $178,000 annually.

3.3.2. Crowdfunding for Biodiversity

a). Context

National governments have demonstrated their clear commitment to fulfilling their biodiversity conservation mandates in ways that promote national socio-economic development goals. Given the many pressing development priorities that governments face, this requires finding innovative sources of funding for financing the biodiversity & ecosystem project that can be sustained over the long term.

Additionally, asymmetric information, difficulties in measuring assets, and requirements to putting forward collateral, pose critical barriers and can make the cost of raising external funds especially high for this type of initiatives. These barriers are especially present in debt finance with the IFC estimating that 75 percent of loans worldwide require borrowers to put forward collateral. It can also be difficult for equity investors, such as venture capitalists, to fully monetize the potential success of the business proposition.

Innovative financial solutions, such as crowdfunding, can help boost biodiversity initiatives bypass the constraints of traditional financial systems and make them independent of the government budget. Crowdfunding matches demand and supply of finance as it allows individuals to make contributions and investments directly to projects, they are passionate about.

Digital crowdfunding has been one of the alternative option for financing sustainability-oriented ventures and clean production technologies (e.g. Park, 2012; Harte, 2013; Thorpe, 2014) as shown by the rise of crowdfunding innovation platform such as Kickstarter.com and Indiegogo. Equally, it has capability to mobilize funding for conservation and biodiversity related projects, which is the central obstacle to sustainable development (Ortas et al., 2013).

However, crowdfunding is so much more than about getting the required financing for project. As published by the UNDP Alternative Finance Lab, crowdfunding as a platform also provide benefits beyond the financing, such as:

- Crowdfunding as a community building instrument, especially when the participant evolved into the long term the project partners
- Crowdfunding as a marketing instrument, which might help improve public awareness of the Biodiversity issues
- Crowdfunding as a tool for testing innovation in practice, as such that a successful result of a crowdfunding campaign might help provide confidence for traditional financier to participate in the future initiative

The national government saw this innovation in financial technology as an opportunity to leverage citizen participation toward biodiversity management. Several biodiversity projects under the Ministry of Environment and Forestry and the Ministry of Marine Affairs and Fisheries are not well known to the general public and might use additional funding sources which can be derived from crowdfunding mechanism.

The case for this finance solution

An influential musician, Muhammad Tulus Rusydi (nickname: Tulus), undertook second public campaign about the preservation of Sumatran Elephants through crowdfunding. Unlike the previous campaign, Tulus did fundraising through the sale of elephant-shaped merchandise. The crowdfunding was carried out in collaboration with several parties, including kitabisa.com (digital fundraising portal), Big Chance Indonesia (business consulting company), NUSAE (design studio from Bandung), and Synchro (organizer of campaign events).

The purpose of the fundraising was to purchase 20 GPS collar satellites (necklace detection sites) that will be donated to WWF-Indonesia and installed in 20 wild elephant groups in Sumatra. The installation of GPS collar satellite would assist in conducting research on Sumatran Elephants so as to reduce the threat that could endanger the protected animal. Raising donations through kitabisa.com was chosen because it is considered a platform that is easily accessible to the public. For the online campaign, individual can immediately click and can donate as much as IDR 20,000.

b). Objectives

The objective of the solution is to explore the feasibility of using crowdfunding as a way of financing the biodiversity related activities. Three main components of the crowdfunding mechanism will be assessed after the pilot for its long-term feasibility which are;

1. the crowdfunders experience, which will focus on the expected contribution to the project and the underlying motivation/ obstacles
2. the impact of the fund to the biodiversity project and the project reporting method
3. the crowdfunding platform performance

Additionally, secondary components will also be assessed during the pilot implementation, such as, public awareness before and after the project, traditional financier's response to the project results, as well as the government supports.

c). Next Steps

When developing the crowdfunding project, it is important to identify its participants:

1. Crowdfunder: someone who contributes financially to the projects of others;
2. Project Owner: someone who creates a project/has an idea and wants financial support; and
3. the Crowdfunding Platform: online site where information is available and promoted for all the parties

Steps	Lead Agency	Stakeholders	Duration
Review the local crowdfunding platforms of their performance, including reviewing the past relevant crowdfunding activities, monthly active users and engagements, active partnership and media followers	Biodiveristy project owner	MoEF, MoMAF, MoF, BEKRAF	1
Review the potential biodiversity related initiatives that are open for financing	Biodiveristy project owner	MoEF, MoMAF, MoF, BEKRAF	1
Develop the crowdfunding mechanism, including the target financial goals, target Crowdfunder segments, fund implementation and reporting mechanism, pilot campaign and promotion materials	Biodiveristy project owner	MoEF, MoMAF, MoF, BEKRAF, crowdfunding platform	2
Inform and consult with authorities especially the Financial Services Authority (OJK) of ensuring the propose crowdfunding mechanism comply with the local regulation	Biodiveristy project owner	MoEF, MoMAF, OJK, MoF, BEKRAF	1
Appoint and select the crowdfunding platform	Biodiveristy project owner	Crowdfund Platform	1

Steps	Lead Agency	Stakeholders	Duration
Pilot crowdfunding event implementation, impact assessment and project reporting	Crowdfund platform	MoEF, MoMAF, MoF, BEKRAF, crowdfunders	6
Total			12

d). Expected Financial Results

KitaBisa is one of the biggest crowdfunding platform in Indonesia, which focus their campaign toward social projects, but also allows other projects in the technology, creativity, and business categories. The crowdfunding site verifies each project before it is published. One of the site largest success story is the *Momentum Pergerakan SaveMaster* campaign, which collected a total of IDR 137 million (US$10,600) to help save a school building which was supposed to be torn down.

The financial solution aims to gain up to US$ 50.000 donations coming from the crowdfunding campaign with initial investment of US$ 10.000 for organizing, marketing, and providing the platform for the event. The financial solution expected to provide both monetary and non-monetary value. If successful, the solution will help increase the biodiversity issue awareness which in turn will increase people willingness on investing for biodiversity.

3.3.3. Strategizing Islamic Fund for Biodiversity

a). Context

Zakat (almsgiving) is one form of Islamic social finance of which part of broad Islamic finance category as unique form of socially responsible investment. Along with *zakat*, *waqf* (endowment) and *sadaqa* (charity) are intended for social benefit. In Indonesia, zakat has great potency, according to research it is reaching up to $15 billion (1$=14,500), however the collection as low as $413.8 million annually. It is allocated to following sectors: economy, education, *dakwah* (proselytizing), humanitarian support and health.

Sustainable development goals (SDGs) has been aligned with underlying philosophy of Islamic finance. While zakat is intended for poverty alleviation, the instrument can contribute for environment and biodiversity as well. Law No 23/2011 mandating BAZNAS (national zakat agency) as the one national institution responsible for collecting, distributing and coordinating the management for zakat through 34 Baznas office in provinces, districts as well as private zakat institutions. Since then, Baznas has promoted a programmatic approach that goes beyond predominant model of one-time, individual consumptive and short term needs.

Selayar Islands coastal community are highly dependent on fishing particularly coral fish. In the nineties, Selayar and Takabonerate were a heaven for fishing industry of coral fishes especially grouper, with income

as high as IDR 27 billion per month. The high income has led to extractive and destructive activities by using bomb and cyanide. The fishermen also exposed to risk by improper diving equipment i.e., diving compressor. Coral reef coverage as well as fish population has significantly decreasing after 1990 and more than 10 person reported die because of destructive fishing practice.

The case for this finance solution

UN Development Programme together with the Directorate General of New and Renewable Energy and Energy Conservation (DJEBTKE), Ministry of Energy and Mineral Resources (ESDM) and Provincial Government of Jambi with the support from Badan Amil Zakat Nasional (BAZNAS) and Bank Jambi, support the construction of Micro Hydro Power Plant (PLTMH) to provide electricity for a total of 803 households from four villages in Jambi province, benefiting at least 4.448 people directly and many more businesses and services indirectly.

This is the first support by BAZNAS to use zakat funds for SDGs in Indonesia and even in the world. The preparation prior to the construction was rigorous involving selection of the locations and engagement of all stakeholders to ensure the beneficiaries are the most poor and needy (*mustahik*).

The new PLTMH has 60KW capacity and it is able to provide electricity for 283 households, two schools, mosque and 4 mushollas and other village's infrastructure. Meanwhile, the revitalised PLTMHs are scheduled to fully operate in July 2018, each with 40KW capacity, to provide electricity for 523 households, 5 schools, 3 mosques, 15 mushollas, 1 Islamic school and other villages' infrastructure. In total, 803 households will benefit from this programme. To maintain the sustainability of these PLTMHs, operators in every village will be trained to manage the power plants.

The finance solution is primarily aligned with blue economy which aims to create and strengthen sustainable business practise for small islands that promoting the economic benefit for marginal communities and sustainably-managed marine environment. This will strengthen resilience and adaptive capacity to climate-related hazards such as changing weather pattern and sea level rise. It is important for Selayar Regency which is also archipelagic regency to understand their vulnerability due to climate change impact. Those who are the poorest and marginalized are the most affected.

The solution is also aligning with the intention to leverage Zakat to widen and enhance its impact beyond individual that is to contribute to sustainable development particularly biodiversity conservation and improvement and income-generating opportunities in disadvantaged communities.

b). Objectives

The overarching objective of this solution is to contribute towards local livelihood improvement through viable sustainable business option while at the same time increasing the quality of the marine environment as main asset of Selayar communities. This will include several components as follow:

1. Commodity market development through increasing product's value and technical capacity
2. Development of community-based tourism business
3. Replicating and scaling up

c). Next Steps

Action plan is divided into several steps including activities on each stage and time frame for implementation.

Steps	Leading agency	Stakeholders	Duration
Identify areas for intervention, biodiversity threats, key beneficiaries, and proposed intervention	BAZNAS	Local government, Ministry of Marine and Fisheries, Creative Economy Agency, local community, private sector	2
Undertake socio economic, environment and gender assessment of selected locations	BAZNAS, Creative Economy Agency	Local government, Local community	3
Develop and design community empowerment model for financing biodiversity using zakat fund.	BAZNAS, Creative Economy Agency	Local government, Ministry of Marine and Fisheries, local community, private sector	6
Partnership and engagement with private sector for leveraging the initiatives	BAZNAS, Creative Economy Agency	Private sector, other technical ministries	6
Enhance know-how of households/ communities for processing commodities such as coconut, fish, herbs, spices, green vegetables, (both technical as well as business management, marketing, finance, etc.).	BAZNAS, Creative Economy Agency	Local government, local community, private sector, group of buyer	1
Implement community-based tourism business model, including improve nature-based assets i.e., coral reef and natural beauty	Ministry of Marine and Fisheries, BAZNAS, Creative Economy Agency	Local government, local community, private sector	12
Total			30

d). Expected Finance Results

In 2016, total zakat allocation reached $201 million which distributed to five sectors namely economy (18%), education (31%), dakwah (16%), humanitarian support (27%) and health (8%). The finance solution will be expected to result 1% of total economy allocation around $350,000. The implementation of solution will expand the work through partnership with private sector so that the impact can be bigger.

3.3.4. Sukuk and Green Sukuk for Biodiversity

a). Context

In March 2018, the government of the Indonesia succeeded in issuing state sukuk in the global market worth a total of US $ 3 billion. The sukuk

with a contract of wakalah consists of green sukuk worth US $ 1.25 billion or equivalent to Rp. 16.7 trillion, and general sukuk (global regular sukuk) worth US $ 1.75 billion dollars. Green sukuk issuance carried out by the sovereign government is the first time in the world.

The proceeds of Green Sukuk will be used exclusively to finance or refinance expenses from eligible green projects. This includes government activities that support the transition to a low-emission economy and climate-resilient economic growth, which include climate change mitigation and adaptation activities, and biodiversity conservation.

The selection and evaluation of government project that meet the requirements of green sukuk is done by utilizing the results of the budget tagging for climate change carried out by the Fiscal Policy Agency. The process and reports of the budget tagging for climate change are used as a basis for identifying green projects that will be used as the underlying assets of green sukuk.

According to the Regulation of the Minister of Finance (PMK) Number 136 / PMK.02 / 2014, there are six ministries that are obliged to mark climate change budgets that refer to the mandate of greenhouse gasses action plan (RAN-GRK) (Table 1).

Table 3.5 Climate change mitigation and biodiversity budget allocation, 2016 (IDR billion)

No.	Ministry/Agency	2016	
		Climate Change Mitigation[a]	Biodiversity[b]
1	Ministry of Industry	53.8	N/A
2	Ministry of Environment and Forestry	1,619.7	3,611
3	Ministry of Energy and Mineral Resources	2,173.7	N/A
4	Ministry of Agriculture	4,265.5	589
5	Ministry of Transportation	21,004.4	N/A
6	Ministry of Public Work and Housing	43,234.7	1,178.3
7	Ministry of Marine Affairs and Fisheries	N/A	988.3
8	Indonesian Institute of Sciences	N/A	341.6
	Total	72,351.8	6,708.2

Source: a) Climate budget tagging report, Ministry of Finance;
b) Biodiversity expenditure review (BER) report

Sustainable management of natural resources sector is one of the eligible green sectors namely Renewable Energy, Energy Efficiency, Sustainable Transport, Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction, Waste to Energy and Waste Management, Green Tourism, Green Buildings and Sustainable Agriculture. Sustainable management of natural resources sector is strongly representing biodiversity which comprise of activities on the following:

- Sustainable management of natural resources which substantially avoids or reduces carbon loss / increases carbon sequestration (through planting of new forest areas and/or replanting of degraded areas, the use of drought / flood / temperature resistant species).
- Habitat and biodiversity conservation (through sustainable management of land use change, sustainable management of agriculture/ fisheries/forestry, protection of coastal and marine environments, pest management

For 2018 issuance, the biodiversity relevant projects have not yet been financed due to several reasons: first, identified biodiversity relevant projects are mainly for payment of goods and services and little for capital expenditure (investment); second, the current budget tagging system covers mainly for climate and not yet for biodiversity. Therefore, the identified project represented climate projects with biodiversity co-benefit. Third, sukuk requires underlying assets as indicated by physical assets which can provide service more than one calendar year.

While the green sukuk framework has included biodiversity as eligible project, there are potential projects relevant to biodiversity that can be developed and financed through this mechanism.

In 2018, sukuk has been used to finance biodiversity related projects under Ministry of Environment and Forestry and Indonesia Institute of Science (LIPI) around Rp 51.4 billion and Rp 120 billion respectively. MOEF focuses on natural resource conservation project, while LIPI constructs bio safety and meteorology laboratory. For 2020, Ministry of Finance plans to shift to pure biodiversity projects.

b). Objectives

This finance solution proposal intends to unlock green sukuk for biodiversity project financing and finance more eligible biodiversity project. The solution will support preparatory work needed for a biodiversity project to be developed and financed. This is innovative as the solution will create an overarching mechanism that effectively connects finance solutions with projects, in addition to tailoring them to ministry/agency.

c). Next Steps

Steps	Lead Agency	Stakeholders	Duration
Conduct scoping meetings with the following line Ministries: Ministry of Environment and Forestry, Ministry of Marine and Fisheries, LIPI, Ministry of Agriculture	BAPPENAS	Technical ministry related to biodiversity	3 month
Conduct four parties meeting (Dir. Shariah MoF, Dir. Environment Bappenas, Dir. Development Finance Bappenas and MOEF) to agree on priorities of project to be financed by sukuk	BAPPENAS, Line Ministry	Technical ministry, Ministry of Finance	3 month

Steps	Lead Agency	Stakeholders	Duration
Develop concept proposals (background, scope, economic-social-environment feasibility, risk, finance need, etc.)	Line ministry	BAPENAS, Ministry of Finance	6 month
Technical assistance and series of consultation to conceptualize projects priorities, assess toward readiness criteria and development of feasibility studies	BAPPENAS	Technical line ministries	3 month
Validation and finalization of project list proposal and submit to Directorate of Development Finance Bappenas for approval	BAPPENAS	Line ministries	1 month
Development of impact framework for measuring biodiversity projects, including guidelines based on experience gained from designing biodiversity projects	BAPPENAS	Line ministries	6 month
Total			22

d). Expected Financial Results

The financial result of biodiversity project financing for sukuk/green sukuk is not yet to be estimated due to development, identification and project assessment to be conducted with key stakeholders. To illustrate, the identification of potential biodiversity project from a list compiled from 2016 climate adaptation/climate mitigation projects with biodiversity co-benefits is estimated at around $22 million in 2016. If used as benchmark, at least a similar number or higher is expected to result from this finance solution.

3.3.5. ECOLOGICAL FISCAL TRANSFERS

a). Context

Ecological fiscal transfer (EFT) is a financial instrument involving fiscal transfers for environmental and ecological initiatives built on arrangements of revenue sharing between different levels of governments. EFT will create an incentive or reward program for areas with extensive conservation activities. This incentive mechanism can be used to encourage regions to protect and maintain the environment.

In supporting the green economy, the Government of Indonesia implemented range of finance mechanism including fiscal transfer. According to Law No. 32, 2004 and Law No. 33, 2004, financing mechanisms between central governments and local governments is regulated through the intergovernmental transfer system. The mechanisms aim to reduce vertical imbalances between central and local governments as well as horizontal imbalances among local governments. The transfer mechanisms are divided into four types: the General Purpose Grant (DAU), Specific Purpose Grant (DAK), the Local Incentive Grant (DID), and a special mechanism for villages called the Village Funds (DD).

The ecological fiscal transfer seems to be one of the best approaches for compensating biodiversity restoration activities. It is considered more efficient and less costly than establishing a complex regulatory framework. At present, fiscal instruments that explicitly incorporate an ecological dimension are only accommodated under Special Allocation Fund (DAK) and Environment and Forestry Revenue-Sharing Fund (DBH SDA). DAK is directed towards measures concerning water quality and pollution control while DBH SDA is allocated to the reforestation fund.

However, the evaluation of these instruments shows that the existing DAK for the environment is mainly directed toward physical provisions to address "end-of-the-pipe" functions and are therefore less conservation-oriented. Meanwhile, DBH SDA has not been explored in terms of their potential for explicit ecological considerations, beyond the instruments of the reforestation fund and in the forestry-related sector. In addition, both instruments do not specifically refer to biodiversity concerns, resulting in unclear efforts of local governments to biodiversity. Whereas, other fiscal transfers do not adopt any ecological issues, let alone the biodiversity aspect. Despite such condition, the Indonesian government still has great potential to implement EFT.

EFT on DID

In general, the transfer system and the context of fiscal decentralization in Indonesia will lead to competitive decentralization (Riatu, 2013). Each level of government will seek to claim the form of achievement and performance of public services. Although the environment is not directly listed in the 10 categories accommodated in DID, the effort on including ecological issues remains possible.

In Indonesia case, the DID transfer could answer critical element of sustain and long terms funding for biodiversity conservation. *First*, this transfer will compensate decentralized jurisdiction for the cost of provision ecological good and services which give spillover benefit beyond their boundaries. Given the nature of DID, it is public spending to reward rather than assignment to local government which achieve such biodiversity-related indicators, so that it will give an attractive incentive for local level.

Second, the DID scheme gives opportunity to central government to monitor and evaluate the biodiversity relevant-targets regularly. DID differs from DAU in the sense that it uses criteria and indicators as a basis of transferring the fund from central to local government. *Third*, DID opens a room for local government's creativity in using the fund given it concerns. It also gives an advantage for local government to use the money in line with local biodiversity development priorities. *Finally*, financing biodiversity via DID is relatively easier to administer than any other fiscal transfer mechanisms such as DAU and DAK.

b). Objective

The objective of the solution is is to increase capacity of government in undertaking decentralization fiscal transfer using ecological indicator. This will increase transfer to regional government based on particular

biodiversity criteria. It involved following components:

1. To review and identify key data and indicators relevant to ecology and biodiversity for DID category sourced from line ministries and/or national statistical office
2. Coordinate and communicate with Ministry of Finance to align proposed DID category
3. Observe and conduct in-depth interview with local stakeholders, including local government officials, research institution, and university
4. Select key data and/or indicator to be tested with DID
5. Develop technical report which includes recommendation of potential use of data related to ecological and biodiversity to be upscaled for DID implementation
6. Report dissemination and policy advocacy

c). Next Steps

The proposal for central to local government EFT needs to be followed up with action. This can be divided into several steps including activities on each stage and time frame for implementation.

Steps	Lead Agency	Stakeholders	Duration
Review fiscal transfer schemes with their elements, including the magnitude, the transfer mechanism, the utilization, and the behavior of local government towards the transfer.	MoF	MoEF, MMaF, MoIA, Bappenas, Regional government	3
Propose for alternative schemes with considerations on their impact on finance, the legal framework, the institutional capacity, and biodiversity.	MoF	MoEF, MMaF, MoIA, Bappenas	6
Develop the feasibility criteria and implement them for the recommended EFT scheme (pilot).	MoF	MoEF, MMaF, MoIA, Bappenas, Regional government	6
Public consultations to ensure adequate buy-in in the process of defining criteria, EFT mechanism and enabling conditions.	MoF	Regional government, MoIA, MoEF, MMaF	3
Inform and advocate authorities on ways of ensuring the propose EFT mechanism can be included in the transfer mechanism.	MoF	MoEF, MMaF, MoIA, Bappenas	12
Draft a transfer mechanism and put it into legal document.	MoF	MoEF, MMaF, MoIA, Bappenas, Regional government, local parliament	3
Introduction of relevant amendments in legislation to public	MoF	MoEF, MMaF, MoIA, Bappenas, Regional government, local parliament	3
Total			36

The following risks may affect the success of the solution and should continue to inform its further planning and implementation:

- Application of weights in the criteria/index of EFT may create perverse incentive
- Limited flexibility associated with government processes that may make the updating of criteria for EFT difficult to implement.

d). Expected Finance result

Allocation of DID by national government is increasing overtime. In the beginning year of 2010, it reached of IDR 1,387.8 billion and by the end of 2016, DID allocation soared significantly by more than 200% or IDR 5,000 billion. According to Directorate General of Financial Balance Ministry of Finance, the number of regions receiving DID allocation increased significantly from 57 regions in 2010 to 271 regions in 2016.

The finance solution is expected to realign current expenditure to play as an effective instrument in providing incentives for regions (province and city/district) to deliver their best performance in fiscal and financial management in public service, in economy development and in prosperity of society. The impacts of new component of DID in APBN are more funds provided for DID and new system and criteria in grading performance of locals.

3.3.6. Strengthening Mechanism for Bioprospecting in Indonesia

a). Context

As country with rich biodiversity, Indonesia should take advantage of biodiversity utilization and gain benefit from biological resources. Searching biological properties that are commercially valuable from certain species or biological resources called as bioprospecting. Existing examples of bioprospecting can be seen in its implementation by the pharmaceutical industry, whereby chemical properties among plants of an environment are sought after for manufacture of medicinal products. This concept has been applied to several other industries, such agriculture, i.e. for the identification of natural, effective crop pesticides.

At national level, number of research have been taken to collect, classify and store data from species to gene level. One example is the gene bank of the Agricultural Research and Development Agency (ICSR) of Ministry of Agriculture has a collection of food crop covering 29 species in cereals, pulses and yams. Until 2016, the total collection of gene resources stored was 11,044 accessions which included rice, maize, sorghum, wheat, millet, sesame, beans etc. Another example from sea biodiversity is bioactive peptides from seahorses were prospective to reduce inflammation in microglia (immune cells in the central nervous system) and has the potential to ward off Alzheimer's disease. Other prospective drugs come from sea are sea cucumbers, seaweed, mangroves, seagrasses, and microalgae which potential for antibiotics and treatment of degenerative disease.

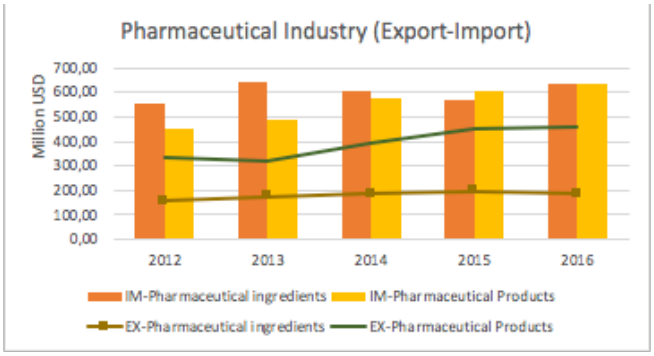

Figure 3.2. Value of Indonesian Pharmaceutical Industry (2012- 2016)

Source: Ministry of Industry, 2017

In terms of trade balance, pharmaceutical industry contributes less export than import, which indicates opportunity for domestic pharmaceutical industry to develop. Despite its potency, the process may take time from research to commercialization (10-15 years) involving among others product development, series of testing particularly for medicine and human consumption as well as marketing development. However other than pharmaceutical, botanical medicine and personal care bioprospecting development may take shorter period (2-5 years).

The case for this financial solution

- Indonesia has a large number of plant biodiversity, approximately 30,000 – 50,000 species of plants, but only 7500 species of them known to be efficacious as drugs ingredients.
- In terms of mangrove biodiversity, Indonesia represents approximately 22.6% of the total mangrove ecosystems in the world. A number of mangrove's secondary metabolites have significant pharmacological properties that have been used traditionally for the treatment of diseases. Mangrove forests suffer a shrinkage of about 1-2% every year globally
- Ministry of Environment and Forestry released Ministry regulation no 2/2018 which provide technical guideline for access of genetic resources, comprise including access benefit sharing (ABS) from wild species which become one of pre-requisite of efficient bioprospecting process.

The finance solution intends to strengthen mechanism for bioprospecting through capacity building of institution undertaking bioprospecting and ensuring sustainable sourcing applies and benefit the community who depends highly on bio-resource. This include knowledge exchange, joint intellectual property right, maintain traditional product knowledge, valuation and negotiation are among the capacities need to enhance bioprospecting mechanism to work. Ultimately, the solution will open window further for biodiversity and bioprospecting financing program.

b). Objective

The objective of the solution is to function mechanism of bioprospecting for selected potential materials. Achieving this would be supported by following components:

- Review and analysis of bio-resources material
- Analyze and extract of bio-resources for food, medicine, cosmetic, energy etc.
- Intellectual property rights related issues
- Product development and standardization
- Research dissemination to industry and SMEs for potential uptake
- Technical and economic feasibility analysis
- Production and marketing

Among those components, the finance solution will focus particularly on bioprospecting preparation stage and strengthen institutions (property right etc.) and capacity toward sustainable supply of bioprospecting material.

c). Next Steps

Step	Lead Agency	Stakeholders	Duration
Conduct scoping meeting involving key ministries to explore research status and identify potential development of bioprospecting	BAPPENAS	Min of Environment and Forestry, LIPI, Min of Agriculture, Min of Health, Agency of Drug and Food Control	1
Facilitate setting priorities for bioprospecting project for conceptualization	BAPPENAS	Min of Environment and Forestry, LIPI, Min of Agriculture, Min of Health, Agency of Drug and Food Control	1
Facilitate dialog between farmers and research agency to establish cooperation	BAPPENAS	Min of Environment and Forestry, LIPI, Min of Agriculture	1
Capacity building for strengthening intellectual property right related matter (negotiation, database strengthening etc.)	Ministry of Law and Human Right, Bappenas	Min of Environment and Forestry, LIPI, Min of Agriculture, Min of Health, Agency of Drug and Food Control	3
Capacity building for resource owner (indigenous people, farmers, fishermen etc.) on sustainable sourcing for bioprospecting activities	BAPPENAS, technical ministries	Min of Environment and Forestry, LIPI, Min of Agriculture	3
Develop policy/procedures to support implementation of bioprospecting	BAPPENAS	Min of Environment and Forestry, LIPI, Min of Agriculture, Min of Health, Agency of Drug and Food Control	3
Adoption of policy and implementation for enhanced system of bioprospecting mechanism	BAPPENAS	Min of Environment and Forestry, LIPI, Min of Agriculture, Min of Health, Agency of Drug and Food Control	3
Total			15

d). Expected Financial Results

The expected financial results is estimated based on historical sales of pharmaceutical market around $4.9 billion (Ministry of Commerce, 2016). It is assumed that gain of bioprospecting about 1 percent of the sales reaching $49 million and will grow gradually due to the development of traditional medicine for export market by 5 percent annually. The total growth is estimated around 20 percent by 2020. This will be supported by investment from large pharmaceutical industries and small and medium enterprises. The community would also be benefited through supply-side of bio-resources material.

4 CONCLUSION

4 Conclusion

Biodiversity Finance Plan summarizes all work from BIOFIN and proposes steps to implement a mix of finance solutions in order to expand and improve the country's biodiversity financing gaps and achieve national biodiversity targets. The plan distilled the prioritized finance solutions from the preliminary studies, the assessment and prioritization results, and the insights garnered through discussions and consultation with the key stakeholders. Based on these results, the plan presents two prioritized finance solutions: 1) Promoting Ecological Fiscal Transfer (EFT) for Financing Biodiversity and 2) Blended Financial Solutions for MPA Management.

Biodiversity Finance Plan also address strategic missions set in IBSAP, which include: a) to improve Indonesia's biodiversity ownership and utilization of Indonesian biodiversity, b) to treat biodiversity as a source of improving welfare, and creating sustainable welfare and sustainability of life for the Indonesian people, and c) to employ fully responsible biodiversity management.

This Biodiversity Finance process suggested improvement in governance of biodiversity management in Indonesia by:

a) Identify problems and strategies for each typology of situations set nationally;
b) Improve norms, standards, procedures and criteria (NSPK) related to program and budget stipulation;
c) It is necessary to integrate the job and function of various institutions/work unit based on the specific function (e.g., watershed, ecoregion, etc.) to deal with complex objective/outcomes.

Finally, the BFP shall be seen as a living document, intended to be owned and used by the government and biodiversity sector as a whole. It is part of initiative to promote and encourage biodiversity finance in Indonesia, and may be updated as conditions, needs and opportunities evolve. Implementation will require a coordinated effort from ministry/institution, civil society (NGOs), private sector and development partners. It is also clear that the commitment and financing by the public sector should increasingly be complemented with contributions from the private sector, foundations, donors, and NGOs.

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ANNEXES

ANNEXES I: Matrix of Alternative Financial Instruments According to Source and Result Category

Result / Source	Avoid Future expenditure	Deliver better
Government	**Existing**	
	Conservation extension services, **REDD+ (Reduced Emissions from Deforestation and forest Degradation)**, **set limits on trade of natural resources, taxes on pesticides and chemical fertilizers**.	**Carbon markets, certification/eco-labels, clim change finance, climate credit mechanisms**, **village fund, disaster relief funds, Environme Trust Fund (ETF)**, **financial incentives, fisherie quotas (catch limits)**, **funds generated by the Nagoya protocol on ABS**, **national water fund Public Sector Investment Programme (PSIP)**, **revenue benefit sharing and access to resour subsidies for organic agriculture, tax incentiv**
	Potential	
	Blue bonds, emissions taxes, fuel taxes, reduction of subsidies, taxes on tobacco, water markets, water quality markets, and water tariffs.	'Food for work' programmes, conservation fina incentives, conservation notes, exchange-trade catastrophe options, forest bonds, incentives f public budget execution, legal mechanism for economic, incentives to sustain use of biodiver market for green products through natural res trade and value chains, renewable energy finar windows, social and development impact bond sovereign wealth funds.
Private Company	**Existing**	
	Carbon offset scheme, payment for ecosystem services (PES).	**Biodiversity offsets, carbon markets, climate change finance, climate credit mechanisms**, **corporate social responsibility spending**, **enhanced land or marine stewardship**, **Projec Finance for Permanence (PFP)**.
	Potential	
		corporate funding, diaspora investment, environmental fund, equity financing for sustainable tourism project, oil royalty-based financing, social and development impact bon

	Generate Revenues	Realign Expenditure
nate nt es l, ces, es.	**Conservation concession fees**, **bioprospecting (biodiversity utilization payment)-gain**, **dive fees**, **fines and penalties**, **forestry concession fees**, **incentives-market based instrument**, **green tax**, **local government (hotel) tax or fees charged of hotel, local service tax**, **nature reserve, non-tax revenues, non-timber forest product harvesting licenses and fees**, **profit directly from conserving biodiversity (e.g. eco-tourism companies), promotion of sustainable tourism**, **taxes and fees in the tourism sector**, **taxes on renewable natural capital-forest taxation, taxes fees and royalties in the forestry sector, tourism real estate and commercial concessions.**	**Government allocation funds**, **state budget**.
ance ed or rsity, ource nce ds,	Biodiversity offsets (the biodiversity banking and offsets scheme), charge systems, charges for scarce road space and water resources, commemorative license plates (fees from license), corporate social responsibility tax, environmental taxes, fines and levies, fisheries landing fee, forestry stumpage fees, green bonds, green sukuk, carbon tax, impact investment**,** law on natural resource use fee, lotteries/lottery winnings, mooring fees, pasture fee, payment from hydropower, hydroelectric revenues, people's survival fund (earmarked funds), property taxes, revenue from telecom operators, taxes and subsidies, tourist departure tax, taxes on renewable natural capital (water; timber).	Ecological Fiscal Transfers (EFT), oblast budgets.
ct	**bioprospecting (biodiversity utilization payment)-gain, fishing licenses, logging fees**, **earmarked funds related to environment-royalties**, **mining taxes fees and royalties from mining, tax on shipping/water transportation, promotion of sustainable tourism, resource rents and royalties**, **wastewater fees**.	-
ds.	airport departure fees that fund protected areas, impact investment, biobank, and taxes on negative climate change activities, water abstraction charges.	

Result / Source	Avoid Future expenditure	Deliver better
Bilateral & Multilateral Donor	**Existing**	
	-	**biodiversity conservation (small grant financi donor funded projects**, **Global Environment facility (GEF) Trust Fund, grant**.
	Potential	
	-	enterprise challenge funds, water conservatio grant.
National Financial Institutions	**Existing**	
	carbon credit payment.	**loans**.
	Potential	
	voluntary standards (finance), portfolio (investment fund).	carbon funds, cat bond funds indices, micro-cr microfinance, project finance, securitization, venture capital & private equity, water conserv loan, weather derivatives.
NGO/ Community Based Organizations (CBO)/ Civil Society	**Existing**	
	conservation extension services, **polluters payment scheme**.	**conservation funds**, **enhanced land or marine stewardship, national conservation trust fund for natural resources, Official Development Assistance (ODA)-Funds from ODA, revolving fund, sinking fund, taman national trust fund financing project, traditional Thai medicine fu enhanced land or marine stewardship, marin parks trust fund (conservation charges)**.
	Potential	
	-	debt-financed endowments (endowment fund economic valuation of ecosystems, public debt finance from a renegotiated petroleum agreem zakat, infaq, shadaqah and waqf (zizwaf).

	Generate Revenues	Realign Expenditure
ng),	-	-
n	-	public guarantees- World Bank guarantees.
	-	-
edit/ vation	green bonds, remittances (diaspora financing), tender commission.	-
e d / PA und, e	**bioprospecting (biodiversity utilization payment)-gain**, **debt for nature swap (commercial debt-for-nature swaps), root capital, biodiversity business incubator**, **visit fee**, **Motor Vehicles User's Charge (MVUC) (earmarked funds unrelated to environment**), **user fees.**	-
), t and ment,	crowd funding, debt for adaptation swap, finance alliance for sustainable trade, payment for watershed protection, travel philanthropy fund, developer fees / water infrastructure, fundraising through public revenue-raising effort, lotteries/lottery winnings, photo safaris, user charge in public facilities.	-

ANNEXES

ANNEXES II: Key Information Checklist for Review Workbook Component

Workbook Component	Items	Status
PIR	National entry points for biodiversity financing including description of the value of biodiversity to the country	☑
	Key sectors that are either largely dependent on biodiversity or have a major impact on biodiversity and their contribution to GDP and jobs.	⚠
	Specific policy recommendations that describe an opportunity for altering the **financial and economic incentives** for companies, households, and government actors influencing priority biodiversity trends	⚠
	Opportunities to better integrate the national and subnational planning and budgeting process	?
	Existing biodiversity finance solutions that are active or being piloted in the country	☑
	Main sources of financing from biodiversity dependent/impacting sectors – forestry, fisheries, nature-based tourism, agriculture, mining etc. as they contribute to national government treasury, state-owned agencies, local governments, and key private sector actors. This should include taxes and other regulations that are derived from or influence biodiversity management	?
	Major subsidies that are considered biodiversity-harmful or "adverse" subsidies	?
	Subsidies and other fiscal incentives that support sustainable biodiversity management	?
	Institutional capacity with regard to design and implementation of biodiversity finance solutions	☑
BER	Current and projected expenditures of key government agencies	⚠
	Current and potential expenditures of NGOs and the private sector including opportunities for expanded investments	⚠
FNA	Financing needs, current finance solutions, and financing gaps for prioritized biodiversity strategies, actions and results	⚠
	Financing needs, available finance solutions, and financing gaps for key organizations	☑
	Potential finance solutions associated with each prioritized strategy, action, or organization that could be scaled, made more effective, or otherwise improved	?

☑ : found/clearly identified in the report

⚠ : found implicitly or need more elaborative explanation

? : yet to be found/identified in the report

ANNEXES

ANNEXES III: Existing and Potential Financial Instruments

Category: Result	Financial Instruments
Avoid future expenditure	**Existing**
	carbon credit payment, carbon offset scheme, conservation extension services, payment for ecosystem services (PES), "polluters payment scheme", REDD+ (Reduced Emissions from Deforestation and forest Degradation), set limits on trade of natural resources, taxes on pesticides and chemical fertilizers.
	Potential
	blue bonds, emissions taxes, fuel taxes, reduction of subsidies, taxes on tobacco, voluntary standards (finance), water markets, water quality markets, water tariffs, portfolio (investment fund).
Deliver better	**Existing**
	biodiversity conservation (small grant financing), biodiversity offsets, carbon markets, certification/eco-labels, climate change finance, climate credit mechanisms, conservation funds, corporate social responsibility spending, dana desa (village funds), disaster relief funds, donor funded projects, enhanced land or marine stewardship, Environment Trust Fund (ETF), funds generated by the Nagoya protocol on ABS, Global Environment facility (GEF) Trust Fund, grant, loans, marine parks trust fund (conservation charges), financial incentives, fisheries quotas (catch limits), national conservation trust fund for natural resources, national water fund, Official Development Assistance (ODA)-Funds from ODA, Project Finance for Permanence (PFP), Public Sector Investment Programme (PSIP), revenue benefit sharing and access to resources, revolving fund, sinking fund, subsidies for organic agriculture, National Parks trust fund/ PA financing project, tax incentives, traditional Thai medicine fund.
	Potential
	'food for work' programmes, carbon funds, cat bond funds, conservation finance incentives, conservation notes, corporate funding, debt-financed endowments (endowment fund), diaspora investment, economic valuation of ecosystems, enterprise challenge funds, environmental fund, equity financing for sustainable tourism project, exchange-traded catastrophe options, forest bonds, incentives for public budget execution, indices, legal mechanism for economic incentives to sustain use of biodiversity, market for green products through natural resource trade and value chains, micro-credit/microfinance, oil royalty-based financing, project finance, public debt and finance from a renegotiated petroleum agreement, renewable energy finance windows, securitization, social and development impact bonds, sovereign wealth funds, venture capital & private equity, water conservation grant, water conservation loan, weather derivatives, zakat, infaq, shadaqah, and waqf (ziswaf).

Category: Result	Financial Instruments
Generate Revenues	**Existing**
	conservation concession fees, biodiversity business incubator, **bioprospecting (biodiversity utilization payment)-gain**, **debt for nature swap (commercial debt-for-nature swaps)**, **dive fees, fishing licenses**, **fines and penalties**, **forestry concession fees**, **rare animal/species visit fee**, **green tax**, **incentives-market based instrument**, **local government (hotel) tax or fees charged of hotel earmarked funds related to environment-royalties**, **mining taxes fees and royalties from mining**, **Motor Vehicles User's Charge (MVUC) (earmarked funds unrelated to environment), nature reserve, non-tax revenues, non-timber forest product harvesting licenses and fees, shipping tax**, **profit directly from conserving biodiversity (e.g. eco-tourism companies), promotion of sustainable tourism**, **resource rents and royalties**, **root capital**, **taxes and fees in the tourism sector, taxes and subsidies**, **tourism real estate and commercial concessions, tourist departure tax**, **user fees, wastewater fees**.
	Potential
	airport departure fees that fund protected areas, biodiversity offsets (the biodiversity banking and offsets scheme), charge systems, charges for scarce road space and water resources, commemorative license plates (fees from license), corporate social responsibility tax, crowdfunding, debt for adaptation swap, developer fees / water infrastructure, logging fees, environmental taxes, finance alliance for sustainable trade, fines and levies, fisheries landing fee, forestry stumpage fees, fundraising through public revenue-raising effort, green bonds, green sukuk, carbon tax, impact investment, law on natural resource use fee, local service tax, lotteries/lottery winnings, biobank, mooring fees, pasture fee, payment for watershed protection, payment from hydropower, hydroelectric revenues, people's survival fund (earmarked funds), photo safaris, property taxes, remittances (diaspora financing), revenue from telecom operators, taxes on negative climate changes activities, taxes on renewable natural capital (water; timber), taxes on renewable natural capital-forest taxation, taxes fees and royalties in the forestry sector, tender commission, travel philanthropy fund, user charge in public facilities, water abstraction charges.
Realign expenditures	Potential
	Ecological Fiscal Transfers (EFT), government allocation funds, oblast budgets, public guarantees-world bank guarantees, state budget.

Category: Sources/Organization	Financial Instruments
Government	**Existing**
	conservation concession fees, **bioprospecting (biodiversity utilization payment)-gain**, **carbon markets, certification/eco-labels**, **climate change finance, climate credit mechanisms**, **conservation extension services**, **dana desa (village funds), disaster relief funds, dive fees**, **Environment Trust Fund (ETF)**, **financial incentives**, **fines and penalties**, **fisheries quotas (catch limits)**, **forestry concession fees**, **funds generated by the Nagoya Protocol on ABS, government allocation funds**, **green tax**, **incentives-market based instrument, nature reserve, national water fund, non-tax revenues**, **non-timber forest product harvesting licenses and fees**, **profit directly from conserving biodiversity (e.g. eco-tourism companies)**, **promotion of sustainable tourism**, **Public Sector Investment Programme (PSIP), REDD+ (Reduced Emissions from Deforestation and forest Degradation)**, **revenue benefit sharing and access to resources, set limits on trade of natural resources**, **state budget**, **subsidies for organic agriculture, tax incentives, taxes and fees in the tourism sector**, **taxes fees and royalties in the forestry sector, tourism real estate and commercial concessions, tourist departure tax**.
	Potential
	'food for work' programmes, biodiversity offsets (the biodiversity banking and offsets scheme), blue bonds, charge systems, charges for scarce road space and water resources, commemorative license plates (fees from license), conservation finance incentives, conservation notes, corporate social responsibility tax, Ecological Fiscal Transfers (EFT), emissions taxes, environmental taxes, exchange-traded catastrophe options, fines and levies, fisheries landing fee, forest bonds, forestry stumpage fees, fuel taxes, green bonds, green sukuk, carbon tax, impact investment, incentives for public budget execution, , law on natural resource use fee, legal mechanism for economic incentives to sustain use of biodiversity, local government (hotel) tax or fees charged of hotel, local service tax, market for green products through natural resource trade and value chains, mooring fees, oblast budgets, pasture fee, payment from hydropower, hydroelectric revenues, people's survival fund (earmarked funds), reduction of subsidies, renewable energy finance windows, revenue from telecom operators, social and development impact bonds, sovereign wealth funds, taxes and subsidies, taxes on pesticides and chemical fertilizers, taxes on renewable natural capital (water; timber), taxes on renewable natural capital-forest taxation, taxes on tobacco, property taxes, trading systems with allowance auctions, water markets, water quality markets, water tariffs.
Private Company	**Existing**
	biodiversity offsets, bioprospecting (biodiversity utilization payment)-gain, carbon markets, carbon offset scheme, climate change finance, climate credit mechanisms, **enhanced land or marine stewardship**, **earmarked funds related to environment-royalties**, **mining taxes fees and royalties from mining**, **shipping tax, Payment for ecosystem services (PES), Project Finance for Permanence (PFP), promotion of sustainable tourism, resource rents and royalties**, **wastewater fees**.

Category: Sources/Organization	Financial Instruments
Private Company	Potential
	airport departure fees that fund protected areas, corporate funding, corporate social responsibility spending, diaspora investment, fishing licenses, logging fees, environmental fund, equity financing for sustainable tourism project, impact investment, biobank, oil royalty-based financing, social and development impact bonds, taxes on negative climate changes activities, water abstraction charges.
Bilateral & Multilateral Donor	**Existing**
	biodiversity conservation (small grant financing), donor funded projects, **Global Environment facility (GEF) Trust Fund, grant**.
	Potential
	enterprise challenge funds, public guarantees-world bank guarantees, water conservation grant.
National Financial Institutions	**Existing**
	carbon credit payment, **loans**.
	Potential
	carbon funds, cat bond funds, green bonds, indices, micro-credit/microfinance, portfolio (investment fund), project finance, remittances (diaspora financing), securitization, tender commission, venture capital & private equity, voluntary standards (finance), water conservation loan, weather derivatives, portfolio (investment fund).
NGO	**Existing**
	bioprospecting (biodiversity utilization payment)-gain, carbon markets, climate change finance, climate credit mechanisms, conservation funds, **debt for nature swap (commercial debt-for-nature swaps)**, **enhanced land or marine stewardship**, **national conservation trust fund for natural resources, Official Development Assistance (ODA)-Funds from ODA**, **revolving fund, root capital, sinking fund, National Parks trust fund/ PA financing project, traditional Thai medicine fund.**
	Potential
	crowdfunding, debt for adaptation swap, debt-financed endowments (endowment fund), economic valuation of ecosystems, finance alliance for sustainable trade, payment for watershed protection.
Community Based Organizations (CBO)	**Existing**
	conservation extension services.
	Potential
	travel philanthropy fund.

Category: Sources/Organization	Financial Instruments
Civil Society	**Existing**
	biodiversity business incubator, **enhanced land or marine stewardship**, **rare animal/species visit fee**, **marine parks trust fund (conservation charges)**, **Motor Vehicles User's Charge (MVUC) (Earmarked Funds unrelated to environment), user fees**.
	Potential
	developer fees / water infrastructure, fundraising through public revenue-raising effort, lotteries/lottery winnings, photo safaris, "polluters payment scheme", public debt and finance from a renegotiated petroleum agreement, user charge in public facilities, zakat, infaq, shadaqah, and waqf (zizwaf).

ANNEXES

ANNEXES IV: Rapid and Detailed Screening for Assessment and Prioritization
Financial Solutions

Form 1: Prioritized Action Plan Activities

IBSAP	Activity
Action Plan 1	Research, data Management, and Documentation of Biodiversity
Action Plan 2	Biodiversity Utilization
Action Plan 3	Maintenance and Preservation Biodiversity

Activity	Sub-Activity
Research, data Management, and Documentation of Biodiversity Action Plan	Improvement of biodiversity data and information compilation (database)
	Improvement of biodiversity basic research
	Development of utilization of biodiversity research output
Biodiversity Utilization Action Plan	Development of eco-tourism attractions
	Water management and conservation
	Management of terrestrial conservation areas
	Management of marine conservation areas
	Improvement of production and productivity of sustainable agriculture an
	Development of marine and fisheries products
	Restoration and enhancing the marine conservation area
	Restoration ecosystems outside conservation areas
	Improvement quality and quantity of *plasma nutfah*
Maintenance and Preservation Biodiversity Action Plan	Restoration and development essential ecosystem areas
	Development ex-situ conservation areas
	Enhancement in protection of endangered, vulnerable, and threate
	Pollution control of various types of activities
	Restoration of land conservation area
	Improvement quality and quantity of seeds

	Priority [1=most important/priority]

	Priority [1=most important/ priority]	Alternative 1	Alternative 2	Alternative 3
)				
d plantations				
ened species				

Form 2: Rapid Screening - Terestrial

No.	Finance Solutions	Descriptions
1	Biodiversity business incubator	Business incubation aims to develop biodiversity businesses.
2	Biodiversity offsets	An attempt to compensate for the biodiversity that has been damaged after preve place. The objective of biodiversity offsets is to obtain net gain for example in term and cultural and social values of people related to biodiversity.
3	Bioprospecting	Search for / exploration of biological materials to be developed into commercial an value.
4	Carbon credit payment	It is a financial instrument that allows the owner (usually the company) to produce awarded to countries that are able to reduce the greenhouse gas effect under perr can be traded internationally.
5	Carbon markets	Aims to reduce gas emissions by reducing emissions limits and allowing the sale an carbon emissions.
6	Carbon offset scheme	Carbon Offsetting in term means offsetting. What is meant here is offsetting positi offsetting is simply explained by reducing carbon in one place to offset carbon emi
7	Climate, carbon and forestry funds	A number of financial assets that may be property, money, securities deposited or agency and channeled or utilized for climate change, carbon and forest manageme
8	Conservation incentives	Incentives given to conservation managers to increase the output of management
9	Corporate Social Responsibility Spending	The CSR expenditures that companies do for biodiversity.
10	Crowdfunding	The practice of raising funds from a large number of people to fund a project or bu internet.
11	Village funds	The Village Fund is a fund sourced from the State Revenue and Expenditure Budge through the District's Revenue and Expenditure Budget and is used to finance the a development, and community empowerment, and community.
12	Diaspora Investment	Investments devoted to diaspora in this regard to support biodiversity financing.
13	Ecological Fiscal Transfers	Redistribution of tax revenues between the central government and local governm In this context, the fiscal transfers carried out aim to include environmental service of funds.
14	Environmental Taxes	Taxes imposed on the basis of physical units (or proxies) proven to have negative e of well-known environmental taxes: energy taxes, transport taxes, pollution taxes a
15	Equity financing for sustainable tourism project	The financing scheme by depositing capital on tourism projects so that it indirectly
16	Forest bonds	Bonds used to finance projects related to forest management.
17	Forestry Concession Fees	Some fees or costs to be paid by exploiters of forests, usually under the supervisio calculation is based on the calculation of economic value and forest use value.
18	Forestry Stumpage Fees	The amount of fees paid to allow for the cutting of forests in certain areas. Usually
19	Fundraising through public revenue-raising effort	Fundraising is done at certain moments such as environmental day.
20	Government friendly subsidies	Subsidies from governments aimed at supporting individuals or organizations cond activities.
21	Grant	Grant funds.
22	Green bonds	Bonds intended to finance projects related to the environment.
23	Green microfinance	Microfinance programs or schemes for micro-based projects.
24	Impact Investing	An investment scheme by investing money into a business or non-profit organizati environmental change, in line with financial benefits.

	Sub-Action Plan	Potential for Biodiversity Impact	Scale of Financial Opportunity	Political Feasibility and Likelihood of Success	Sum of Rapid Feasibility Scores
ntive and mitigation measures have taken s of composition, ecosystem and habitat					
d biochemical products of genetics and					
one ton of carbon dioxide. Credits are missible emission quotas. These credits					
d purchase of instruments related to					
ve carbon with negative carbon. Carbon ssions in one place.					
submitted for good governance by an nt programs.					
activities undertaken.					
siness that is generally done through the					
t for the Village which is transferred administration of government,					
nents to finance agreed priority agendas. s as part of the existing fiscal allocation					
nvironmental effects. There are four types nd natural resource taxes.					
owns the project.					
n of the central government. The fee					
paid by the company to the government.					
ducting environmental management					
on in the hope of generating social and					

25	Law on Natural Resource Use Fee	Fee imposed on the use of natural resources.
26	Non-Timber Forest Product harvesting licenses and fees	Licenses or fees to be paid in relation to the collection, transportation and sale of n mushrooms, honey, flowers etc.
27	Airport tax	Airport tax used for conservation management. Tax revenues are included in the co year.
28	Hotel tax	Hotel tax used for conservation management. Tax revenues are included in the cor year.
29	Payment for Ecosystem Services	A payment mechanism for ecosystem services, in which a party benefiting directly landowners and users, as incentives for maintaining ecosystem conservation and re voluntary movement, which can be negotiated by stakeholders. Therefore, the app control, but in the form of cooperation as agreed. The paid environmental services how much carbon can be absorbed, how much forest is maintained to maintain wa
30	Pesticide Tax	Taxes aim to reducing the use of pesticides at risk can damage the environment.
31	Photo Safaris	Conservation payments for endangered animals and education and media on these
32	Promotion of Sustainable Tourism	Financing scheme by promoting an environment-based tourism object as a media and visitors themselves. As an example in the campaign "Visit Indonesia" or "Malay
33	Reduction of subsidies	
34	Revolving fund scheme	Funds deposited to be managed on a rolling basis. In general, funds are used for lo
35	Small Grant Financing	Funding by non-repayable donors.
36	Social Impact Bond	Bonds used to finance projects that have high social impact for the community.
37	Sovereign Wealth Funds	Endowments or funds fully owned by a country derived from foreign currency rese
38	Government allocation funds/ State budget	Fund allocations from the government budget (eg APBN, APBD). On the state budg the budget allocation to biodiversity. The budget reflects the importance of biologi development. The importance of biological resources for economic and social deve way conservation income is raised and distributed.
39	Subsidies for organic agriculture	Subsidies given by the government to support organic farming.
40	Tax on fuel	Taxes levied on fuel.
41	Taxes and fees in the tourism sector	Taxes imposed for tourism sectors.
42	Taxes, Fees and Royalties in the Forestry Sector	Taxes, fees or royalties imposed on persons engaged in special activities in the fore transporting forest products and so forth.
43	Tourism fees	Fee imposed on individuals entering the conservation area of ecotourism.
44	Tourism, real estate and commercial concessions	The cost of licensing to open a business in a protected area / area such as hotels ar
45	Travel Philanthropy fund	Donations that can be given by tourists who visit a tourist attraction outside the co scheme is more voluntary.
46	Trust Fund	Trust Funds are a number of financial assets that may be property, money, securitie (Trustor / Donor / Grantor) is entrusted or handed over to properly administered b the benefit of the beneficiary Beneficiaries in accordance with the mandated inten
47	User Fees	Fee imposed on individuals that enter to the ex-situ conservation area.
48	Visit fee on endangered, vulnerable, and threatened species	Fee imposed when making visits to endangered animals or endangered animals su
49	Green Sukuk	Sharia investment instruments whose use aims to provide solutions for environme finance conservation or eco-tourism based on sharia and environmental safeguard
50	Debt-for-Nature Swaps	Through a debt restructuring agreement, the government can remove some of its channeled into domestic conservation initiatives and climate adaptation programs. a conservation trust fund to disburse funds. Debt-for-nature swaps can target offici common schemes.

non-timber forest products such as					
onservation trust fund of USD 600,000 per					
servation trust fund of $ 300,000 per					
from the ecosystem services pays to estoration. This payment mechanism is a roach is not in the form of command and must also be clearly measured, such as ater availability, and so on.					
e endangered animals.					
campaign that aims to attract investors ysia Truly Asia".					
ans, venture capital or initial costs					
rves, natural resource payments or taxes.					
get reviewed, and incorporate or increase cal resources in relation to sustainable elopment, needs to be reflected in the					
st such as extracting forest products,					
nd restaurants.					
sts that must be paid. This financing					
es (Trusts) that a person or institution y a Trustee and distributed or utilized for t and purpose.					
ch as komodo or cendrawasih.					
ntal climate change, can also be used to s.					
foreign debt. The savings earned will be This often requires the establishment of ial and commercial loans, and the most					

Form 2: Rapid Screening - Marine

No.	Finance Solutions	Descriptions
1	Biodiversity business incubator	Business incubation aimed for develop biodiversity business
2	Biodiversity offsets	Biodiversity offsets are measures taken to compensate for significant residual and a minimized and / or rehabilitated or recovered, in order to avoid net losses or to ach al., 2004). Offsets can be positive management interventions such as restoring degr or risk, and protecting areas where there is a potential loss of biodiversity. Promotio loss by allowing companies (ie mining) to protect plots of land and biodiversity equ measured conservation result is resulted from compensating for the adverse biodiv from development projects.
3	Bioprospecting	Bioprospecting is a systematic search for biochemical and genetic information in na products and applications. Bio-prospecting is collection, research, and utilization of tematically for resources, sources, genes, organisms, and other natural products for (direct financial benefits can be used for conservation, in addition to royalty). Bio-p commercially valuable genetic and biochemical sources' (CBD, 2000b). However, th some narrow bioprospecting definitions involving only the search for valuable gene development and application of such materials.
4	Blue bonds	Green bond financing projects related to blue economy, ie sustainable fisheries and financing initiative that enters the capital market to fund marine environmental pro
5	Conservation extension services	Government or civil society extension services that reduce the cost of managing ma and private groups. Extension services- especially in remote rural areas- have declin replaced with sales and marketing services for environmentally hazardous products pesticides- which ultimately result in higher costs to the government for environme
6	Conservation incentives	Direct or indirect incentives to businesses to advance conservation outcomes, e.g. or water.
7	Conservation notes	Fixed income products that distribute capital to critical lands and critical waters. Th market price (ie concessional). Examples include property sold to conservation gove with due consideration or restrictions to ensure that the organization's long-term c met. See TNC Conservation notes: https://www.nature.org/about-us/conservation-
8	Corporate Social Responsibility Spending	The CSR expenditures that companies do for biodiversity.
9	Crowdfunding	Crowdfunding is the way in which people, organizations and businesses, including s through online portals (called crowdfunding platforms) to financing or refinancing t
10	Village funds	Village funds from the government for the development of coastal tourism areas, re through the empowerment of surrounding communities.
11	Developer fees / water infra-structure	Development or "Tap" fees are fees imposed for new housing or industrial developr serve new development and may include requirements for water supply permits (in in lieu of payments to cover the cost of obtaining a supply license additional. This o building permitting process.
12	Diaspora Investment	Sebuah badan penelitian yang berbeda berfokus pada peran diaspora sebagai inves atau secara tidak langsung sebagai investor portofolio. Dua asumsi umum mengena kan: (1) bahwa investor diaspora mendapatkan keuntungan dari informasi khusus m asal mereka, dan (2) bahwa investor diaspora menerima tingkat pengembalian inve patriotik.
13	Diving fees	Fees charged for snorkeling or diving permits in certain marine parks or local protec
14	Eco-labels/certification	Using the "green product" or "green service" template, the certification scheme ge willingness to pay for sustainably managed commodities. For example, consumers a products or to catch fish sustainably. The certification scheme is also seen as contri especially if incremental prices reflect the "true cost" of harvesting or commodity p plowed back into the business, creating a demand for more labor.

	Sub-Action Plan	Potential for Biodiversity Impact	Scale of Financial Opportunity	Political Feasibility and Likelihood of Success	Sum of Rapid Feasibility Scores
dverse impacts that can not be avoided, ieve net biodiversity benefits (ten Kate et raded habitats, overcoming degradation on of a framework to reduce biodiversity ivalent to using agreed standards. The ersity impact of residues, which arise					
ture to develop commercially valuable genetic and biological resources sys- r scientific and / or commercial purposes rospecting is 'exploring biodiversity for e definition varies within countries, with tic material, while others include the					
d marine resource conservation. A new jects.					
arine and land resources for individuals ned substantially in many countries and such as engineering seeds, fertilizers and ental issues and health.					
utilizing less natural capital such as land					
e interest rate can be lower than the ernment agencies, institutions or buyers, onservation objectives for the project are note-brochure-1.pdf					
tart-up businesses, can raise money heir activities. (Sentot et.al., 2015)					
eservoirs (rivers), and lakes, can be					
ment to cover infrastructure costs to markets with water supply controls) or ne-time fee is often integrated into the					
tor- baik secara langsung di perusahaan i investor diaspora patut dipertimbang- engenai peluang investasi di negara stasi di bawah pasar karena sentimen					
cted areas.					
nerates a price margin signifying the are willing to pay margins for organic buting to the failure of the market, roduction and when sufficient profits are					

15	Ecological Fiscal Transfers	Redistribute tax revenues between government levels, from national and local gove agreed principles and priorities. Ecological Fiscal Transfers integrating ecological ser index (eg the size / quality of protected areas) part of the fiscal allocation formula t to provide incentives for protected area expansion.
16	Enhanced Land or Marine Stewardship	Informal or formal commitment by communities, private landowners, NGOs or lanc protect certain land or marine areas. Incentives are sometimes given to encourage owners.
17	Equity financing for sustainable tourism project	Both cash and in-kind (eg, the value of land contributing to the project, community provided by partners at low cost or no cost) should be included as part of the proje the need for capital to be counted as equity. The decisive feature of equity financin service provider is entitled to a proportionate share of any economic profit (full par downside) If the project fails, the funds invested can not be recovered. In exchange entitled to the same proportion share of the financial returns the project earns.
18	Fines and Penalties	Obey the costs of penalties and fines applicable to prevent behavior that harms the
19	Fisheries landing fee	As an alternative to the quota the fisherman pays a fee to the authority based on th landing ensures that the actual economic price is paid for the fish, thus eliminating earned at a landing cost can be allocated for sustainable fisheries or marine conser
20	Fisheries licensing fee	Revenue from biodiversity services and ecosystems explicitly linked to these resour licenses for ships, access to fish in certain locations, fishing, fishery association cost tion is often part of the local licensing system but lacking for international licenses. included such as port licenses, general ship licenses, and so on. License for fishing v consideration because it has a major impact on fishing potential of fishing vessels.
21	Fisheries quotas (catch limits)	To reduce the total catch of wild fisheries to levels that are biologically and econom quotas for catches. Ideally, the cap should be set at a level that enables optimal ecc tion considerations. Quotas are specified in tons or numbers and broken down by t systems allow quotas to be sold, auctioned or distributed at no cost and then quota (tradable quotas). Revenues generated from quota sales can be allocated to suppor vation.
22	Government allocation funds	Allocation funds from the government budget (eg APBN, APBD).
23	Green microfinance	As microcredit development programs, they will provide opportunities to fund sma biodiversity conservation, and local economic activities.
24	Impact Investing	The impact investing is the practice of putting money into a business or nonprofit, i ronmental change, along with financial returns. Somewhere between investing for investments as investments intended to return principal or generate profits and als resources and ecosystems- in particular, reduce pressures on critical ecological resc critical habitats. Example: NatureVest. NatureVest raises money from high-value ins care about the environment but want to get their investments back, perhaps with r a conservation project- land acquisition, sustainable livestock, green infrastructure so as to repay its investors.
25	Mooring Fees	Fees charged for marine vehicles to moor within or near a protected area.
26	Official Development Assis-tance (ODA)	ODA as a suggestion to assist developing countries and poor countries in order to in nical and financial assistance, and other assistance related to the needs of recipient the global benefits arising from sustainable management of biodiversity resources. through ODA and the main objectives of biodiversity can be ensured and / or comb climate adaptation.
27	Payment for Ecosystem Services	Ecosystem service beneficiaries, such as water regulations, make direct or indirect p for service and maintenance. The concept of "user pays" is that anyone who mainta should be paid to do so. Ecosystem service beneficiaries / users may make direct pa private contracts or indirect payments through State intermediaries that charge use ecosystem services are mostly found in the water, forest, agriculture and energy sec ronmental Services".
28	Pesticide Tax	Pesticide tax aims to reduce the use of pesticides or the risks associated with the us
29	Promotion of Sustainable Tourism	Responsible for travel to natural areas, can provide an alternative source of income and the welfare of local communities. Receipts from tourists include accommodatio country where they travel. Governments benefit from direct and / or indirect taxes. through an enabling legal framework and direct or indirect incentives is essential in drive tourism investment toward sustainable tourism infrastructure and activities.

ernments to jurisdictions according to rvices means developing a conservation o reward investments in conservation and					
d owners to manage and / or sustainably or support the participation of land					
-provided labor, or professional services ct's equity investment, which reduces g is that it is the risk capital in which the rticipation on the positive side and the for accepting the risk, investors are also					
e environment.					
he number of fish caught. The cost of the incentives for overfishing. Money vation activities.					
ces. National and international fisheries s, etc. Acquiring local revenue or reten- Permits related to "fishing" may also be vessels "supporters" is also an important					
nically viable, authorities may introduce nomic outcomes along with conserva- ype and method of fishing. Some quota as are also allowed to float on the market rt sustainable fisheries or marine conser-					
ll scale businesses or activities related to					
n the hope of generating social or envi- profit and donations. Conservation impact o promote positive impacts on natural ources and / or conservation or increased stitutions and high-value individuals who modest rewards. Then invest the money in or ecotourism- that can generate money					
ncrease economic activity, through tech- t countries. Tapping ODA is justified given High-volume resources can be generated ined with relevant programs such as					
payments to the service provider in return ains or maintains ecosystem services ayments to the service provider through ers through taxes or fees. Payments for ctors. Also known as "Payment for Envi-					
se of pesticides.					
for the conservation of protected areas on and catering as well as expenses in the . The promotion of sustainable tourism the early development phase and can					

30	Trust Fund/ Protected Areas Trust Fund	Trust Fund is the amount of financial asset that can be a property, money, securities (trustor / donor) is entrusted or submitted for good governance by a trustee and di Beneficiaries in accordance with the mandated goals and objectives. Environmenta and investment vehicle to help mobilize, integrate and oversee the collection and a ronmental purposes. This is a state-based solution that facilitates strategic focus , ro ing and evaluation, and high levels of transparency and accountability. This term inc trusts, climate funds, forest funds, marine funds, and other funds established to pro economics. The Environmental Trust Fund was founded un financing and support o protected areas or entire protected areas. Funds may be local, national, or includin
31	Revolving fund scheme	Revolving Fund that managed by Trust For Nature (Victoria) involves a provision for conservation significance that can have agreements established to ensure the futur vation values, as well as potentially attractive to private ownership after disposal. Th similar funds operated by the US Nature Conservancy and the Royal Society of Brita the Trust for Nature was established through government law and supplemented w funds from non-government sources. Revolving Funds as a concept which involves law agreement to protect conservation value, and resale to sympathetic buyers. Wi relatively low overall cost, this revolving fund allows for the establishment of privat by private landholders. In Australia the concept is still in its infancy, but has great po experience can be an accurate guide. The Clean Water Country Rolling Fund, autho low-cost financial assistance for the planning, acquisition, design and construction o infrastructure.
32	Grant/ Small Grant Financing	Donated funds by donors that do not need to be repaid.
33	Social Impact Bond	Social Impact Bond is a new tool for governments to accelerate social innovation ar Introduced by the UK-based NGO, Social Finance, the concept calls for financial inte contracts to obtain social services by issuing bonds to private investors providing in only pays the organization of the bond issuer if performance targets are achieved.
34	Sovereign Wealth Funds	State-owned investment funds formed from balance of payments surplus, foreign o These funds usually invest in capital and equity markets that are set to achieve mar criteria can be oriented towards green financing.
35	State budget	The overall state budget has declined in real terms since the country became indep able to government ministries, including for salaries. The activities proposed in the changes, will require review, and the likelihood of improvement, of budget allocatio of biological resources in relation to sustainable development. The importance of b social development, needs to be reflected in the way conservation income is raised
36	Tarrifs, fees and taxes in the water sector	These categories include general and local taxes and special charges charged in retu wastewater bills, property valuations, costs to improve water quality and developer water infrastructure, etc.
37	Taxes and fees in the tourism sector	The collection of taxes and fees (or comparable instruments such as sale or auction or tourism sectors can provide conservation financing for conservation either throu ing agreements with the community, or receiving pre-designated transfers from the on individuals entering ecotourism conservation areas.
38	Taxes, fees and quotas in the fishery sector	Taxation of the fisheries sector and / or the introduction of fees and quotas can pro and also affect the market behavior to achieve biological and economical levels of f ing).
39	Tourism, real estate and commercial concessions	The fee charged for licenses to open or run a business in a protected area, eg hotel to open a business may also be auctioned Categories also include fees charged for lines, communications infrastructure, pipelines, etc.
40	Travel philantrophy fund	Creative participating businesses apply fundraising techniques such as collecting th dies for overnight stays, or just making annual contributions to the IMF. For exampl above $ 25. After funds are collected, they all follow the same path: 1. Tourism busi deposit with non-profitt fund administrators 2. Each year funds are distributed equ 3. The project uses funds to improve destinations around Oregon 3. The project use Oregon.
41	Wastewater fees	When separate from water costs, wastewater costs include the cost of disposing of cost recovery and may include differential costs for private and commercial users. T may include some costs of economic damage.

s (trust) that by a person or institution stributed or utilized for the benefit of l Trust Fund is an independent legal entity llocation of financial resources for envi- obust project management, solid monitor- cludes conservation trust funds, wildlife ovide environmental, social benefits and f individual protected areas, grouping of g some countries.					
funds for the purchase of land with e maintenance of identifiable conser- hese funds are unique and distinct from ain for the Protection of Birds because ith some public funds but also withdraw the purchase of land, the adoption of a ith access to adequate capital, and at a e conservation reserve systems managed otential if the Trust for Nature (Victoria) rized by the Clean Water Act, provides of wastewater, reuse, and stormwater					
nd improve government performance. ermediaries to facilitate government itial capital as illustrated. The government					
currency operations and other transfers. ket returns. Their investment policies and					
pendent, and this limits the funding avail- BSAP, coupled with other institutional ons. This needs to reflect the importance iological resources for economic and and distributed.					
urn for a service, such as water and s who can fund the rehabilitation of					
of concessions) from the tourism and / gh maintenance costs, production shar- e central government. The fees imposed					
ovide for existing conservation financing fish and crop stocks (ie to reduce overfish-					
, restaurant or community shop.The right private homes, road rights for power					
eir bills, adding donations without subsi- e all donations are deducted from taxes inesses collect donations from visitors and ally to seven recipients regional projects es funds to improve destinations around					
basic waste and wastewater intended for he cost of a waste water discharge permit					

42	Water abstraction charges	Most places do not charge for simplifying water from lakes, rivers and underground this service. Increased overexploitation of water sources leads to increased interest waste and improve regulation and measurement. When water abstraction is set, th supply market.
43	Water Conservation Grant	Water Conservation Grant is designed to promote sustainable water use and to imp There is an agency that manages grants earned Grants are to enable households to approach to water and wastewater usage. stairs are encouraged to provide grants c water-saving appliances, repair leaks or improve drainage systems, test or improve wells, or to serve or dispose of sewage from septic tanks. There will be no audit of h not be asked for submission).
44	Water conservation loan	For example the TWDB's Agricultural Water Conservation Program was expanded a by 78 Texas Legislature. Under the new consolidation program, TWDB can provide a statutory and lender sectors eligible for use either for repair of their facilities or as l savings loan program for individuals to access TWDB funds through participating lo banks.
45	Water markets	The water market requires the possibility to sell / buy water access rights (or water Africa, Australia, Iran and the Spanish Canary Islands have established a water tradi that trade can encourage the allocation of water rights more efficiently among high has been linked to the context of increasing scarcity and demand for water, such as States.
46	Water quality markets	Various market mechanisms have been developed or are being tested under a "cap (excess Nitrogen, Phosphorus), water temperature (for sensitive fish habitats), and
47	Water tarrifs	Also called "water rate", costs are collected through water utilities and other water includes households, businesses and may include irrigation. Tarrifs are a cost recove water treatment, storage, transportation, wastewater recovery and treatment, and content does not include maintenance and protection costs of watersheds and thes tional financing for biodiversity. Tarrifs can be arranged (often by utility commission cost recovery, capture increased compensation from commercial operations, drive goals.
48	Debt-for-Nature Swaps	Through a debt restructuring agreement, the government can remove some of its f channeled into domestic conservation initiatives and climate adaptation programs. a conservation trust fund to disburse funds. Debt-for-nature swaps can target offici common schemes.

Form 2: Scoring Guidance

Criteria	Sc
Impact on biodiversity	(4) Very high impact on threatened/endangered species and habitats and critical ecosystem services. (3) High impact on biodiversity and ecosystem services. (2) Moderate impact on biodiversity and ecosystem services. (1) Low impact or high uncertainty about the same. (0) No or insignificant impact.
Financial Impact	(4) Potential to mobilize or save a very high amount of resources. A significant impact on the biodiversi (3) Potential to mobilize or save a high amount of resources. Indicatively 15 per cent of current expend (2) Potential to mobilize or save a moderate amount of resources compared to existing expenditures or (1) Potential to mobilize or save a low amount of resources compared to existing expenditures or needs. Indicatively under 5 per cent of current expenditures or needs. (0) Minimal scale of resources mobilized or saved if compared to current expenditures or needs.
Likelihood of success	(4) Very high likelihood of success. Broad based political and social support and/or sound commercial v scalability in comparable contexts. (3) High likelihood of success. Sufficient political and social support. Commercially viable (if relevant). C (2) Moderate likelihood of success due to limited political or social support or known operational or tec parable contexts. (1) Low likelihood of success due to high political or social resistance or major operational or technical (0) Virtually no chance of success under current conditions. Commercially unviable (if relevant).

l sources but some countries charge for t in water abstraction costs to reduce ere is a greater opportunity for the water					
prove water conservation in households adopt a more environmentally friendly on home conservation measures such as water quality if households have private how households use grants (receipts will					
s a result of the Senate 1053 bill passed agricultural water conservation loans to loans to individuals. Provide an individual cal government depository and credit					
rights). The United States, Chile, South ng scheme. The economic argument is / low users. Their recent establishment drought in Australia and the United					
and trade" system that includes nutrients sediment loads.					
suppliers to a consumer population that ery mechanism and targeted to pay for administration costs. Much of the water se changes can result in significant addi- s or government regulators) to enable efficiency, and other social or financial					
foreign debt. The savings earned will be This often requires the establishment of al and commercial loans, and the most					

oring Guidance
ty finance agenda. itures or needs. r needs. Indicatively between 5-15 per cent of current expenditures or needs.
iability (if relevant). No major operational challenges known. Good records or expectations of success, replicability or Operational challenges are manageable. Relevant records of success, replicability or scalability in comparable contexts. chnical barriers. Limited commercial viability (if relevant). Limited records of success, replicability, or scalability in com- barriers. Limited commercial viability (if relevant).

Form 3: Rapid Screening - Marine

Parameter	Score Scale	Improvement the compilation and information of biodiversity (database)		Developing of ecotourism attraction				Water management and conservation	
		State Budget	Aid Coordination	PPPP (Public Private People Partnership)	Tourism Fees (Photos Safari, User Fees, Rare Species Fee, Price Discrimination)	Payment for Ecosystem Services	Green Islamic Bonds	Tariffs, Fees and Taxes in Water Sector	Wastewater Fees
Is there a positive record of implementation?	1= no, or limited records of success 3= successful pilots 5= yes, high potential of scalability								
Will it generate, leverage, save, or realign a large volume of financial resources?	1= minimal scale 2= <5 per cent of current expenditures/needs 3= 5-15 per cent of current expenditures/needs 4= >20 per cent of current expenditures/needs 5= game changer								
Will financing sources be mobilized in a compatible timeline with needs?	1 = no, the mobilization is not aligned with needs 3 = likelihood of being mobilized in alignment with needs 5 = yes, forthcoming and compatible schedules								
Will financing sources be stable and predictable?	1 = no, the source of revenue may be highly unstable and vulnerable to external factors 3 = likelihood of being reasonably stable and predictable source 5 = yes, very stable and predictable								
Do the persons or entities paying have a willingness and ability to pay or invest?	1 = no 3 = possibly 5 = yes								
Are the financial risks adequately managed (e.g. exchange rate, lack of investors, etc.)?	1 = no, high risks remain 3 = moderate risks 5 = yes, low residual risks								
Are start-up costs onerous in comparison to the expected financial returns?	1 = very costly (compared to returns) 3 = moderate (compared to returns) 5 = very low/minimal (compared to returns)								

Action Plan and Alternative Finace Scheme													
Restoration and enhancing the marine conservation area				Enhancement in protection of endangered, vulnerable, and threatened species						Restoration the ecosystem of land conservation			
State Budget	Grant	Green Islamic Bonds	Eco-logical Fiscal Trans-fer	Debt For Nature Swept	Fisher-ies Li-censing Fees	Crowd-funding	Rare Species Fee	Green Islamic Bonds	Eco-logical Fiscal Trans-fer	CSR	Green Islamic Bonds	Eco-logical Fiscal Trans-fer	Biodi-versity Offset

Does the solution improve incentives to manage biodiversity and ecosystems sustainably?	1 = not clear 3 = likely 5 = most certainly								
Will the financial resources remain targeted to biodiversity over time?	1 = not clear, high risk of misallocation 3 = likely, administrative provisions 5 = yes, strong legal provisions								
Are risks to biodiversity (e.g. disrespect of mitigation hierarchy) low or easily mitigated? How challenging would it be to develop safeguards?	1 = high risks, no easy mitigation 3 = reasonable risks, mitigation possible 5 = low risks, easy safeguards								
Will there be a positive social and economic impact (e.g. jobs, poverty reduction and cultural and gender equality)?	1 = no 3 = moderate 5 = strong positive impact								
Have risks of significant unintended negative social consequences been anticipated and managed?	1 = no, high risks remain 3 = moderate and manageable 5 = yes, minimal residual risks								
Will it be viewed as equitable and will there be fair access to the financial and biodiversity/ecosystem resources?	1 = no, risk of inequitable outcome 3 = maybe 5 = yes								
Is it backed by political will?	1 = no, resistance from key stakeholders 3 = maybe 5 = yes, with public statements in support								
Have political risks been anticipated and managed?	1 = no, high risks remain 3 = moderate and manageable 5 = yes, minimal residual risks								
Do the managing actor(s) have sufficient capacity? Can they rapidly acquire it?	1 = no, severe capacity gap 3 = moderate capacity gap 5 = yes, strong capacity								
Is it legally feasible? How challenging will any legal requirements be?	1 = no, new law is required 3 = new regulations required 5 = yes, new regulations are not needed								
Is it coherent with the national plan and can synergies be achieved with the overall national plan?	1 = no, limited or no synergies/coherence 3 = potential synergies 5 = yes, fully coherent/large synergies								
Total Score									

ANNEXES

ANNEXES V: Proposals for Biodiversity Finance Solutions

Sub Activity of Action Plan	Proposed Financial Solutions	Description	
Improvement the compilation and information of biodiversity (database)	State Budget	The budget for research and database of biodiversity in APBN is still limited, so it needs to be improved and coordinated with the parties so that budget for this purpose is not excessive or even redundant for the programs implemented.	The gov Stat acc reg The Tec bec in 2 bio
	Aid Coordination	Coordination of aid as one of the key mechanisms to improve the effectiveness of funding assistance. Aid coordination has been mostly used for humanitarian, social and health assistance. Therefore, the aid coordination here is an aid that aims to improve research on biodiversity in Indonesia.	For coo dor nat exp in I Aid inte fun For the

Pros	Cons
e source is clear because it comes from the vernment. te budgets are a stable, predictable, and easily essible source of funding in the event there are ulatory arrangements. e government through the Ministry of Research and hnology wants to increase Indonesia's research to ome more qualified by increasing research funding 017. However, this research is still limited to diversity research.	APBN allocation for research fund is only 0.1%. Central government expenditure from the APBN for the environment is only 0.9% in 2015 and 1% in 2017. In addition, this limited budget has not been widely distributed for research, compilation, and information on biodiversity. Biodiversity is still not a government priority program. Therefore, the use of budgets for conservation and biodiversity is uncertain, as the government puts priority spending on other priorities, such as infrastructure development and so on.
the government, improving coherence and rdination of aid is seen as a way of enhancing nor contributions and ensuring their use for ional goals. Thus, with the aid coordination is ected to increase funding for biodiversity research ndonesia. coordination accommodates funding from rnational donors, which is expected to increase ding for biodiversity research in Indonesia. donors, coordination offers the potential to ensure effective use of their resources.	It is difficult to evaluate against a criterion. Coordination of aid should be assessed taking into account the broader context in which they operate. More stable and binding arrangements are deemed necessary to ensure and stabilize external support and ensure smooth and effective transactions between donors and recipients. If coordination does not work effectively, the targeted program may not be achieved. Aid coordination to fund biodiversity research is feared that the results of research and confidential biodiversity information may will be used and exploited by donors from other countries, thereby threatening the utilization of biodiversity in Indonesia. In this case, the contract and initial agreement of the aid coordination shall be clearly stated and shall not harm either party. Much of the academic literature of the 1980s and early 1990s are often results from the analysis of specific bilateral and multilateral activities in low-income countries, concludes that aid does not always achieve its objectives, in part, due to lack of coordination between donors and between donors and recipients.

Sub Activity of Action Plan	Proposed Financial Solutions	Description	
Improvement the compilation and information of biodiversity (database)	Bioprospecting	Bioprospecting is a systematic search for biochemical and genetic information in nature to develop commercially valuable products and applications. Bio-prospecting is a systematic collection, research, and utilization of genetic and biological resources for resources, sources, genes, organisms, and other natural products for scientific and / or commercial purposes. (Direct financial benefits can be used for conservation, in addition to royalty). Bio-prospecting is 'exploring biodiversity for commercially valuable genetic and biochemical sources' (CBD, 2000b). However, the definition varies within countries, with some narrow bioprospecting definitions involving only the search for valuable genetic material, while others include the development and application of such materials. Bioprospecting has been implemented in Indonesia, but it has not been formally done yet and there is no regulation or regulatory law.	Bio con losi exti Pro bet inve Loc pot ince bio Pro dev pro Hel red
Development of ecotourism attraction	Tourism Fees & Commercial Advertisement	Tourism fee is a fee imposed on individuals entering the conservation area of ecotourism. Policies on this tourism fee can be entrance fees, safari photos, user fees, rare species fee, price discrimination. While commercial advertisement is a marketing campaign to promote ecotourism so people are interested to spend money to go to the ecotourism area.	Ent dist as c dev Am use fun pro fee dev reg Cor eco and

[1] https://taghfirin.wordpress.com/2014/07/20/entrance-fee-tiket-masuk-raja-ampat/

Pros	Cons
prospecting creates incentives to monitor and nserve biodiversity in order to avoid the risk of ng economic opportunities from competitors or inction. mote technology transfer and knowledge ween countries simultaneously with foreign direct estment. al residents will be increasingly aware of the ential economic value of natural habitats, providing entives to the domestic population to conserve diversity. moting innovation, helping the country in veloping new pharmaceutical products or natural ducts. ps preserve traditional culture and customs by iscovering ancient practices.	Bioprospecting is time-consuming and high risk in terms of expected returns; Even the most advanced legal framework often fail to offer sufficient protection to traditional knowledge; The Nagoya Protocol coverage is still limited, increasing the risks of biopiracy from non-signature countries. Legal rules and frameworks often fail to provide adequate protection against traditional knowledge. There is a risk of biopiracy. Implementation of bioprospecting in Indonesia has not been done formally and there is no regulation or regulatory law.
rance fees from a conservation area can be directly tributed and used for conservation funds, such conservation, protection and conservation area velopment. As entrance fees are charged to the Raja pat conservation kawasa. These Entranve fees are d for Raja Ampat's coastal and marine conservation ds, including the construction, conservation and tection of Raja Ampat conservation areas. Entrance s are also used to fund community welfare velopment around Raja Ampat.[1] In addition, the ulation of tourism fees is also clear. mmercial advertisement makes people aware of the tourism area in Indonesia and attracts them to visit l spend money to visit it.	Can not be the only finance sources, because the amount of funds generated is not much. Commercial advertisement is costly.

Sub Activity of Action Plan	Proposed Financial Solutions	Description	
Development of ecotourism attraction	Zakat, Infaq, Shahaqah, Waqf (ZISWAF)	Zakat, infaq, and shadaqah here are dedicated to the underprivileged communities around ecotourism areas who do not have the capital to expand their business in the form of microfinance. While the waqf is intended for the development of infrastructure needs of ecotourism areas.	Opt and mos gov Fun fun The bec
	Impact Investment (Green Islamic Bonds)	Impact investment is the practice of putting money into a business or nonprofit, in the hope of generating social or environmental change, together with financial returns. Somewhere between investing for profit and donations. Conservation impact investments as investments intended to return principal or generate profits and also promote positive impacts on natural resources and ecosystems - in particular, reduce pressures on critical ecological resources and / or conservation or increased critical habitats. Example: NatureVest. NatureVest collects money from high-value institutions and high-value individuals who care about the environment but want to get their investments back, possibly with a simple reward. Then invest the money in a conservation project - land acquisition, sustainable livestock, green infrastructure or ecotourism- that can generate money so as to repay its investors. The impact investment is Green Islamic Bonds. Green Islamic Bonds here can be an investment for the development of ecotourism areas, both infrastructure facilities that exist in ecotourism areas and habitat conservation contained therein (as intended for the project on Green Islamic Bonds issued)	Imp the exc tha retu and bio eco Gre wit Pro cap Can sec

Pros	Cons
timizing the funds coming from the private sector l the community, because so far in Indonesia st of the funding of biodiversity comes from the vernment. ading risk from ZISWAF is low, as it is a voluntary d. e ootential of ZISWAF in Indonesia is very high, ause the population is mostly Moslem.	The ZISWAF concept for ecotourism areas has not been implemented before.
pact investment through Green Islamic Bonds shifts paradigm that market investments should focus lusively on achieving financial returns, assuming t these investments besides generating financial urns indirectly engage people in environmental l social impacts such as enhancing conservation diversity and economic improvement of otourism areas. een Islamic Bonds has the potential to compete h other financial instruments. vide a new way to allocate public and private ital more efficiently and effectively. facilitate cooperation between public and private tor actors.	Can result in higher transaction costs compared to venture capital investment or other investments. Green Islamic Bonds in Indonesia is not widely known by the public. It would be difficult to find ecotourism projects to be funded by Green Islamic Bonds, as the requirements set out in Green Islamic Bonds are sharia-compliant projects and have an impact on the environment.

Sub Activity of Action Plan	Proposed Financial Solutions	Description	
Water management and conservation	Tariff/fee/tax for water	Land and water surface taxes are regulated under Government Regulation No. 121 of 2015 on Water Resources Management and Law no. 34 year 2000 stating that the activity of water utilization may be subject to Tax of Collection and Utilization of Surface Water and Surface Water collected by Provincial Government. In Jakarta, the tax on harvesting and utilization of groundwater is regulated in governor regulation number 38 of 2017 concerning the collection of ground water taxes, which fall into local revenue. This groundwater tax is subject to the recording of the Water Meter (ie activities carried out by inspection and recording of the debit register to determine the volume of water taken in the framework of groundwater control and the issuance of the Local Tax Assessment Letter). [2] Water tariffs are referred to as "water rates", the costs collected through water utilities and other water suppliers to a consumer population that includes households, businesses and may include irrigation. Tarrifs are a cost recovery mechanism and targeted to pay for water treatment, storage, transportation, wastewater recovery and treatment, and administration costs. Much of the water content does not include maintenance and protection costs of watersheds and these changes can result in significant additional financing for biodiversity. Tarrifs can be arranged (often by utility commissions or government regulators) to enable cost recovery, capture increased compensation from commercial operations, drive efficiency, and other social or financial goals.	Tax ent util eac the

[2] http://bprd.jakarta.go.id/pemungutan-pajak-air-tanah/

Pros	Cons
es on the utilization of water imposed on repreneurs / private entrepreneurs who take and ize water for their business can be optimized in ch province or districts / municipalities, because re have been laws and regulations regulating.	According to a study by researcher of the Badan Kebijakan Fiskal, if the water supply company is subject to VAT, both upstream and downstream companies (in every production line) will exacerbate the development of drinking water supply in Indonesia, thus only optimized water taxes and user charges.

Sub Activity of Action Plan	Proposed Financial Solutions	Description	
Water management and conservation	Wastewater fees and pinalties	Different and separate with water fees, wastewater fees include the cost of disposing of basic waste and wastewater that are intended for recovery costs and may include differential costs for private and commercial users. The cost of a waste water discharge permit may include some costs of economic damage. While penalties are imposed when waste water discharged by private parties exceeds the threshold.	Car eith pro tha lake Car env
Restoration and enhancing the marine conservation area	Debt for nature swap	Through debt restructuring agreements, governments are able to write off a proportion of their foreign held debt and instead direct payments into funds to support domestic conservation initiatives.	It is and gov exp Deb can larg swa Deb env fun Car esp fun

Pros	Cons
h have a positive impact on the water environment, her in the form of control of water pollution and vide a deterrent effect against people / institutions t throw garbage into the waters, such as rivers, es and so on. h control the amount of waste coming into the vironment.	The lack of awareness of the parties in the implementation of wastewater fee and penalty.
s a potential funding mechanism for the recovery d management of conservation areas, reduces vernment debt, and can undermine excessive loitation of natural resources. bt Nature Swap can be used for conservation. They be used as a mutual fund or appropriate fund for ger conservation efforts. Similarly, successful debt aps can lead to interest among other donors. bt Nature Swap can stimulate the creation of an vironmental trust fund that conducts long-term ding for conservation. h promote the participation of civil society, ecially when local NGOs or environmental trust ds are among the beneficiaries.	There are several obstacles in debt conversion: availability of debt at a discount sources of funds political obstacles in the debtor country risk: devaluation, inflation and no-pay high transaction costs to manage transactions Ability to absorb conservation projects potential "round-tripping" The mechanism of debt for nature swap is quite complicated and still difficult to negotiate. Negotiations can take time, which spans several years (one or three years) and may result in reduced debt or a limited discount rate. Transaction costs may be high compared to other financing instruments. If the creditor or environmental organization (granted the rights by the creditor) imposes an environmental conservation program that harms the country's natural resource owner, then the debt-induced country will lose its sovereignty in the management of natural resources.

Sub Activity of Action Plan	Proposed Financial Solutions	Description	
Restoration and enhancing the marine conservation area	CSR	CSR helps companies live up to their responsibilities as global citizens and local neighbours. A coherent CSR strategy, based on integrity, sound values and a long-term approach, offers clear business benefits to companies and a positive contribution to the well-being of the society and planet; CSR include both business process reengineering as well as the funding of charitable activities, both of which could be directed towards the protection of biodiversity.	Opt sect of b Fun KLH for reh
Enhancement in protection of endangered, vulnerable, and threatened species	Environmental Trust Fund	Trust Fund is the amount of financial asset that can be a property, money, securities (trust) that a person or institution (trustor / donor) is entrusted or handed over to be properly administered by a trustee and channeled or utilized for the benefit of the beneficiary Beneficiaries in accordance with the mandated intent and purpose. The Environmental Trust Fund is an independent legal entity and investment vehicle to help mobilize, integrate and oversee the collection and allocation of financial resources for environmental purposes. It is a country-based solution that facilitates strategic focus, rigorous project management, solid monitoring and evaluation, and high levels of transparency and accountability. This term includes conservation trust funds, wildlife trusts, climate funds, forest funds, marine funds, and other funds established to provide environmental, social and economic benefits. Environmental trust funds are established for the financing and support of individual protected areas, grouping of protected areas or entire protected areas. Funds may be local, national, or cover multiple countries.	Env fun Goo The acc of e imp Red tran

[3] http://www.mongabay.co.id/2017/04/24/begini-rekomendasi-untuk-pelestarian-ekosistem-mangrove-dunia/

Pros	Cons
imizing the funds that come from the private tor, because so far in Indonesia most of the funding iodiversity comes from the government. ding risk from CSR is low. K together with related agencies to coordinate 10% CSR funds can be channeled for mangrove abilitation.[3]	Private CSRs are limited to funding costs for surveys and training for marine conservation areas, not to fund the operational costs of protected areas. The absence of CSR standardization, unity of terms, concepts, forms about CSR in government regulations.
ironmental Trust Fund is a long-term investment ding. od financial risk management. Environmental Trust Fund can improve ountability so that conservation and protection ndangered species can be achieved and fully lemented. uce the cost of financial and operational nsactions by generating economies of scale.	The initial phase of the Environmental Trust Fund is a long and often politically handled process.

Sub Activity of Action Plan	Proposed Financial Solutions	Description	
Enhancement in protection of endangered, vulnerable, and threatened species	Crowdfunding	The practice of securing funding for a project or business venture by a dispersed group of people, the crowd. It takes places via online platforms that connect the investor or the donor with the project owner without the intermediation of a financial organization. Different platforms coexist: philanthropic rewards-based where individuals support campaigns and receive some kind of reward in return; donations-based where there is no expectation to receive a tangible benefit; equity-based where individuals invest and receive equity-like shares in return; and lending-based where individuals lend money and expect the repayment of a principal with or without interest.	Acc inte so i pro Cro larg mar
	Rare Species Fee	Fee charged to rare species conservation area.	The imp con spe and con Fee cos cult
Restoration the ecosystem of land conservation	CSR	CSR helps companies live up to their responsibilities as global citizens and local neighbours. A coherent CSR strategy, based on integrity, sound values and a long-term approach, offers clear business benefits to companies and a positive contribution to the well-being of the society and planet; CSR include both business process reengineering as well as the funding of charitable activities, both of which could be directed towards the protection of biodiversity.	The of t pro eco

[4] https://bataktoday.com/csr-bank-sumut-program-pemulihan-ekosistem-kawasan-danau-toba

Pros	Cons
ess to financing sources is easy because it uses the ernet that everyone can participate in, even more f these funds are used for the preservation and tection of endangered species in Indonesia. wdfunding is rather powerful because remarkably ge amount of money can be accumulated when ny contributors support an initiative.	Difficult to measure the risk because it is too customized, so it can not be equated. No crowdfunding related regulation yet.
e obvious funding sources and potential fee-posed participants are numerous because they ne from visitors who come and see rare animal cies, who are willing to pay to see these species l are based on a heightened sense of awareness in serving endangered species. for this rare species can be directly used for the t of nursing, preservation, protection, and the tivation or breeding of rare species.	Even though the potential participants are charged this fee a lot, but like a tourism fee, rare species fee can not be the only finance sorces, because the amount of funds generated is not much, because it could be in season and time certain visitors from rare species is not much.
e private sector may be involved in the restoration he terrestrial ecosystem, for example CSR vided by one of the banks in North Sumatra for the system restoration of Lake Toba.[4]	There is no specific regulation on CSR for the benefit of the restoration of terrestrial ecosystems, there are only regulations related to the company's obligations to take responsibility for social and environmental issues.

Sub Activity of Action Plan	Proposed Financial Solutions	Description	
	Biodiversity Offset	Measurable conservation outcome resulting from the compensation for significant residual biodiversity loss arising from project development after appropriate prevention and mitigation measures have been taken. Offsets can, for example, deliver biodiversity benefits (e.g. reforestation) through a transaction, where offset sellers (e.g. a conservation NGO) sell offsets to developers (e.g. a mining company) who seek to compensate the residual biodiversity loss resulting from a development activity (e.g. mining).	Gov poll in c con Gov env eco the The / in con Bio resp risk to c dan
	Green Islamic Bonds	Sharia investment instruments whose use aims to provide solutions for environmental climate change.	Inve con Gre fina eco ava

Pros	Cons
vernments can align environmental impacts with uter pays and involve the private sector, not only onservation financing, but also in implementing servation solutions. vernments can allow development in sensitive ironments while ensuring no net loss from system services and biodiversity and still benefiting economy from development. flow of biodiversity can form a compensation centive system to encourage companies to tribute significantly to biodiversity conservation. diversity Offset is a means to apply corporate social ponsibility as well as tools for managing corporate associated with biodiversity (eg impact on license perate, project delays, access to land, reputation nage, etc.)	The designed offset scheme could be flawed. Biodiversity considerations should not incentivize developers to skip the steps in the mitigation hierarchy and thus indirectly provide incentives to destroy the ecosystem
estors get return from the funding of a servation ecosystem restoration project. en Islamic Bonds can accumulate substantial ncial resources to support a land conservation system restoration project that may not be ilable.	Lack of consensus on what constitutes the green requirements of the land conservation ecosystem restoration project, leading to a source of uncertainty when assessing long-term investment options. Retail investment is still limited because Green Islamic Bonds is not well integrated into mainstream funds, indexes and other products. The costs of issuance of Green Islamic Bonds may be lower in the future.

Sub Activity of Action Plan	Proposed Financial Solutions	Description	
EFT for Ecological Conservation		Optimizing government fiscal schemes. The local government has the authority to manage the conservation area. Internalize the positive externalities resulting from conservation programs that are not compensated by the central government. Allows the establishment of new protected areas due to increased budgets (fiscal incentives), thus counteracting (negative) incentives to reduce natural land for agriculture, industry and construction to generate income from property / income taxes. Changing local people's perceptions of the benefits of conserving vital ecosystems and opportunities to compensate local jurisdictions for conservation.	The regu Nee Beca over prot be r of n tran If tra ultir resc proj expe the

Pros	Cons
politically and administratively difficult due to ulation. d readiness from local government. ause transfers are a consistent proportion of rall income, when local jurisdictions expand tected areas, the impact of such incentives can educed. Transfers will be diluted, as the creation ew protected areas will reduce the amount sferred per unit area. ansfers are not allocated for conservation, the mate impact will depend on how additional ources are used, for example in the worst case, on ects that could compromise biodiversity. Lack of enditure transparency is an obstacle in evaluating impact of the instrument.	

Bekerjasama dengan:

Dibiayai oleh: