

THE BIODIVERSITY FINANCE PLAN

The Biodiversity Finance Initiative (BIOFIN) - Thailand

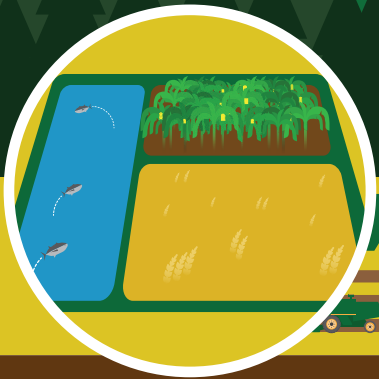


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EXECUTIVE SUMMARY



BIOFIN



EXECUTIVE SUMMARY



Thailand is endowed with a rich ecosystem and biodiversity which are important to the livelihoods of local communities and for national development. Key sectors of the economy including agriculture, forestry and tourism (collectively contributing 20 to 30 percent of GDP), are dependent on sustainable management of the country's natural resources. Investments in preserving Thailand's biodiversity is clearly aligned with the 20-year National Strategy (from 2018- 2037) in order to ensure that the country achieve its vision of becoming "a developed country with security, prosperity and sustainability in accordance with the Sufficiency Economy Philosophy".

However, Thailand is facing multiple challenges such as persisting income inequality which is exacerbated by economic shocks (such as the outbreak of COVID-19), technological disruption and rapid urbanization. At the same time, current unsustainable practices, impacts of climate change and biodiversity loss threatens nature's capacity to contribute to Thailand's economic growth and wellbeing. Against this backdrop, biodiversity finance must be introduced into mainstream policymaking, as investing in the biodiversity and the preservation of ecosystems will provide the foundation for the country's progress towards achieving the Sustainable Development Goals (SDGs).

In the spirit of "leaving no one behind", Thailand has established a framework for

national sustainable development as part of the 20-year national strategy linked to SDG 14 – Life below water, and SDG 15 – Life on land. The country is moving forward with the implementation of its biodiversity finance strategies within the process of drafting its first Biodiversity Act. For Thailand, the financial resources necessary to satisfy the priorities for biodiversity conservation articulated in the National Biodiversity Strategy and Action Plan (NBSAP) are substantial. Current funding levels for biodiversity conservation initiatives have been found to be insufficient and Thailand will need to invest at least US\$942 million (THB31.977 billion) between 2019 and 2021 to adequately restore ecosystems and biodiversity resources.

The Royal Thai Government holds the largest role in providing financing and improving the sustainable management of biodiversity in the country. In particular, three key government agencies, the Department for National Parks, Wildlife and Plant Conservation (DNP), The Royal Forest Department (RFD), and The Department for Marine and Coastal Resources (DMCR) account for over 80 percent of public biodiversity spending. These agencies will continue to be instrumental to conservation, managing land-use in protected areas and maintaining a healthy marine ecosystem. However, involving other sectors in mobilizing funds, increasing private investment, employing blended financing and other resources through different forms of public-private partnerships is necessary. Such initiatives require interaction with a broad range of actors with different interests, approaches and modes of delivery. It is time for the private sector, producers and consumers alike, to take responsibility and invest to maintain Thailand's unique biodiversity and conserve its ecosystems.

The Biodiversity Finance Plan (The Plan) outlines a set of actions which would help to significantly improve the management and financing of biodiversity conservation in Thailand. The Plan calls for an integrated national approach which builds on the economic and business imperative for scaling up action on biodiversity protection in order to meet national biodiversity goals. Without a concerted effort involving both the public and private sector as well as civil society in the implementation of prioritized biodiversity finance solutions, Thailand will not be able to continue to enjoy the benefits of the ecosystem services generated by its national biodiversity. The Plan is prepared in line with the Biodiversity Policy and Institutional Review (PIR), the Biodiversity Expenditure Review (BER), and the Financial Needs Assessment (FNA) in response to the National Biodiversity Strategy and Action Plan (NBSAP).

Implementing the Plan

The Plan aims to deliver a prioritized set of biodiversity finance solutions which explore new finance mechanisms and ways of creating and supporting new partnerships. These finance solutions aim to capture the breadth of options available, for meeting the four results of biodiversity finance as outlined by The Biodiversity Finance Initiative – BIOFIN: 1) Avoid future expenditures, 2) Deliver better, 3) Generate revenues, and 4) Realign expenditures. The prioritized biodiversity finance solutions in the Plan are complementary and promote a combination of systemic and local sustainable financing, policy changes, and other incentive mechanisms within four thematic areas of intervention. The finance solutions can be summarized as follows:

1. Sustainable Tourism Finance Solution: Increasing industry revenue sources for safeguarding biodiversity and environmental management.

User charges are a common way to secure revenues from the users of biodiversity and ecosystem services. Nature-based tourism destinations such as Koh Tao offer the potential for additional revenue generation through the introduction of user charges in order to address the urgent environmental challenges that the island faces. This financial solution is currently being piloted in Koh Tao where it will help to generate a significant flow of revenue to be used for the purpose of protecting and restoring the health of the island's coral reefs which are a key source of revenue for the island's tourism sector. The user charge will be collected from visitors and reallocated for investments in the restoration of local coral reef ecosystems. The ability to earmark revenue generated from user charges for specific conservation activities will serve to lay the groundwork necessary to support other nature-based tourism sites, non-Protected Areas and national parks in Thailand. This solution is in line with the objectives of the Department of National Parks, Wildlife and Plant Conservation to generate greater tourism-based revenues in the face of insufficient government budget.

2. Wildlife and Protected Areas Finance Solution: Introduction of conservation vehicle license plates to support wildlife conservation in Thailand

Thailand now has more than 37 million registered cars and motorcycles and this number is growing. Cars can be harnessed to save Thailand's wildlife by offering a special conservation license plate at a premium price, car owners in Thailand can contribute directly to wildlife conservation by purchasing. This solution is considered implementable by the Thai Government, as the Department of Land Transport has previous experience

in administrating the distribution of special license plates as well as the collection of fees, such as the sales of 'lucky number' license plates in Thailand. A recent survey showed that over 40 percent of respondents were willing to purchase a conservation vehicle license plate. Accordingly, the finance solution is expected to generate up to U\$11 million per year.

3. Government Budget Finance Solution: Enhancing effectiveness and biodiversity impact of local budgets in Thailand

Local administrative organizations (LAOs) under the Ministry of Interior of Thailand, are undertaking and promoting actions for the responsible stewarding of the country's environment and biodiversity resources. Yet, while LAOs are required to have strategies addressing the conservation of natural resources and the environment, most local authorities lack the resources and expertise to develop and implement comprehensive local biodiversity strategies that are aligned with their budgets and objectives for biodiversity conservation. The aim of this finance solution is to consolidate and/or amend policy guidelines in Thailand to allow LAOs to more effectively incorporate considerations for biodiversity protection into the planning of their activities, particularly through the fiscal budget preparation. Working closely with the main finance and biodiversity actors in Thailand, the solution requires providing technical assistance and capacity development to the LAOs. Overall, the successful adoption of such guidelines will enable LAOs to produce more effective budget justifications and increase the biodiversity impact of local budgets. The necessity of improving existing guidelines is illustrated by the vision of the Royal Plant Genetic Conservation Project under Her Royal Highness Princess Maha Chakri Sirindhorn (RSPG) to train LAOs on sustainable biodiversity management nationwide.

4. Private Sector Finance Solution: Mobilizing the private sector and impact investment in support of biodiversity

With the goal of exploring the potential role of private finance to contribute to the conservation and sustainable use of biodiversity, this thematic finance solution consists of a collection of financial mechanisms. Several biodiversity investment opportunities involving the private sector have been identified, including investment in sustainable management of mangroves through the development of ecotourism and market alternatives such as the establishment of nutrient trading management programs. This solution will also support the launch of a new blended finance platform to scale the impact of biodiversity investment opportunities. Accordingly, this solution aims to develop a biodiversity investment prospectus to stimulate finance, investment and innovation for improved effects for biodiversity.

LIST OF ACRONYMS

BCG Bio-economy, Circular Economy & Green Economy

BEDO Biodiversity-Based Economy Development Office

BER Biodiversity Expenditure Review

BFP Biodiversity Finance Plan

BFU Biodiversity Finance Unit

BIOFIN The Biodiversity Finance Initiative

BOI Board of Investment

CBD The United Nations Convention on Biological Diversity

CSR Corporate Social Responsibility

DLA Department of Local Administration

DLT Department of Land Transport

DMCR Department of Marine and Coastal Resources

DNP Department of National Parks, Wildlife and Plants Conservation

EIA Environmental Impact Assessment

FNA Financial Needs Assessment

FPO Fiscal Policy Office

GDP Gross Domestic Product

GEF Global Environment Facility

LAOs Local Administrative Organizations

MNP Marine National Park

MOAC Ministry of Agriculture and Cooperatives

MONRE Ministry of Natural Resources and Environment

NBSAP National Biodiversity Strategy and Action Plan

NESDC Office of the National Economic and Social Development Council

NESDP National Economic and Social Development Plan

NGO Non-Governmental Organization

ODA Official Development Assistance

OECD Organization for Economic Co-operation and Development

ONEP Office of Natural Resources and Environmental Policy and Planning

PIR Policy and Institutional Review

PCD Pollution Control Department

RFD Royal Forest Department

RSPG The Royal Plant Genetic Conservation Project under Her Royal Highness Princess Maha Chakri Sirindhorn

SE Social Enterprise

SEC Securities Exchange Commission

SEP Sufficiency Economy Philosophy

SET Stock Exchange of Thailand

SDG Sustainable Development Goals

TBCSD Thailand Business Council for Sustainable Development

LIST OF ACRONYMS

TYBN Thailand Youth Biodiversity Network

THB Thai Baht

UNDP United Nations Development Programme

WEFCOM Western Forest Comple

INTRODUCTION : VISION FOR BIODIVERSITY FINANCING IN THAILAND



1. INTRODUCTION : VISION FOR BIODIVERSITY FINANCING IN THAILAND

Thailand is endowed with one of the highest rates of biodiversity in the world and derives substantial benefits from the various ecosystems, landscapes and habitats which support its unique biodiversity. These ecosystems include 15 categories of forest varying from rainforest, evergreen and deciduous to mangroves found along the coastline. Thailand is also home to 15,000 different plant species, representing 8 percent of plant species on earth (CBD, 2017). Coastal and marine areas cover 316,000 km² along the Pacific coast and Indian ocean and host coral reefs supporting over 400 coral species – 10 percent of the world's total (ONEP, 2014)¹.

Thailand derives many benefits from its rich biodiversity. In particular, watersheds, river basins and coastal areas perform a critical environmental role in addition to their significance in supporting livelihoods linked to fishery, recreation and tourism². Similarly, Thailand's historically vast forest coverage has had substantial effects on the sustenance of agriculture and in fulfilling the demand for water and power³. The country's ecosystems underpin important sectors of the economy and support millions of jobs including in the agricultural, fishery and tourism sectors.

However, Thailand's economic development taking place over the past decades has often been achieved at the cost of its biodiversity. Forests, coastlines and wetlands have become degraded and some 77 percent of the coral reefs in Thailand have been devastated by activities linked to tourism. This figure has risen from 30 percent a decade ago. This is taking place in spite of Thailand's international commitments under agreements such as the United Nations Convention on Biological Diversity (CBD) to conserve and use biodiversity sustainably.

While the benefits derived from biodiversity and ecosystem services are considerable, they are systematically undervalued by policy makers, businesses and financial institutions alike. At the same time, the conservation, sustainable use and restoration of biodiversity can introduce substantial benefits for businesses, ensuring long-term viability of current business models; enabling cost savings and increases in operational efficiency; introduction of new business models, markets, products and services; and improved relationships with stakeholders (OECD, 2019).

It is now time for all Thais, including the private sector, to contribute to conserving Thailand's enormous biodiversity. There is a need to better understand the significant contribution of biodiversity to the country's economic and societal well-being. This also means acknowledging how improved biodiversity management will be crucial to fulfilling the country's sustainable development objectives. The conservation, sustainable use and restoration of biodiversity is vital to achieving many other policy objectives, including for human health, climate change mitigation and adaptation, disaster risk-reduction as well as water and food security.

This Biodiversity Finance Plan lays out a financial framework which addresses the lack of resources necessary to achieve Thailand's biodiversity goals. The financial resources required for satisfying the national biodiversity conservation priorities – articulated in the National Biodiversity Strategy and Action Plan (NBSAP) – are substantial. It has been estimated that current funding levels for biodiversity conservation in the country are insufficient and that at least another \$942 million (THB 31.977 billion) will have to be invested between 2019 to 2021 according to the Biodiversity Expenditure Review (BER). These funds would enable the adequate restoration of ecosystems and biodiversity resources so that national targets are achieved. This is double the current annual level of funding. In other words, for every Thai Baht spent on biodiversity-related measures, Thailand need to invest twice as much.

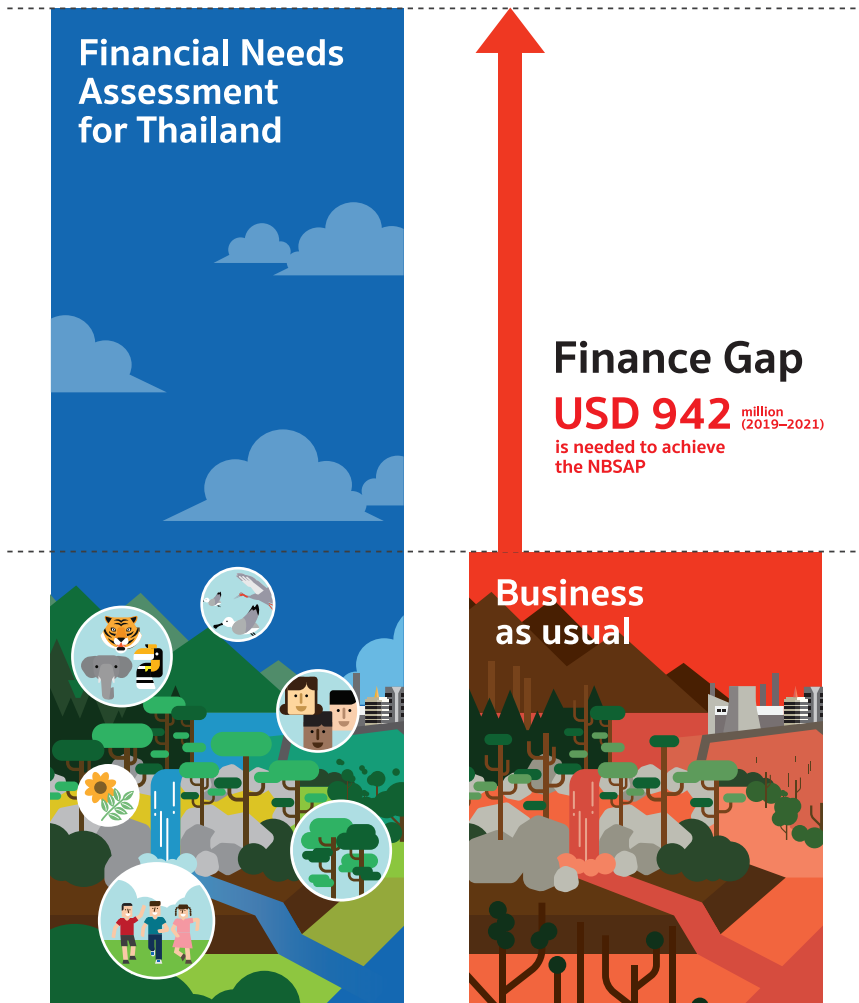
The Biodiversity Finance Plan provide guidance on prioritized finance solutions which aims to address the inadequate investment in the coastal/marine; wildlife conservation and other critical natural assets of Thailand. Using a participative process to give voice to key stakeholders in the biodiversity sector, this plan defines the key activities to be undertaken, the time-frame for undertaking measures to achieve the financial objectives and the role of various stakeholders in the implementation of these solutions.

¹ 9% of all species currently known are found in Thailand. It has 302 mammal species; over 980 bird species; approximately 320 reptile species; and 120 amphibians. In terms of Thailand's impressive aquatic biodiversity; there are over 11,900 marine invertebrate species and approximately 2,100 marine fish species and 720 freshwater fish species, accounting for 10% of the estimated total fish species worldwide.

² UN Convention on Biological Diversity. "Thailand: Country Profile" Accessed October 2018.

³ Office of Natural Resources and Environmental Policy and Planning. Thailand: National Report on the Implementation of the Convention on Biological Diversity. Ministry of Natural Resources and Environment, Bangkok. Thailand.

FIGURE 1
Finance gap to achieve the NBSAP (2019-2021)



Full implementation of this Finance Plan will reduce Thailand's large biodiversity finance deficit by creating new sources of revenue, harnessing synergies between government institutions with mandates in the area of biodiversity, optimizing the role of local governments in contributing to funding allocation, as well as improving cooperation with the private sector and local communities.

Sustainable Tourism Finance Solutions

- Implementation of user charges reflecting actual resource values as well as earmarking, and plough-back mechanisms.
- Going beyond designated protected areas to target nature-based destinations for example in order to maintain and restore marine and coastal biodiversity, introducing incentives and policy measures for sustainable coral reef and mangrove management in Thailand. These activities will be implemented in cooperation with local communities and civil society.

Wildlife and Protected Areas Finance Solutions

- Implementation of new financing models (e.g., conservation license plates) to scale up investment in wildlife and protected areas, enabling efficient utilization of a diverse range of sources of finance.

Government Budget Finance Solutions

- Increased cooperation between line ministries (Finance, Natural Resources and Environment, Interior, and the National Economic and Social Development Council) and ensuring mechanisms are in place for public, private and civil society actors to cooperate effectively for the management of biodiversity and ecosystem services.
- Local government organisations in Thailand play a very important role in biodiversity management and therefore a key aspect of this Plan is to facilitate their contribution through a bottom-up approach. Central, provincial and local government should coordinate on areas where results-based budgeting frameworks can improve the alignment between funding and Thailand's NBSAP targets.

Private Sector Finance Solutions

- Enhancing the policy framework through the introduction of new regulation (e.g., Draft Biodiversity Act), smart incentives and inclusive and sustainable business models will be necessary moving forward. Enormous benefits can be reaped from the country's biodiversity and yet very limited resources are channeled back into conservation, preservation and restoration of these resources.

- Developing strong synergies between the Government's programs for the promotion of bio-economy, circular economy and green economy strategy (BCG) as well as social impact investing. There is a variety of foundations and investment funds employing new delivery approaches to solve social and environmental challenges in Thailand which currently receive government support. For example, in 2019, B. Grimm Power Plc listed on the Stock Exchange of Thailand (SET) issued a green bond worth \$165 million (THB 5 billion). Proceeds from the bond will go towards B. Grimm's renewable energy development projects in Thailand. There is much learning of value to guide successful approaches to biodiversity impact investing.

- Developing a partnership framework to promote gender diversity, youth participation, and private sector engagement. These activities will be implemented working with Thailand Youth Biodiversity Network (TYBN)

Thailand's National Biodiversity Strategy and Action Plan (NBSAP)

The vision of the NBSAP is to enable people to live in harmony with nature through collaborative promotion and support by the government and other sectors for conservation, restoration, and sustainable use of biodiversity.

STRATEGY 1:

Integrating the value and management of biodiversity resources involving stakeholders at all levels through participatory processes

STRATEGY 2:

Conservation and restoration of biodiversity resources

STRATEGY 3:

Protecting the national rights in term of access and benefit sharing that is consistent with the concept of green economy

STRATEGY 4:

Developing the knowledge and standardize database on biodiversity resources so that it is consistent with international standards

The NBSAP outlines Thailand's ambition to increase forest cover to 40 percent of total land area by 2030, a target that should contribute to increasing biodiversity. In addition to the NBSAP aims to reduce the rate of habitat loss by 50 percent. Within this framework, in 2015, the government enacted the Marine and Coastal Resources Management Act. Thailand's Sustainable Consumption and Production Roadmap (2017-2036) also aims to restore biodiversity in agricultural areas to 2016 levels (32 percent of forest cover) by 2025, and includes targets such as reducing the use of pesticides by 30 percent by 2026 and increasing sustainable and organic farming practices. The vision of the NBSAP is to enable people to live in harmony with nature through collaborative promotion and support by the government and other sectors for conservation, restoration, and sustainable use of biodiversity.

THE INVESTMENT CASE FOR BIODIVERSITY



2. THE INVESTMENT CASE FOR BIODIVERSITY

This chapter covers the following sections: the case for investment in biodiversity in compliance with key national agendas; biodiversity support for key economic sectors; threats and opportunities; and Thailand's biodiversity finance landscape.

2.1 LINKAGES TO KEY NATIONAL AGENDAS

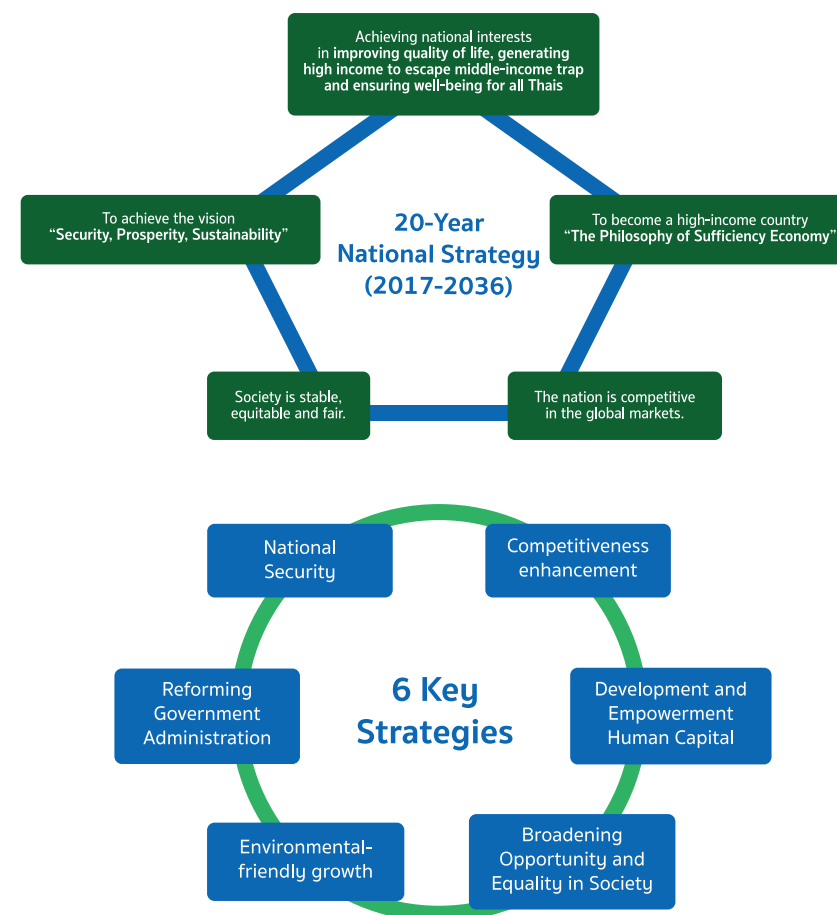
Thailand has its own unique framework for sustainable development called the Sufficiency Economy Philosophy (SEP). The SEP was introduced in 1974 by His Majesty the late King Bhumibol Adulyadej. SEP is a sustainable development approach which espouses moderation and prudence within a framework based on knowledge and virtue. The philosophy attaches great importance to human development at all levels and emphasizes the need to strengthen the capacity of communities to ensure a balanced way of life and resilience, with full respect for the environment.

The SEP, simply put, is Thailand's guiding light on the path toward sustainable development. Successive governments have embraced the approach within National Economic and Social Development Plans (NESDPs) and the 20-year National Strategy (2018-2037). Businesses have also put in place measures to ensure good governance. People on the ground across the country welcome the SEP because the bottom-up decision-making structure respects their voices, their environment and their way of life.

The Constitution of the Kingdom of Thailand provides for the conservation and sustainable usage of biodiversity resources in the country. It also protects the legal right of people and local communities to participate in the management, maintenance, protection and use of those resources in a sustainable manner. The 12th National Economic and Social Development Plan (NESDP, 2017-2021), in which principles and guidelines for sustainable development for Thailand are outlined explicitly states that "development must build on the foundations of biodiversity, and enhance community rights of access and management of resources in order to conserve the rich stock of natural resource and environmental capital as a foundation for the sustainable livelihood and happiness of the Thai people."

20-Year National Strategy (2018 – 2037)

The Plan comes at a key moment for Thailand, as the country enters a new economic phase under the Government's 20-Year National Strategy (2018 – 2037) during which the country will need to simultaneously balance progress across social, economic, and environmental dimensions (UNDP, 2017). Recently, the Thai government's line agencies completed the preparation of their respective 20-Year departmental strategic plans as requested by the current government in accordance with the National Strategy. Financing will play a critical role in determining to what extent the country will succeed in creating and balancing economic growth, lower inequality and environmental sustainability.



Bio-economy, Circular Economy & Green Economy (BCG) in Thailand

The implementation of this Plan benefits from being in line with already established government priorities and national strategies. In particular, the government is currently boosting the Thai economy through the Bio-economy, Circular Economy & Green Economy (BCG) model as part of the Thailand 4.0 initiative. The BCG model emphasizes the use of cutting-edge technology and knowledge to create value for the country's existing industries, from food and beverage manufacturing to agricultural goods, energy, biochemical products and tourism. It aims to enhance the country's productivity and economic activity.

The Government's bio-economy strategy aims to maximize Thailand's biodiversity resources and strength as a global hub for agricultural products. The strategy aims for creating new opportunities for increased value-added production in the agricultural sector by leveraging advances in science, technology and promoting innovation. Even as much of the Thai economy is already bio-based, the country launched a roadmap for further development of the bio-economy in 2017. The plans emphasizes the development of high-value products from existing economic crops, starting with sugarcane and cassava.

Through partnerships with the private sector, the Thai government is making a major commitment to building a modern bio-economy with the capacity to export to global markets. This has so far generated 16.5 million jobs or up to 50 percent of all jobs available nationwide in the agricultural and industrial sectors. The value of the bio-economy stands at \$95,269 million (THB 3 trillion) contributing 21 percent of the country's GDP as of 2018⁴.

Building a circular economy for Thailand will require reducing the use of raw materials, improving durability at operational plants, upgrading technology and harness innovations for higher efficiency. The circular economy plays a big part in successful waste reduction efforts, as waste levels continue increase year after year, from 24 million tons in 2008 to 27 million tons in 2017. Every year, more waste is accumulated in landfills and dumped into rivers, canals and the ocean, causing waterways to deteriorate and killing marine animals. The Government has launched a campaign to reduce the use of plastic bags by increasing private investment in initiatives that support sustainable consumption and production.

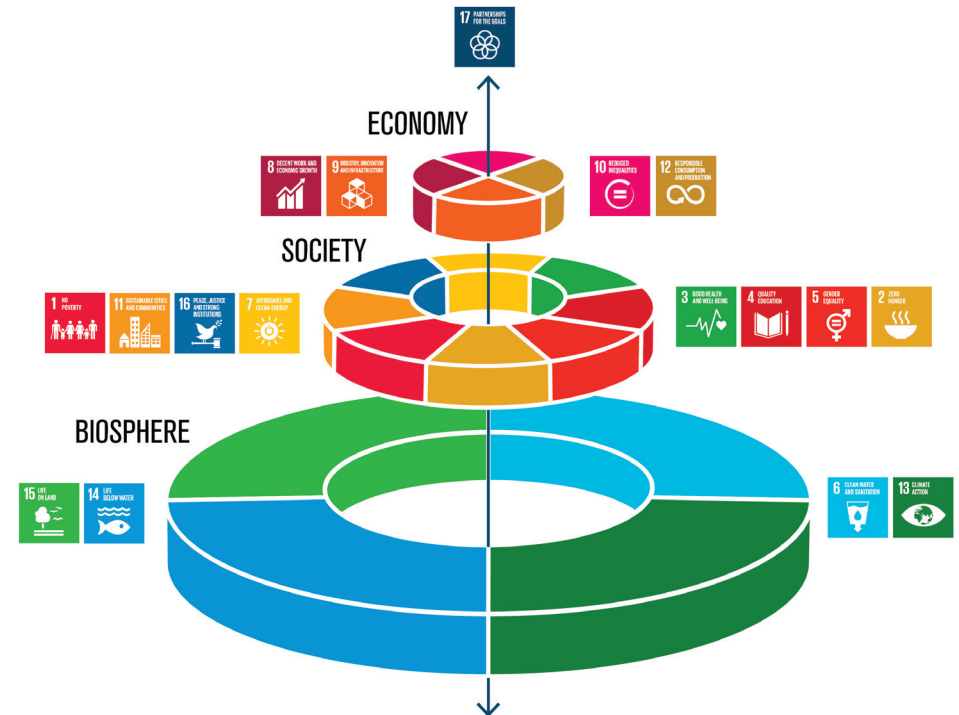
Thailand has significantly increased its investment into the transition to a green economy in recent years. These investments have been made in conjunction with other government and private sector investments in the bio-economy and offers another

example of the compatibility between investments in biodiversity protection and these strategies. Thailand's Ministry of Industry launched the 'green industry project' in 2010. Designed to provide guidance for green factories, the program educates businesses across Thailand on the fundamental elements of 'going green'. Enacting policies enabling businesses to capitalize on the advances in green technology and other biotechnology processes is essential in combating the environmental damage caused by industrial activity (BOI, 2018)

Biodiversity and ecosystem services can help to achieve the Sustainable Development Goals

Investment in the management and protection of biodiversity and ecosystems is also an investment in sustainable development which supports Thailand's progress towards achieving the United Nation's Sustainable Development Goals (SDGs). Figure 2 illustrates the fundamental importance of biodiversity and the biosphere in supporting the achievement of the SDGs.

FIGURE 2
The UN Sustainable Development Goals.



Source: Stockholm Resilience Centre

⁴ <https://thaiembdc.org/2018/10/01/from-the-sufficiency-economy-philosophy-to-sustainable-development-goals-september-28-2018/>

2.2 BIODIVERSITY SUPPORTS KEY ECONOMIC SECTORS AND LIVELIHOODS

Even as Thailand remains determined to achieve inclusive sustainable economic growth and development, awareness of the critical contribution of the country's biodiversity resources to its economic growth and well-being remains limited. Thai GDP growth fell to 2.4 percent in 2019, its lowest level since 2014 and is expected to fall further in 2020. The COVID-19 pandemic is causing disruptions to the tourism, agriculture and export sectors, the main drivers of the Thai economy. The lack of knowledge about the importance of the value of biodiversity to the Thai economy is impeding the comprehensive deployment of significant resources for the purpose of conserving, maintaining, and promoting the sustainable use of biodiversity resources in the country.

Thailand has long benefited from its wealth of biological resources. The economic significance of biodiversity is clear through its sizable contribution towards the country's economy, employment and poverty reduction, among many other areas. Biodiversity resources are essential to the livelihoods of millions, especially the rural population.

According to research conducted by the National Science and Technology Development Agency (NSTDA, 2011), below are some examples of key economic sectors demonstrating the importance of biodiversity for livelihoods in Thailand.

Agriculture

Even as the relative contribution from agriculture to the country's GDP has continuously declined from one-fifth in 1980 to around one-tenth in 2007, Thailand remains a major agricultural country through its flagship policy as "Kitchen of the World". Agriculture is not only a source of income for smallholder farmers, but also a significant export sector⁵. As a result, Thailand is currently the world's second largest exporter of refined sugar, the second largest exporter of rice, and the world's largest seafood exporter as well as the largest exporter of natural rubber globally.

Thailand has a total land area of 51.31 million hectares, 40 percent of which is used for crop production. Important crops grown are rice, maize, cassava, sugar cane, oil palm and rubber. Its native flora and fauna have been used to breed commercial crops and livestock which are tolerant to warm climates or resistant to diseases. Biological

substances from certain herbs as well as specific microbes have also been found to be effective against agricultural pests.

The sector has an extensive impact on ecosystems and their biodiversity but is also dependent on the same for producing essential goods and services. According to CBD (2017) biodiversity is essential for pest control, pollination and soil fertilization, although in current agricultural systems some of these services have been, at least in part, replaced by external inputs such as pesticides or fertilizers⁶. Furthermore, crop, livestock and fish diversity (agricultural biodiversity) is critical in maintaining viable and resilient crop flora and livestock breeds. For food security and healthy diets, biodiversity also provides nutritional benefits such as essential vitamins and micro-nutrients (Ibid 2017).

Traditional Medicines

Thai people have a long history of using herbs as medicines. The use of herbs is not only associated with healthcare, but part of the local wisdom and cultural heritage which has been passed down from earlier generations. The annual market value of herbs and herbal products in Thailand is approximately \$1.5 billion (THB48 billion). Given Thailand's rich biodiversity, it has been estimated that over 13,000 herb plant species which can potentially be used in the production of medicinal products. Herbal products are set to be one of the fastest growing agriculture product segments in Thailand. Thailand therefore has the opportunity to become Asia's herbal product manufacturing hub and could take on an important role as the world's top-ranking herbal product exporter.

Forests

Thailand benefits from various forest habitat types and the biodiversity that these bring. The country's forestry range from mangroves to rainforests and from coastal planes to mountain tops, covering 32 percent of the country or just over 16 million hectares. Forests provide a wide array of goods and services. Forest trees and shrubs play a vital role in the daily life of rural communities as source of timber, wood for fuel, fodder, essential oils, pharmaceuticals and contributes to soil and water conservation. Alarmed over the rate of deforestation, the government has set a target of increasing total forest area to 40 percent – of which 25 percent would be natural forest and 15 percent commercial forest. As a result, several successful agro-forestry and reforestation projects

⁵ Thailand's marine and coastal resources contribute significantly to the fishery sector and coastal aquaculture. In 2008, the total production from marine fishery was approximately 1.6 million tons, while the total production from coastal aquaculture was approximately 0.8 million tons. The combined value of these two sources of production was about \$3.08 billion (THB 97 billion). Today Thailand is one of the world's largest seafood exporters and the country's fishing industry employs more than 300,000 people.

⁶ Thailand's native plant and animal species have been used to breed commercial crops and livestock that are tolerant to warm climates or resistant to diseases. Biological substances from certain herbs as well as specific microbes have also been found to be effective against agricultural pests. Thailand imports no less than \$318 million (THB 10 billion)'s worth of pest-killing chemicals each year, which represents a sizeable market. Thai companies have developed and are now selling more environmentally friendly pest control products that are made from biological substances derived from plants and microbes found in Thailand.

introducing trees for fruits, timber and fuel wood is currently in progress providing a range of benefits for the rural communities in provinces such as Chiang Rai, Prachuap Khiri Khan, Kanchanaburi, Songkhla and Pattani.

Mangroves are among the most significant, highly productive, and valuable coastal ecosystems of Thailand, known as “Thailand’s Coastal Treasure”. Mangrove forests cover an area of approximately 240,000 hectares along the coastlines of the Andaman Sea and the Gulf of Thailand. The mangroves support the livelihoods of many which fulfill the four basic needs, shelter, food, medicine and clothing. People who live in coastal areas or in proximity to mangrove forests can reap these benefits through the utilization of the mangrove’s resources.

Tourism

Thailand is a country of natural beauty which has contributed to the growth of the tourism sector. In 2017, over 35 million foreign tourists visited Thailand, a record high. Thailand’s forest and maritime protected areas are home to some of the world’s best-known tourist attractions. As a major industry in Thailand, tourism generated \$66 billion (THB 2 trillion) in revenues in 2018, contributing 20 percent of Thailand’s overall GDP. In 2018, tourism in Thailand grew by 6 percent – significantly more than the global average of 3.9 percent. These natural attractions are therefore important sources of income for many communities, with travel and tourism supporting nearly 6 million jobs in the Thai economy.

2.3 THREATS AND OPPORTUNITIES

Despite its enormous economic benefits, biodiversity in Thailand is facing multiple threats. BIOFIN’s policy and institutional review outlines the negative drivers arising from policies, development priorities, and unregulated resource use. Some factors are specific to ecosystems, while others are cross-cutting. Common drivers of negative biodiversity trends which impact all ecosystems include pollution and land-use changes.

Negative biodiversity trends

Unintended consequences of government policies pose significant issues. Certain agricultural policies inadvertently have negative consequences on biodiversity. Monoculture such as corn and rubber plantations that encroach on forest areas are examples of unintended consequences of agricultural policies. Commercial corn plantations are pervasive in the Northern provinces, while rubber

plantations are pervasive in the South. In both areas, illegal plantations⁷ of the monocropping in highland forest reservations are a considerable problem.

The expansion of built-up areas and physical infrastructure has caused the degradation of wetlands. Partly a result of lacking demarcations of the boundaries of wetlands, the conversion of wetlands into built-up areas lead to changes in the natural drainage system, and, sometimes, changes in water channels. Moreover, the ease of accessing wetlands often lead to the use of wetland soil for landfills on construction sites. This further aggravates the threats to wetlands.

There are several threats to the biodiversity of marine and coastal ecosystems. These stem from fishery, tourism activities, maritime navigation, land-based pollution, marine debris, coastal erosion, and oil spills.

Urbanization and pollution also pose major threats to biodiversity resources. With a growing urban population and expanding urban areas, the conversion of unpopulated spaces into built-up areas result in the loss of the natural habitats of flora and fauna. This, in turn, leads to a loss of biodiversity.

Meanwhile, policy initiatives that aim to improve biodiversity exist alongside the challenges, including:

The designation of areas as protected areas of various forms, such as the designation of National Parks, Wildlife Sanctuaries, Non-Hunting Zones, and Ramsar sites (wetlands).

A major overhaul of the management of the fishery industry prompted by the formal warning regarding Illegal, Unreported, and Unregulated (IUU) fishing issued in February 2015 which paved the way for many positive biodiversity trends. The Department of Marine and Coastal Resources (DMCR) Act also provided the DMCR with the power to lead and coordinate efforts in all sectors in collaboration with entities such as the Department of Fisheries and Thai Frozen Food Association.

A growing recognition of the importance of biodiversity in urban ecosystems at the local, regional, and global levels have led to a variety of initiatives which could

⁷ The causes of these illegal plantations in forest reserve are complex and manifold, with certain government policies providing added incentives for continuing with and expanding illegal production of corn and rubber. For corn, ineffective law enforcement fails to keep farmers out of the forest reserve. Promotion of rubber plantation and rubber price support program provide incentives for expanding rubber plantation. There is also the Rubber Replanting Aid Fund Scheme, which encourages rubber plantation and, as such, is partly responsible for illegal rubber plantation.

bring about positive changes. At the local level, initiatives such as the policy adopted by the Bangkok Metropolitan Administration to increase green spaces in urban areas are being implemented. Other initiatives at the municipal and city level include actions taken in relation to the City Biodiversity Index (CBI)⁸ or the Singapore Index on Cities' Biodiversity.

2.4 THAILAND'S BIODIVERSITY FINANCE LANDSCAPE: MAIN ACTORS, GOALS AND APPROACHES

Current funding for biodiversity conservation in Thailand comes mainly from the Government's budget allocation. Governmental biodiversity-related expenditure in 2015 made up as little as 0.5 percent of the overall national budget or 0.1 percent of Thailand's Gross Domestic Product (GDP). According to the BIOFIN expenditure review (BER), approximately \$330 million (THB 11 billion) was spent on biodiversity conservation annually⁹. The funds allocated as part of the government's budget primarily goes towards the operations of key Thai environmental agencies.

The main sources of external funding are the Global Environment Facility (GEF)¹⁰ and bilateral grants from individual countries¹¹ which are then distributed by the main government environmental agencies¹². This external development assistance, co-financed by the government and international NGOs, is spent on projects which aim to develop a framework for and mobilize efforts by government agencies conservation and sustainable management of biodiversity resources at the national as well as local level. As such, available funding is targeted towards the protection of critical ecosystems, reducing pressure on natural habitats and mobilizing financial resources to promote their sustainable use and management in line with the CBD's strategic objectives.

Private sector funding is largely employed for biodiversity protection through Corporate Social Responsibility (CSR) activities, especially from major companies in the construction, mineral and petrochemical sectors. Many large businesses in Thailand have

integrated CSR into their business models as a self-regulatory mechanism for assessing and taking responsibility for impact of their operations on environmental and social well-being. Companies who utilize significant amounts biodiversity resources also invest in related research and development. These include those in bio-industry such as the pharmaceutical sector. For instance, the Thailand Business Council for Sustainable Development (TBCSD) provides a knowledge sharing platform for its member organizations which gives guidance on the development and implementation of corporate environmental management policies and strategies. Several companies now regularly issue sustainability disclosure reports. The Stock Exchange of Thailand (SET) has created the Thailand Sustainability Investment (THSI) Award, a list of Thai companies¹³ with particularly good performance on Environmental, Social and Governance (ESG) metrics in its annual sustainability assessment. The private sector also helps fund the activities of key conservation agencies such as the Royal Forest Department (RFD) and Royal Plant and Genetic Conservation Project under Her Royal Highness Princess Maha Chakri Sirindhorn (RSPG). For example, in 2015, private funding in support of RFD programs totaled \$500,000 (THB 15.9 million), and support for the RSPG totaled \$400,000 (THB 13.2 million).

It is important to note that the mainstreaming of conservation activities at the local level are mainly supported through the budgets of provincial and local authorities. Furthermore, the work of many national-level agencies is carried out with local participation. This is in line with a growing awareness of the importance of biodiversity conservation and management at the local level. Involvement of people in close proximity to natural resources and nature can help ensure increased effectiveness of biodiversity-related programs. Such involvement also helps to alleviate funding constraints by lessening the dependency on the funding of environmental and mainstreaming agencies.

In conclusion, Thailand's biodiversity financing is first and foremost a determined by the national budgetary contribution and international technical assistance. However, involving other sectors in mobilizing funds, increasing private investments, using blended finance and other resources through different forms of public private partnerships is necessary and requires interaction with a broad range of actors with different interests, approaches and modes of delivery. The BER also found that a large share of biodiversity-related funding was provided through the national budget, as opposed through extra-budgetary channels. As such, the national budgetary process plays an important role in the allocation of funds for biodiversity in Thailand.

⁸ Many municipalities in Thailand are voluntarily adopting the CBI, which is a self-assessment tool developed by international experts in the form of an index.

⁹ BIOFIN Reports: Reports from the BIOFIN project for Thailand can be found from the BIOFIN Thailand webpage at <https://www.biodiversityfinance.net/thailand>

¹⁰ The GEF is a multilateral funding arrangement and accounts for a larger proportion of ODA when compared with bilateral grants

¹¹ The OECD's Creditor Reporting System shows that commitment ODA funding between 2011 to 2014 amount to \$16.48 million. The large majority of this (\$14.34 million or 87 percent) come from the GEF.

¹² See BIOFIN Expenditure Review (BER). Available at <https://www.biodiversityfinance.net/thailand>

¹³ Starting in 2016, 73 companies in THSI list are listed on SET and six on Market for Alternative Investment (MAI). The selected companies have a total market cap of THB 10.59 trillion (\$320.9 billion), representing 59.8 percent of the combined SET and mai market cap of \$ 562,400 million (THB 17.71 trillion).

Examining the ratio of total biodiversity-related expenditure to overall GDP, the spending level was relatively consistent throughout the review period covering the fiscal years of 2011 to 2015. With GDP growing from year on year, this translates to a slightly increasing absolute amount of biodiversity-related spending. Biodiversity expenditures also accounted for an increasing proportion of total expenditures throughout the review period. Despite this, the annual increase in spending from year to year is fairly small.

Of the core environmental agencies, the Department of National Parks, Wildlife

TABLE 1:
Total Biodiversity Expenditure, FY2011 - 2015

	FY2011	FY2012	FY2013	FY2014	FY2015
NOMINAL GDP	10,523,089	11,243,980	11,938,250	12,061,090	13,368,450
TOTAL GOVERNMENT EXPENDITURE	2,050,539	2,148,475	2,171,460	2,246,307	2,378,114
BIODIVERSITY BUDGET	9,257	9,042	9,244	9,829	11,110
% OF GDP	0.09%	0.08%	0.08%	0.08%	0.08%
% OF TOTAL EXPENDITURE	0.45%	0.42%	0.43%	0.44%	0.47%

Source: BIOFIN Thailand's BER Report
Unit: THB million

and Plant Conservation (DNP), the Royal Forest Department (RFD), and the Department of Marine and Coastal Resources (DMCR) were the three government agencies which accounted for the largest share (over 80 percent) of the overall biodiversity budget for 2015. The total biodiversity-related expenditures for these three agencies is \$226 million (THB 7,556 million).

In conducting the Financial Needs Assessment (FNA)¹⁴, the shortfall in overall

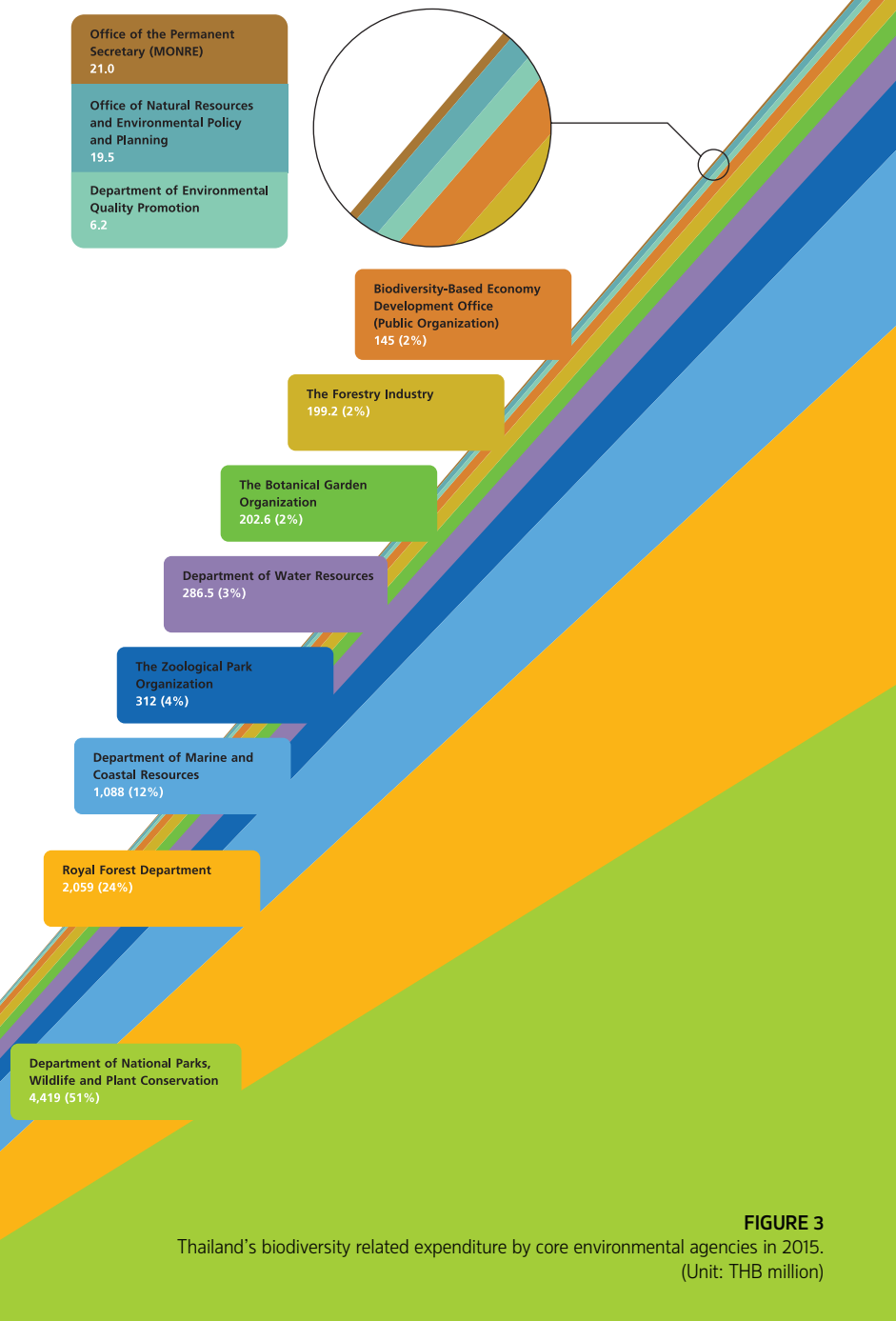


FIGURE 3
Thailand's biodiversity related expenditure by core environmental agencies in 2015.
(Unit: THB million)

financing was estimated to \$942 million (THB 31,978 million) for the remaining 3 years of the NBSAP (2019 – 2021). This is more than twice the estimated biodiversity budget in the BER. As Figure 3 clearly shows, substantial investment is needed to meet the national biodiversity targets. The shortfall of \$942 million (THB 31,978 million) can be broken down into two parts. First, estimated financial needs for the DNP and RFD account for 81 percent of is the necessary increase in funding. These agencies hold mandates to govern the country’s terrestrial ecosystem. The remainder are the estimated financial needs for the DMCR, which is directly responsible for coastal and marine ecosystems. The goals toward which the funding is be used for are broken down by department in Table 2. The targets set by the DNP, RFD, and DMCR as shown in Table 2 will be important in improving conservation efforts and expedite the implementation of tasks under five BIOFIN categories which are (i) Forests/terrestrial,(ii) Protected areas,(iii) Inland wetlands,(iv) Coastal and marine, and (v) Urban biodiversity.

TABLE 2:
Departments, strategies and targets

DEPARTMENTS	STRATEGIES	TARGETS
Royal Forest Department (RFD)	STRATEGY 1: Protection and maintenance of areas under forest coverage	<u>Establishing new 90 forest patrol units</u> <u>Capacity building for existing 521 forest patrol units</u>
	STRATEGY 2: Restoring degraded forests	<u>208,800 hectares (1,305,000 rai)</u>
	STRATEGY 3: Promoting the development of economic forests	<u>Establishing urban forests of 84,000 hectares (525,000 rai)</u> <u>Increasing tree cover in rural/ agricultural area of 206400 hectares (1,290,000 rai)</u>
	STRATEGY 6: Promote people participation	<u>6,000 community/family forest established</u>

Department of National Parks, Wildlife and Plant Conservation (DNP)	Replanting degraded forests within National Parks	<u>188,415 hectares (1,177,597 rai)</u>
	Replanting degraded forest parks	<u>2,184 hectares (13,648 rai)</u>
	Replanting degraded forests in existing Wildlife Sanctuaries	<u>1,543 hectares (9,643 rai)</u>
	Replanting degraded forests in new Wildlife Sanctuaries	<u>555 hectares (3,471 rai)</u>
Department of Marine and Coastal Resources (DMCR)	Replanting degraded coral reefs	<u>364 rai (58 ha)</u>
	Replanting degraded seagrass beds	<u>48 ha (301 rai)</u>
	Protection of mangrove forests	<u>25,035 ha (1,564,655 rai)</u>
	Reclamation of mangrove forests	<u>3,600 ha (22,500 rai)</u>
	Replanting of mangrove forests	<u>6,480 ha (40,500 rai)</u>

¹⁴ BIOFIN Thailand utilized a bottom-up approach whereby key line agencies like the DNP, RFD, and DMCR were identified and their strategies and planned activities included in the FNA calculation. Thus, biodiversity goals are those identified in the NBSAP, the Ministry of Natural Resources and the Environment’s 20-Year Strategic Plan, and items in the key line agencies’ strategies and plans that are not included in the NBSAP budget (NBSAP plus activities). The latter items were identified and costed in close consultation with key line agencies.

THE PLAN FOR THAILAND



3. THE PLAN FOR THAILAND

This Biodiversity Finance Plan represents a comprehensive and coherent national approach to biodiversity finance which encompasses a full suite of finance solutions. The Plan is a living document which builds on progress already made in Thailand to set targets and outline measures to be taken in order to expand the country's biodiversity finance agenda and achieve national biodiversity targets.

The Plan aims to deliver a prioritized set of biodiversity finance solutions which explore new finance mechanisms and ways of creating and supporting new partnerships. The prioritized biodiversity finance solutions in the Plan are complementary and offer a combination of systemic and locally sustainable financing solutions, policy changes, and other incentive mechanisms.

The Plan requires a wide range of technical capabilities making the inclusion of multiple institutions and stakeholders necessary. Implementation will require coordinated efforts by a group of government, civil society organizations, NGOs, private sector entities and development partners. The intention is for Thailand's main environmental agencies and other key parties to own the Plan and support its implementation.

3.1 GOALS AND TARGETS

In general, the goal of the BFP is to boost financing for biodiversity conservation in Thailand through a complementary mix of financing solutions made up of financial strategies, policy changes and other innovative mechanisms. Adoption of the Plan is expected to:

Increase investment in biodiversity conservation and promote the sustainable use of resources in order to achieve national biodiversity targets.

Increase private sector and civil society participation in biodiversity conservation and management.

Reduce existing needs for biodiversity finance by improving government biodiversity budget allocations and cost-effectiveness of implemented measures. The proposed finance solutions will achieve their desired impact through:

The proposed finance solutions will achieve their desired impact through:

Generating new revenues directed towards biodiversity conservation. This will entail reforming the role of the public sector and creating economic incentives for the private sector and general public to contribute to biodiversity conservation.

Realigning existing financing to reduce negative impacts and improve outcomes.

Avoiding future expenditures through strategic investment and policymaking. This includes reducing harm from existing production and consumption practices, thereby reducing the investment necessary to mitigate damage.

Delivering better conservation through improved effectiveness, efficiency, and synergies. This includes increasing the effectiveness of how the government budget is used in order to reduce the required overall increase in government funding.

3.2 PRIORITIZED BIODIVERSITY FINANCE SOLUTIONS

This section of the Plan outlines prioritized finance solutions, in which the public sector, together with the private sector and civil society, invest in biodiversity and with the goal of meeting national biodiversity targets.

As previous sections indicate, there is a need to supplement public funding with more innovative funding mechanisms – both public and private – including from sectors which cause biodiversity loss and/or benefit from ecosystem services.

A PARADIGM SHIFT IN BIODIVERSITY FINANCING

A biodiversity finance solution is a multifaceted approach that includes one or more finance mechanisms/tools/strategies, financing source(s), lead agent or intermediary(ies), and the desired finance result.

Screening, Assessment and Prioritization of Finance Solutions

BIOFIN Thailand, together with a range of different actors and experts, has outlined specific finance solutions to be implemented. The selection was made during a prioritization workshop¹⁵ organized by BIOFIN Thailand on November 17, 2017. Several biodiversity finance solutions (existing and potential) were reviewed and identified.

Finance solutions discussed with key stakeholders were divided into the following categories.

- Financing instruments related to financial institutions
- Financing instruments which are low hanging fruits
- Financing instruments which aim to create markets (demand for conservation activities)
- Financing instruments with which Thailand has some limited experience
- Financing instruments which are challenging but potentially far reaching
- Financing instruments which the Ministry of Finance must consider
- Financing instruments which require strong political will

In line with the BIOFIN methodology, finance solutions that were seen as the most promising and realistic were chosen and deemed as being significant according to their ‘impact on biodiversity’, ‘impact on finance’ as well as ‘likelihood of success’. Based on the result of the rapid screening process, nine biodiversity finance solutions were selected for further assessment. These were the following:

Biodiversity impact:

- Bioprospecting
- Sustainability standards: products and process
- Biodiversity offsets

Finance Impact:

- Corporate social responsibility tax/funding
- Climate, carbon and forestry funds
- Tax on pesticides

Likelihood of Success:

- Impact investment
- Ecotourism
- Sustainability standards

Further input was provided by the BIOFIN Thailand technical team as part of the detailed screening process of the selected finance solutions. Alongside expert interviews and analysis of the recommendations made in previous BIOFIN assessments of Thailand, an important tool aiding the identification and prioritization of finance solutions has been the BIOFIN Finance Solutions Catalogue¹⁶ and a detailed screening process. The analysis of prevailing threats and potential policy responses has also informed the selection of finance solutions (see Annex 1). Based on analyses and expert interviews, three more finance solutions were identified and prioritized:

- Payment for ecosystem services provided by marine ecosystems
- Conservation license plates for tiger conservation
- Nutrient trading

The final stage of the screening process consisted feasibility studies and technical proposals for a subset of priority finance solutions. This process resulted in the following four thematic finance solutions including the recommended finance solutions that are the subject of this Plan (see Table 3).

TABLE 3:
Prioritized Finance Solutions

Thematic areas: SUSTAINABLE TOURISM			
Recommended Finance solutions	Sector	Finance results	Source of Finance
Increasing sources of revenue for safeguarding biodiversity and environmental management	<u>Tourism</u>	<u>Generate revenues</u>	<u>Market based</u>
	<u>Coral reefs</u>	<u>Realignment</u>	
	<u>Pollution management (Plastic waste)</u>	<u>Avoid future cost</u>	
		<u>Deliver better</u>	

¹⁵ Organizations who participated in the workshop: Tourism Authority of Thailand, Thailand Business Council for Sustainable Development, Department of National Parks, Wildlife and Plant Conservation, Royal Forest Department, Department of Marine and Coastal Resources, Electricity Generating Authority of Thailand (EGAT), Provincial Water Works Authority, Office of Natural Resources and Environmental Planning and Policy, NESDB, Royal Plant Genetics Conservation Project of HRH Princess Maha Chakri Sirindhorn, Department of Fisheries, Port Authorities of Thailand, Biodiversity-based Economy Development Office (BEDO), Ministry of Finance, Bank of Thailand, Department of Water Resources, Office of Agricultural Economics, Land Development Department and Royal Irrigation Department.

¹⁶ Available at: <http://biodiversityfinance.net/finance-solutions>

Thematic areas: WILDLIFE AND PROTECTED AREAS

Recommended Finance solutions	Sector	Finance results	Source of Finance
Deployment of conservation vehicle license plates to support wildlife conservation in Thailand	Wildlife Protected Areas	Generate revenues	Market based

Thematic areas: GOVERNMENT BUDGET

Recommended Finance solutions	Sector	Finance results	Source of Finance
Enhancing effectiveness and biodiversity impact of local budgets in Thailand	Local government units	Deliver better Realignment Avoid future cost	Public Sector

Thematic areas: PRIVATE SECTOR

Recommended Finance solutions	Sector	Finance results	Source of Finance
Mobilizing the private sector and impact investment in support of biodiversity - Public- Private Partnership - Ecotourism - Nutrient trading - Impact investment	Mangroves Pollution management Micro, small and medium scale enterprises (MSMEs)	Generate revenues	Private Sector

THEMATIC BIODIVERSITY FINANCE SOLUTIONS



4. THEMATIC BIODIVERSITY FINANCE SOLUTIONS

This section summarizes each of the finance solutions, providing context as well as identifying objectives, key partners and where possible discusses expected financial results. The recommended finance solutions have been grouped according to their thematic areas of intervention. Solutions requiring further baseline analysis have been included which is consistent with the notion that this plan is a 'living plan'. The plan is to be put into action within the time frame of the implementation steps shown in the 'Action Plan'.

4.1 SUSTAINABLE TOURISM FINANCE SOLUTION

FINANCE SOLUTION		
Increasing sources of revenue for safeguarding biodiversity and environmental management		
KEY FEATURES	Main Finance Mechanism	User charges
	Solution Type	Imposing new and adjusting existing user charges for biodiversity resources
	Source of funds	Private
	Instrument type	Fiscal/regulatory
	Finance result	Generate revenues/ realignment/ avoid future cost/ deliver better

Context

In Thailand's protected areas, revenues from entrance fees paid by tourists of between \$6 to \$12 (THB 200-400), is mandated to be used for environmental protection. During the period of October 2016 to June 2017, a total \$55.4 million (THB 1.678 billion) in revenues were collected from entrance fees across Thailand's national parks (DNP)¹⁷. On the other hand, national park expenditures tend to be dominated by operational costs (such as personnel, maintenance, administration, travel, and transport). There is

¹⁷ <https://www.thepuketnews.com/phuket-tourism-to-national-parks-generates-40-of-all-park-revenues-62737.php>

currently a lack of information about how fees are reinvested in conservation activities and only limited mechanisms exist for retaining revenues and earmarking funds for specific conservation activities or priorities at individual parks (Nabangchang et al., 2012). Inefficient fee collection has also resulted in revenue losses¹⁸.

For nature-based tourism sites outside of national parks or protected areas, impediments to biodiversity conservation financing are even greater. Currently, there is no formal visitors fee for sites outside protected areas. Therefore, funds generated by tourism in such places are usually insufficient to cover local the costs of biodiversity conservation

Given the growing demand for tourism access to nature-based island destinations such as Koh Tao, it is increasingly important that adequate economic instruments such as user charges be implemented to ensure that tourism opportunities contribute to biodiversity conservation. Koh Tao is one of the islands in Thailand with the highest tourist potential, receiving an estimated 300,000-500,000 visitors per year. Despite this, it has not been included in the national protected area system. At the same time, similar to other major island tourist destinations around the world, Koh Tao is facing environmental deterioration of both terrestrial and marine environments as well as problems stemming from waste and waste water pollution. The use of economic instruments as well as legal and institutional frameworks may offer potential solutions to address the worsening environmental problems.

This solution aims to implement a user charge on the visitors of Koh Tao island. The expected financial benefit is substantial. It has been estimated that approximately \$1- 1.5 million (THB 30-50 million) per year can be collected based on the number of tourists visiting Koh Tao.

INVESTMENT CASE

- Thailand has moved from a low-income country to a middle-income country in less than a generation, thanks in large part to its tourism industry. Direct receipts from tourism amounted to 12 percent of gross domestic product (GDP), and indirect revenues push the figure closer to 20 percent.

¹⁸ In 2016, DNP has investigated collection 'leakages' across Thailand's national parks and then introduced an e-tick eting system at marine locations to prevent corruption. For example, revenue from entry tickets at Phi Island National Park (1.6 million visitors) in 2015 only amounted to USD 2.3 million while it jumped to USD 12.3 million after DNP had all entry tickets verified. Bangkok Post, 2018.

- Koh Tao currently charges no fees from visitors, consequently funds generated by tourism are usually insufficient to cover the costs of biodiversity conservation

- Strong interest and political will of the Koh Tao Municipality, the local NGO, local businesses and civil society groups, together with the strong brand-name of Koh Tao as a world-leading diving destination and its rich biophysical resources all offer great potential for ensuring uptake and the sustainability of the finance solutions.

- In the medium to long term, the fund can effectively bring together various donors and streams of funding in line with on-the-ground conservation needs and priorities and thus represents a strong potential to raise additional resources.

Objectives

There are two main objectives of this finance solution that is to be piloted on the island of Koh Tao: i) collection of a user charge from tourists either upon arrival or departure and ii) use of the user charge in safeguarding biodiversity and for other environmental conservation purposes. First, the collection of user charge requires the creation of a legal framework (e.g. municipality ordinance) and a system for the collection of user charges. Secondly, to establish the public entity charged with managing the revenues raised by the user charge for conservation and environmental management including structure, role, responsibility, function, etc. This includes building an organization with the capacity to ensure that the allocated budget is used effectively and for activities which safeguard biodiversity and to manage the environment of Koh Tao.

Partners

Local partners include the Koh Tao Municipality, local NGOs and representatives of the private sector located in Koh Tao. At the regional level, potential partners include the District Office of Pha-ngan and the Office of the Provincial Governor of Surat Thani. Partners amongst the National Thai agencies include the Department of Marine and Coastal Resources, Department of National Parks, Wildlife and Plant Conservation, Department of Treasury, Royal Thai Navy and 4th Army Area Commander.

Action Plan

In collaboration with the Municipality of Kao Tao Island, UNDP/BIOFIN will set up a project management unit in Koh Tao to oversee the implementation of the finance solution. Envisioning cooperation with all stakeholders at the local level, the action plan outlines the following key activities.

KEY ACTIVITIES

Develop a roadmap



LEAD/KEY STAKEHOLDERS

BIOFIN Project Management Unit; Koh Tao Municipality; National Government Agencies; Private sector; Local NGOs

TIMEFRAME

2019

KEY ACTIVITIES

Initiate and develop legal mechanisms with regards to the collection of the user charge in Koh Tao



LEAD/KEY STAKEHOLDERS

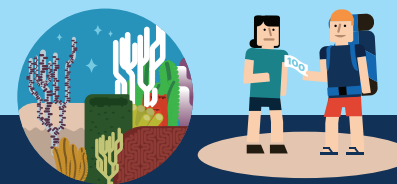
BIOFIN Project Management Unit; Legal specialist;

TIMEFRAME

2020–2021

KEY ACTIVITIES

Design system for the collection of user charge



LEAD/KEY STAKEHOLDERS

BIOFIN Project Management Unit; Stakeholders Working Group;

TIMEFRAME

2020–2021

KEY ACTIVITIES

Set up a mechanism (e.g. Environmental and Conservation Fund) to manage user charge revenues and allocate funds for activities related to biodiversity conservation (coral reef restoration) and environmental management (waste management)



LEAD/KEY STAKEHOLDERS

BIOFIN Project Management Unit; Koh Tao Municipality; Local NGOs

TIMEFRAME

2020–2021

KEY ACTIVITIES

Capacity building for Koh Tao organizations



LEAD/KEY STAKEHOLDERS

BIOFIN Project Management Unit; Koh Tao Municipality; Private sector; Local NGOs

TIMEFRAME

2020–2021

KEY ACTIVITIES

Awareness raising and PR on the utilization of user charge for general tourists and stakeholders from all sectors



LEAD/KEY STAKEHOLDERS

BIOFIN Project Management Unit; Private sector; Local NGOs

TIMEFRAME

2020–2021

Expected Financial Result

The expected financial impact is substantial. For the demonstration site in Koh Tao, the fee proposed is \$3 (THB100) per visitor¹⁹, which would amount to approximately \$1.15 – 1.65 million (THB35–50 million) in annual revenue based on the number of tourists visiting to Koh Tao (approximately 350,000 - 500,000 visitors every year). The next step would be to replicate this model for all Marine National Parks (MNPs), as well as in tourist destinations outside of MNPs, which would provide the necessary groundwork for increasing both the level and coverage of charges. This solution is in line with the policies of the Department of National Park, Wildlife and Plant Conservation which aims to have national parks across the country generate more revenue from tourism to make up for insufficient government funding.

¹⁹ It is not unrealistic to expect that people would be willing to pay THB100 \$3. Indeed, this is the rate charged informally to tourists who visit the nearby island, Koh Nang Yuan. This island is one of nature-based tourism sites outside of national parks which belongs to the Department of Treasury).

4.2 WILDLIFE AND PROTECTED AREAS FINANCE SOLUTION

FINANCE SOLUTION

Deployment of conservation vehicle license plates to support wildlife conservation in Thailand

KEY FEATURES	
Main Finance Mechanism	Conservation license plates
Solution Type	Special license plates that are sold at a higher price to car owners. The extra income is earmarked for wildlife conservation
Source of funds	Privat Sector
Instrument type	Market Government budget earmarking
Finance result	Generating revenue

Context

Thailand now has more than 37 million registered cars and motorcycles and that number is growing. These cars can be harnessed to save Thailand's wildlife. By offering a special conservation license plate for purchase at a premium price, car owners can actively contribute to wildlife conservation in the country. This is a source of finance which can be implemented by the Thai Government as the Department of Land Transport already has experience administering special license plates as well as the collection of fees, notably in relation to the sale of 'lucky number' license plates in Thailand. Furthermore, a recent survey conducted by BIOFIN Thailand showed that more than 40 percent of vehicle owners sampled were willing to pay a premium to obtain a conservation license plate in place of an ordinary license plate²⁰.

²⁰ The National Institute of Development Administration (NIDA) poll, conducted in January-February 2019, for conservation license plates surveyed 1,122 respondents nationwide.

Tigers are currently under serious threat of extinction due to an increase in poaching, habitat losses and a depletion in the population of its prey which in turn adversely affects the whole ecosystem. As a result, tiger conservation has gained a momentum in Thailand over the last decade. The Department of National Parks, Wildlife and Plant Conservation (DNP) has funded Indochinese tiger conservation in the Western Forest Complex protected area system²¹. However, continuous funding necessary to sustain (e.g. additional skills training and maintenance/replacement of equipment) these initial investments is lacking. There are no funds available to train and equip any new ranger staff. Salaries of current rangers remain low and working conditions are relatively harsh.

In order to meet the financial sustainability requirement for tiger conservation in the Huai Kha Kaeng Wildlife Sanctuary, this finance solution advocates for the introduction of a mechanism mobilizing funds via the introduction of Conservation Vehicle License Plates²² to collect voluntary payments from vehicle owners in Thailand. While the concept of “special” premium license plates is not new in Thailand, the collection and earmarking of revenues from sales of special conservation license plates remains untested. But as in countries which have already implemented similar mechanisms, it is assumed some transfer mechanism can be developed in Thailand²³.

²¹ The Western Forest Complex (WEFCOM) is the largest tract of intact forest in Thailand, totaling 18,727 km², and is one of the largest Protected Area landscapes in Southeast Asia. Situated at the core of the WEFCOM and rich with diverse and intact habitats, Huai Kha Khaeng Wildlife Sanctuary (HKK WS) offers a stronghold for wildlife and beacon for tiger recovery. The HKK WS provides a home to the largest remaining population of the endangered subspecies of Indochinese tiger. The area has been classified as a Tiger Conservation Landscape Level 1, signifying a Global priority

²² Conservation license plates feature wildlife images. They are sold at a higher price (usually an additional \$15-60 per year, with lower prices for renewal). The funds are used for wildlife conservation and other green causes. The plates are widely sold in different states in the USA and Canada. For example, the state of Maine raised more than \$40 million since 1994.

²³ Revenue from this finance solution would initially need to be managed out by the Department of Land Transport (DLT) who control the legal permit of vehicle license and collection channels. Currently, the Department of Land Transport issues special ‘lucky’ license plates using an auction system, with the revenue channeled to the Road Safety Fund and used in campaigns to prevent accidents on the road while educating citizens to learn about driving safely. Similarly, revenue collected from sales of the conservation license plates would need to be carried out by the DLT but under a new logistical setup. Lastly, several fund management options have been proposed. Candidates

INVESTMENT CASE

- Conservation license plates could generate significant revenues as it targets a market of high demand. It provides an easy channel for people to support the environment, through products which they are already using. There is a growing demand for individualized products in Thailand, and willingness to pay among consumers.
- There are opportunities to extend the range of special license plates offered in Thailand. For instance, similar special license plates are very valuable in Thailand and offer a good model; in Trang province alone, special ‘lucky number’ plates with a backdrop of dugongs in seagrass ecosystem raised \$1.6 million over the past 4 years.
- New sources of funding will increase the diversity and size of the WEFCOM’s funding portfolio and enable effective tiger conservation and protected area management.
- A new cross-sectoral revenue earmarking policy and practice constitutes an innovative biodiversity finance solution for Thailand. These actions are necessary to overcome the financial.

Objectives

The solution aims to extend the range of special license plates offered in Thailand to include conservation vehicle license plates for raising funds for wildlife conservation. This solution could potentially build on the Department of Land Transport’s current practice of auctioning special ‘lucky number’ vehicle license plates in accordance with the Ministerial Order on Auctioning Special Vehicle License Numbers.

Partners

The Department of Land Transport (DLT) and DNP should head up this initiative by virtue of their mandates related to control of legal vehicle license permits and revenue collection channels, as well as managing protected areas in land use planning, respectively. The Fiscal Policy Office and the Bureau of Budget under the Ministry of Finance (MOF) will act to coordinate cross-sectoral revenue earmarking and provide toolkits for the budgeting and revenue allocation processes.

Action Plan

The table below outlines a proposed implementation scenario focused on next steps.

KEY ACTIVITIES

Designing, developing and implementing an appropriate and sustainable financing mechanism for the collection and disbursement of the funds



LEAD/KEY STAKEHOLDERS

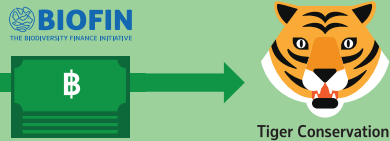
BIOFIN; National Government Agencies including MOT, MOF and DNP; Local NGOs

TIMEFRAME

2019–2022

KEY ACTIVITIES

Apply BIOFIN methodology to estimate current expenditures and financial needs for tiger conservation in the WEFCOM



LEAD/KEY STAKEHOLDERS

BIOFIN

TIMEFRAME

2019

KEY ACTIVITIES

Establish legal and organizational framework. Proposed regulatory reforms (e.g., Ministerial regulation) to allow for conservation license plates scheme in Thailand



LEAD/KEY STAKEHOLDERS

BIOFIN; legal/policy specialist

TIMEFRAME

2019–2020

KEY ACTIVITIES

Capacity development support especially to DLT on implementation scheme for conservation license plates



LEAD/KEY STAKEHOLDERS

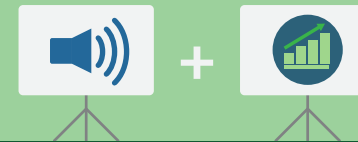
BIOFIN; National Government Agencies; Local NGOs

TIMEFRAME

Throughout the process

KEY ACTIVITIES

Advocacy & Social marketing campaign



LEAD/KEY STAKEHOLDERS

BIOFIN

TIMEFRAME

2019–2020

KEY ACTIVITIES

Monitoring, Reporting and Evaluation



LEAD/KEY STAKEHOLDERS

BIOFIN

TIMEFRAME

Throughout the process

Expected Financial Result

BIOFIN has conducted a survey on the willingness to pay for conservation license plates and found largely positive results through a National Institute of Development Administration (NIDA) poll. The NIDA poll, conducted in January and February 2019 with 1,122 respondents, found that most of Thai vehicle owners, both for cars and motorcycles, held positive views on the proposed solution. More than 40 percent of vehicle owners sampled were willing to pay to obtain a conservation license plate instead of an ordinary license plate. The modal value of the willingness-to-pay for a one-time payment for a conservation license is at the amount of THB1,000 (USD33) per plate. With these survey results, the finance solution is expected to generate revenue at the amount of at least \$11 million.

4.3 GOVERNMENT BUDGET FINANCE SOLUTION

FINANCE SOLUTION

Enhancing effectiveness and biodiversity impact of local budgets in Thailand

KEY FEATURES	Main Finance Mechanism	Policy guidelines
	Solution Type	Enhance local budget execution
	Source of funds	Public
	Instrument type	Fiscal
	Finance result	Deliver better / realign expenditures

Context

Since the early 1990's the government has introduced a series of decentralization reforms which have enabled local governments and central agencies to coexist as governing units in Thailand. As a result, a number of responsibilities are now devolved to local authorities, namely including Municipality, Provincial Administrative Organization (PAO) and Tambon (sub-district) Administrative Organization (TAO).

Local administrative organizations (LAOs) in Thailand are undertaking and promoting actions to steward environmental and biodiversity resources. While LAOs are required to formulate strategies for the administration of natural resources and the environment, most local authorities lack the resources and expertise to develop and deliver comprehensive local biodiversity strategies. It is also evident that local authorities lack the necessary capacity needed to adequately align their budgets with biodiversity conservation objectives. These challenges must be addressed in order to enhance biodiversity conservation efforts at the local level.

Currently, measures are being undertaken by The Royal Plant Genetic Conservation Project under Her Royal Highness Princess Maha Chakri Sirindhorn (RSPG) to address some of these underlying problems. This Initiative seeks to increase local biodiversity management capacity for LAOs by reaching 7,255 sub-districts nationwide under the

RSPG's 'National Reformation Plan on Natural Resources and Environment in the Issue of Reformation of Biodiversity' (2018-2021).

It should also be noted that RSPG has developed a 'Work Manual for Local Biodiversity Resources Database'. This Manual acts as a guideline for LAOs for how to integrate biodiversity-related activities into local development planning with some (albeit limited) guidance on budgeting considerations. RSPG provides guidance on what constitutes biodiversity-related activities – Outlining eight steps in detail and alongside guidelines for how to carry out each activity including data collection and annual reporting requirements. RSPG has requested BIOFIN support in further developing and strengthening these existing guidelines by placing greater emphasis on integrating biodiversity resource consideration at the fiscal budget preparation stage.

INVESTMENT CASE

- A key recommendation from the BIOFIN assessments in Thailand is to strengthen the role of local governments and communities in developing common frameworks around budgeting for biodiversity conservation and the enhancement of biodiversity resources.
- The central government is currently strengthening the capacity of local government in biodiversity management and the Department for Local Administration (DLA), in close collaboration with the Royal Plant Genetic and Conservation Project (RSPG), is open to developing policy guidelines for local biodiversity budgeting. The development of improved policy guidelines targeting LAOs will serve as the backbone to integrate biodiversity in local budgets and facilitating coordination of these efforts.
- Extending the role of key stakeholders and strengthening the LAOs through the establishment of a consortium or working group. The National Steering Committee of BIOFIN in Thailand will endorse the establishment of consortium. This will be instrumental to the development of improved policy guidelines and capacity development

of improved policy guidelines and capacity development plans in regard to budget allocations for biodiversity conservation at local level.

- As part of the capacity development plan, it is expected that a set of curriculum and training material is produced and tested.
- Training of Trainer (ToT) is also regarded as a key achievement for the replication of the policy guideline and strategic planning for LAOs with 76 LAOs championed by RSPG as the implementation target of this finance solution.
- The ownership of biodiversity issues will be strengthened and broadened to include all stakeholders including royal initiated projects, communities, local government, civil societies, economic and business institutions, with appropriate financial capacity and incentives to act.

Objective

This solution aims to consolidate and amend policy guidelines in order to enable LAOs to incorporate biodiversity considerations into the planning of their activities more effectively, particularly at the fiscal budget preparation stage. Working closely with the main finance and biodiversity actors in Thailand (i.e. DLA, FPO, RSPG and BEDO), this solution requires technical assistance and capacity development for its implementation. The successful adoption of the guidelines will enable LAOs to justify the incorporation of line items related to biodiversity in their budgets.

The specific actions to be taken include i) establish and empower a policy consortium or working group of relevant government agencies under the National Steering Committee of BIOFIN Thailand to develop a set of policy guidelines, ii) introduce a capacity development strategy (specifically regarding the use of budgetary allocations in support of biodiversity conservation), iii) develop training curriculum and materials, iv) build capacity of LAOs (through different modalities depending on the capacity development plan, v) provide Training of Trainers (ToT) for potential LAOs, vi) monitoring and evaluation of the effectiveness and useful of the curriculum and materials and, vii) collect information for knowledge management purposes.

Partners

Strategic partners for this solution are the Department of Local Administration (DLA)²⁴ under the Ministry of Interior (MOI), Royal Plant Genetic Conservation Project under Her Royal Highness Princess Maha Chakri Sirindhorn (RSPG), the Bureau of the Budget under the Office of Prime Minister, Fiscal Policy Officer under the Ministry of Finance, the Office of Natural Resources and Environmental Policy and Planning (ONEP) under MONRE, Biodiversity-based Economy Development Office (BEDO) under MONRE and NGOs/ lead local universities.

Action Plan

The creation of a 'consortium' – a working group comprised of key line agencies to provide advice and exchange technical knowledge, should be endorsed by the National Steering Committee of BIOFIN Thailand. It will consist of key governmental line agencies, led by DLA and RSPG. The DLA and RSPG will lead the process of implementation of the solution by undertaking the following key activities:

KEY ACTIVITIES

Establish a policy consortium of key stakeholders to ensure adequate participation in the process of defining the policy guidelines for LAOs



LEAD/KEY STAKEHOLDERS

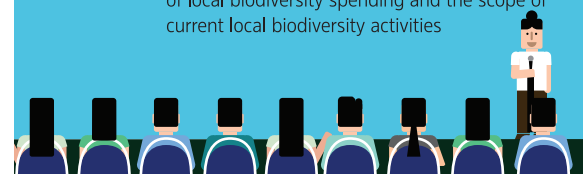
'Consortium' consisting of DLA, BoB, FPO, RSPG, ONEP, BEDO, LAOs, NGOs and universities

TIMEFRAME

2020

KEY ACTIVITIES

Review existing guidelines on integration of biodiversity at the local level, including estimates of local biodiversity spending and the scope of current local biodiversity activities



LEAD/KEY STAKEHOLDERS

BIOFIN; Policy specialist; NGOs

TIMEFRAME

2020

²⁴ The support provided by DLA is critical to the implementation of this solution due to the strong existing partnership between LAOs and DLA. The DLA has recently set up a new working unit entitled 'Division of Natural Resources'. They are therefore the main focal point to develop the envisioned guidelines as they work closely with RSPG to conduct trainings with LAOs nationwide. The DLA is the key agency for allocating budget, communicating policy, sharing information, building capacities of local administrative organizations and influencing LAO for various policy. In order to ensure the integration of biodiversity considerations by local government, the DLA will need to maintain a lead role as a gatekeeper and capacity builder collaborating on localizing government policy and various initiatives.

KEY ACTIVITIES

Propose new guidelines, incorporating input from stakeholders and finalize the revised guidelines for integration of biodiversity into LAO budgets



LEAD/KEY STAKEHOLDERS

BIOFIN; Consortium

TIMEFRAME

2020

KEY ACTIVITIES

Develop and test capacity development curriculum and training materials using individual academic experts from five universities under RSPG



LEAD/KEY STAKEHOLDERS

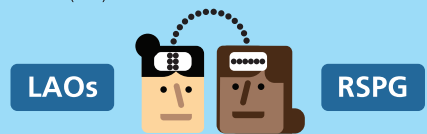
BIOFIN; Consortium; Universities

TIMEFRAME

2020–2021

KEY ACTIVITIES

Identify best in class LAOs (potential LAOs working with RSPG) as target for Training of the trainer (ToT)



LEAD/KEY STAKEHOLDERS

BIOFIN; Consortium; LAOs

TIMEFRAME

2020–2021

KEY ACTIVITIES

Organize the series of ToT for the selected LAOs to build capacity on policy planning, and budgeting for biodiversity.



LEAD/KEY STAKEHOLDERS

BIOFIN; Consortium

TIMEFRAME

2021

KEY ACTIVITIES

Develop sound M&E mechanism with reporting system in consultation with RSPG



LEAD/KEY STAKEHOLDERS

BIOFIN; Consortium

TIMEFRAME

2020–2021

4.4 PRIVATE SECTOR FINANCE SOLUTION

To explore the potential role and contribution of the private sector to the conservation and sustainable use of biodiversity in Thailand, this section identifies a set of scalable, innovative and effective solutions for biodiversity management and public-private partnerships. Finally, the launch of an impact investment and blended finance platform will aim to mobilize impact investment in biodiversity. In sum, these solutions make up a complete biodiversity investment framework intended to stimulate finance, investment and innovation for biodiversity impact.

4.4.1 FINANCE SOLUTION

Public Private Partnerships in Sustainable Mangrove Management in Phetchaburi

KEY FEATURES	Main Finance Mechanism	Impact investment
	Solution Type	Investment for sustainable mangrove management
	Source of funds	Private
	Instrument type	Market
	Finance result	Generate revenues

Context

Phetchaburi is a coastal province situated along the upper gulf of Thailand. Its shores are made up of combination of mangrove forests, mudflats, and sandy beaches. Phetchaburi is a leading province in lime and sea salt farming and is known as the 'capital of bird watching' in Thailand thanks to the variety of its natural assets. However, in spite of its many different valuable attributes, the majority of the province's biodiversity-rich mangrove forests – which cover 17 percent of the province - have been degraded. This has prompted the Ministry of Natural Resources and Environment to draft new regulations proclaiming the remaining pristine mangrove forests in Phetchaburi as a "Protected Conservation Mangrove Forest Area". The remaining pristine mangrove forests are to be managed by the Department for Marine and Coastal Resources (DMCR) which will

collaborate with communities, local governments and other groups working for the conservation and sustainable utilization the mangrove to promote social and economic development.

The on-going efforts of the Department for Marine and Coastal Resources to safeguard the remaining pristine mangrove areas in Phetchaburi Province, Thailand requires cross-sector collaboration in order to increase the effectiveness of mangrove conservation and management. Such cooperation requires raising awareness about the benefits and services provided by the mangroves. A localized biodiversity finance plan should be developed together with the DMCR and the Province of Phetchaburi in order to facilitate a comprehensive assessment of the financial resources necessary to fully implement the actions specified under the project's Masterplan²⁵.

INVESTMENT CASE

- The rich biodiversity of mangroves in Phetchaburi is an important asset to the province, providing valuable goods and services.
- The mangrove forests of the Project site have the potential to be utilized as destinations for ecotourism.
- Ecotourism activities are commonplace in the mangrove forests of Trang, Krabi, Phang-nga and Phuket on the Andaman coast and lessons learnt from experiences in these provinces could be applied to the mangrove forests in Phetchaburi.
- Ecotourism activities could provide benefits to local communities including new employment opportunities as well as opportunities

²⁵ The DMCR in collaboration with the private sector-Blue Carbon Society Association (BCS) is currently developing a Masterplan for integrating biodiversity safeguards and conservation into local social and economic development activities generated from the sustainable and eco-friendly utilization of mangrove forest resources in Phetchaburi province, Thailand. The Masterplan project aims to create a world-class 'Urban Mangrove Forest Showcase' at East Bang Taboon. This showcase will turn 400,000 sqm of mangrove forest into a model of inspiration for ecotourism and sustainable development. Reclamation here will also tackle river-borne plastic waste, which is known to harm marine animals such as Bryde's whales. The project includes a further 'pilot' reclamation at Pak Thale to find ways to sustainably rehabilitate salt farm areas.

to sell local produce and which could serve as an incentive for these communities to protect forest resources capturing the full benefits of the profound biodiversity of fauna and endangered migratory birds found in the mangrove areas in Phetchaburi.

- Phetchaburi province and DMCR will integrate biodiversity conservation into their general planning of coastal zone management.
- Current framework legislation require long-term coastal land use planning by mandating the protection and sustainable use of remaining pristine mangroves in Phetchaburi.

Objectives

The aim of this solution is to develop a biodiversity finance plan at the provincial level to support the project's overall efforts (i.e. the Masterplan), integrating biodiversity safeguards and conservation into local social and economic development activities related to the sustainable and eco-friendly utilization of mangrove forest resources. Based on the BIOFIN methodology, the biodiversity finance plan will identify the most suitable finance solutions as well as provide guidance on how to implement the finance solutions for longer-term, sustainable mangrove management. BIOFIN aims to promote the use of impact investments to increase the success and effectiveness of mangrove conservation investments and management.

Partners

The project seeks to promote collaborative efforts between the private and public sector to promote sustainable mangrove management in Thailand. The Department of Marine and Coastal Resources (DMCR) will be responsible for assisting activities undertaken at project sites, providing site information, promoting community participation and supporting training activities related to biodiversity conservation measures within the framework for local government planning, monitoring, and adaption of their land management. Collaboration with the private sector and NGOs will be facilitated by the Blue Carbon Society Association (BCS)²⁶ and its partner institutions (Research and Innovation for Sustainability Centre—RISC and DT Group of Companies—DTGO) who will instrumental in leading the development of the Master Plan and urban mangrove

²⁶ BCS acts as a community of "friends" who share a wish to protect, conserve, and nurture marine biodiversity and ecosystems to combat climate change. BCS's mission includes promoting the capacity of marine and coastal ecosystems as a carbon storehouse and conserving the biological diversity of marine and coastal ecosystems.

forest showcase. Other key partners include the Bird Conservation Society of Thailand (BCST), the Provincial Administrative Organisation (PAO) and Sub district Administrative Organisations (TAO), as well as local communities in Bang Ta Boon and Pak Thale²⁷.

Action Plan

The expected timeframe for the development of the Masterplan is 6 months after the signing of Memorandum of Agreement. Following its completion, the biodiversity finance plan can be developed and included in the overall master plan. Following this is key activities of proposed biodiversity finance solutions, including leveraging impact investment opportunities.

KEY ACTIVITIES

Conduct baseline analysis for biodiversity finance plan



LEAD/KEY STAKEHOLDERS

BIOFIN, BCS

TIMEFRAME

2020

KEY ACTIVITIES

Generate biodiversity finance plan containing a menu of finance solutions emphasizing impact investment opportunities for mangrove conservation and ecotourism development



LEAD/KEY STAKEHOLDERS

BIOFIN

TIMEFRAME

2020–2021

KEY ACTIVITIES

Support implementation and piloting of finance solutions and M&E



LEAD/KEY STAKEHOLDERS

BIOFIN; DMCR

TIMEFRAME

2021

KEY ACTIVITIES

Increase capacity of key stakeholders to ensure effective communication with potential donors and investors.



LEAD/KEY STAKEHOLDERS

BIOFIN; BCS; Impact investors

TIMEFRAME

2021

4.4.2 FINANCE SOLUTION

Public Private Partnerships in Sustainable Mangrove Management in Phetchaburi

KEY FEATURES	Main Finance Mechanism	Nutrient trading
	Solution Type	Creating a market for wastewater treatment
	Source of funds	Private
	Instrument type	Market
	Finance result	Generate revenues

Context

Thailand is experiencing major challenges related to water pollution and wastewater treatment. Rivers flowing through populated areas, such as the Bangpakong river, are easily polluted due to discharges²⁸ of waste-water from various factories. These discharges include agricultural fertilizers, pesticides, industrial waste, urban sewage, and pharmaceutical residues. This pollution poses a threat to biodiversity.

²⁷ Pak Thale, situated in the Inner Gulf of Thailand, is a coastal wetland of international importance for migratory shorebirds, especially the Critically Endangered Spoon-billed Sandpiper. A solution to the decline of migratory birds and sustainable development in Pak Thale, is to develop the site as a world-class bird sanctuary and wildlife tourist attraction while meeting the economic needs of local communities and supporting wildlife conservation.

One of the threats to the river and the estuary ecosystems in Thailand is the discharge of untreated wastewater from industrial, commercial, agriculture and residential sectors. While there are set standards for wastewater discharged²⁸ from these sources, monitoring has been inadequate and pollution control is ineffective. This solution aims to advance a trading scheme which rewards improved wastewater treatment, thus benefitting the biodiversity which is depending on the improvement of the quality of Thailand's rivers, in this case the Bangpakong. According to its 20 Year Strategic Plan, the Pollution Control Department (PCD) is trying to revitalize the principle of on-site treatment, the collection of wastewater fees and the use of innovative financing instruments. As such, the PCD is the lead implementing partner for this solution.

The development of wastewater treatment has not been sufficiently over the last years. Currently, only about 15 percent of the total volume of water consumed is treated wastewater, and many communities located along watercourses release wastewater directly into these rivers (ONEP, 2014). Furthermore, not all the existing wastewater treatment plants are currently operational. In 2016, 13 out of the 101 plants were non-functional, which the Pollution Control Department has attributed to insufficient budget allocations for investment and maintenance of plants by local administration organizations (PCD, 2017b). Meanwhile, the increasing population as well as the expansion of economic, agricultural and industrial activity combined with ineffective wastewater management and enforcement, are further increasing the pressure on the authorities to come up with solutions.

The Thai government has tended to focus on investments in hard infrastructure and supply-side solutions to water management (PRD, 2015), while demand-side measures have received little attention. Experience from countries such as the USA (e.g., Chesapeake Bay) could provide useful examples for the benefits of market-based approaches on water management, such as nutrient trading²⁹.

²⁸ The Pollution Control Department of Thailand has set up the water quality standards since 1994. The standards were served as guidelines of wastewater management. They are classified into five types as follows: Type 1: Extra clean for conservation purposes; Type 2: Very clean used for (a) consumption which requires ordinary water treatment processes (b) aquatic organism conservation (c) fisheries, and (d) recreation; Type 3: Medium clean used for (a) consumption but passing through an ordinary treatment process and (b) agriculture; Type 4: Fairly clean used for (a) consumption, but requires special treatment process and (b) industry; and Type 5: Waters are not classification in class 1-4 which is no water quality requirement and used for navigation.

²⁹ The Water Resources Act, 2018 contains sections supportive of the idea of employing a wide range of economic instruments. These include Section 14 on Policy and Master plan for management of water resources which should cover protection and restoration of water bodies; Section 75 on prohibition of any actions that will cause deterioration of water quality and water use, contaminate water bodies and ecosystems and Section 83 which discusses the polluters responsibility to pay compensation to any damages done to the natural water sources.

Nutrient trading is a potentially cost-effective solution for wastewater management in Thailand, even though it is a relatively new technique for Thailand. In practice, nutrient trading operates in the following way: representing the demand side, parties are obligated by law to treat wastewater and to comply with required standards. On the supply side, local governments are encouraged to invest in more wastewater treatment facilities, especially in communities located near riverbanks. Accordingly, a preference is established for small-scale wastewater treatment systems. This finance solution can be replicated on other major waterways which are facing the problem of nutrient and plastic pollution³⁰.

Nutrient trading works on the same principle as a Cap-and-Trade system. The idea is to determine the Total Maximum Daily Load (TMDL) and assign individual discharge limits to facilities. As wastewater treatment costs will vary, some firms may be able to comply with their individual discharge limits at a lower cost. Thus, the mechanism of Cap-and-Trade allows the higher cost facilities to buy credits from the lower cost facilities. This means that trade system would occur between firms which can treat their wastewater efficiently enough as to remain below their limit, and thus being able to sell the remaining credits to firms who are not able to stay within their allocated limit.

INVESTMENT CASE

- Thailand's wastewater sector is facing an uphill battle. Demand for water in the country's main economic sectors, such as tourism, industry and agriculture continues to increase. This is having a major impact on the country's fragile water infrastructure and resources. Current wastewater and sanitation infrastructure in Thailand is underdeveloped. There is an excessive discharge of industrial waste in rivers, causing water pollution, health problems and threats to biodiversity.

³⁰ In 2019, DMCR has listed the top five rivers in Thailand which have problems on nutrients and plastic pollutions, namely: Chao Phraya River, Tha Chin River, Mae Klong River, Bangpakong River and Bang Ta Boon River. For Bangpakong River estuary, it was estimated that dispersion of 6,630,835 pieces of plastic waste per year contaminated the river. This pollution entangled animals, injuring or killing birds, whales, dolphins, and fish in the area. The concentration of factories located along Bangpakong River are causing nutrients pollution, algae blooms, and killing aquatic biodiversity including giant freshwater stingrays, bottom-dwelling animals and ecosystem collapse.

- While important steps for improvement have been taken by the Thai government, many institutional, regulatory and budgetary obstacles remain unaddressed.

- According to estimates, an annual increase of 10 percent to the waste water treatment capacity is expected as a result of growing investment, although future political developments might delay investment. This potentially provides business opportunities and scope for public private partnerships.

- Water quality trading (nutrient trading) has gained interest among policymakers and companies as a viable market-based alternative to control water pollution.

- Sustainable wastewater management requires synergistic interactions among the government, private sector and community sector as a supplement to regulation.

Objective

The overall objective of this solution is to introduce nutrient trading for the Bangpakong river pilot site.

Partners

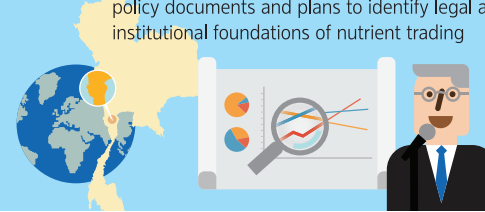
The principal actors involved are the Pollution Control Department (PCD) and the LAOs situated in the localities adjacent to the Bangpakong river where nutrient trading will be piloted. Other actors include the Provincial Environmental Office, the Ministry of Agriculture, Ministry of Industry as well as private sector organizations and NGOs.

Action Plan

As this solution is far-reaching and largely untested, the plan is to initially undertake activities aimed at improving understanding of the opportunities afforded by the policy framework and secure commitments from the necessary government partners regarding a framework for implementation. The PCD will lead the pilot implementation process of the solution by undertaking the following key activities.

KEY ACTIVITIES

Review national, provincial, and local legislation, policy documents and plans to identify legal and institutional foundations of nutrient trading



LEAD/KEY STAKEHOLDERS

PCD; Community and business representatives

TIMEFRAME

2020

KEY ACTIVITIES

FGDs with Point Sources Facilities and local governments on feasibility of nutrient trading system



LEAD/KEY STAKEHOLDERS

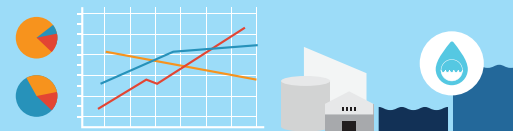
PCD; LAOs; Community and business representatives

TIMEFRAME

2020

KEY ACTIVITIES

Collect and analyze data on current wastewater discharge loads and NP contents



LEAD/KEY STAKEHOLDERS

PCD

TIMEFRAME

2021

KEY ACTIVITIES

Conduct the Controlled Environment Analysis (CEA) of various treatment options



LEAD/KEY STAKEHOLDERS

PCD

TIMEFRAME

2021

KEY ACTIVITIES

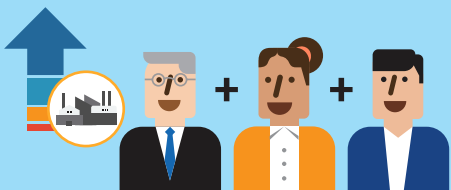
Developing pilot system for trading partners

LEAD/KEY STAKEHOLDERS

PCD; Community and business representatives

TIMEFRAME

2021



4.4.3 FINANCE SOLUTION

A Platform to Scale Impact Investment Opportunities in Biodiversity

KEY FEATURES	Main Finance Mechanism	Impact investment
	Solution Type	Investment for financially viable biodiversity actions z
	Source of funds	Private
	Instrument type	Market
	Finance result	Generate revenues

Context

Investing with the goal of generating social and environmental impacts as well as financial returns, also known as ‘impact investing’, is a rising trend in the region. Based on the report ‘Social Impact Investment Landscape in Thailand’ (UNDP & ChangeFusion, 2018), impact investment generally includes grants, loans and equity investments. In Thailand, \$73.3 million has been deployed by private impact investors and nearly \$1.6 billion deployed by development finance institutions between 2007 and 2017 (GIIN; Intelicap, 2018). Key sectors for investment include energy and financial services. The main source of impact investment in Thailand are international investors, but there are also some local investors and financial intermediaries. Much of the ecosystem for impact investing has been developed by the Thai government, though there are a few private-sector incubators and accelerators, such as ChangeFusion and Impact Hub. The government created the Thai Social Enterprise Office in 2010 to support and promote the growth of such organizations. As a result, the number of Social Enterprises (SEs) in

Thailand have been increasing rapidly³¹. However, many of these are young businesses which often have limited access to the capital necessary to scale up their businesses in the long term. While financial institutions, listed companies, and high net worth individuals have increasingly expressed their interest in impact investment, they have limited knowledge about the existence of SEs who are targeting social and/or environmental issues. This is known as the ‘missing middle’ gap between investors and SEs. Therefore, considerable effort is needed to create tools or platforms to connect these³².

With respect enterprises which produce biodiversity co-benefits, investments in these make up a small but growing part of the private capital being mobilized to do “good”. A big obstacle to the development of an impact investment market for biodiversity conservation is the lack of any long-term track record and the uncertainty regarding risk and return which make it difficult for investors to assess such investments (Global Nature Fund; OroVerde 2017). In order to minimize risks, investors usually reject investing in new projects, instead opting to invest in existing projects. There is also a lack of proper monitoring and reporting necessary to assess the performance of biodiversity impact investments. This is due to the complexity of measuring investment impacts, the lack of practical indicators and standards, and the costs involved. In Thailand, most environmental- and biodiversity-focused projects are project-based, rather than operating as a for-profit enterprise and are thus set up to receive their finance from grants.

A survey carried out by UNDP Thailand and ChangeFusion (2018) revealed that financial service providers and donor organizations in Thailand are crucial to delivering sustainable results, with the latter offering financial support to social enterprises in the form of grants, loans, or equity investment. ChangeFusion also discovered that sectors receiving considerable attention for impact investing is agriculture, sustainable tourism and environmental conservation with potential biodiversity co-benefits. Building on this, ChangeFusion³³ is now collaborating with UNDP Thailand to strengthen the SE

³¹ In Thailand, around 3 million registered SMEs and a number of other organizations operate with a social mission. Social enterprises operate in various sectors including health, education, workforce development, agriculture, and tourism. However, social enterprises and SMEs face a substantial financing gap (Ibid, 2018)

³² Globally there are still only relatively few projects attractive to investors related to the conservation of biodiversity, despite a growing demand for investments in nature conservation. Project templates, such as Encourage Capital’s blueprints for investing in sustainable fisheries, the Coalition for Private Investment in Conservation’s (CPIC) investment blueprints and California’s standardised conservation covenant template, can also help accelerate the process of developing and structuring projects while helping investors avoid high-risk projects.

³³ ChangeFusion provides incubation, business development and financial support to social enterprises and has more than 100 social enterprises in its network. ChangeFusion has also introduced several innovative financing models such as the social crowd funding platform, taejai.com and new types of mutual funds such as BKIND and the Thai Governance Fund through the collaboration with key partners across different sectors in order to mobilise resources on a wider scale to support social enterprises.

ecosystem in Thailand by bringing together impact enterprises and investors that would otherwise not meet, providing them with skills and toolkits necessary for scaling up their businesses, and developing innovative financing products to create investment market opportunities for SEs in Thailand. Crucially, there is a need to outline how investment market opportunities align with biodiversity objectives. This would require a thorough understanding of the linkages³⁴ between financial, social and conservation outcomes.

Objective

Considering these challenges, the aim of this solution is to build a stronger ecosystem for biodiversity impact investment in Thailand. It will support the development of a platform³⁵ bringing together enterprises promoting biodiversity and impact investors, providing them with the skills and toolkit necessary for scaling up their businesses, and developing innovative financing products to create investment opportunities for biodiversity impact in Thailand.

Partners

ChangeFusion will take the lead on the development of biodiversity impact standards for reporting, monitoring and data collection as well as compiling the Platform Listing. The Biodiversity-based Economy Development Office (BEDO) will be engaged to support the development of biodiversity impact indicators and proxies employed for impact measurement and provide technical support to listed projects in the process of carrying out impact measurement.

Throughout the process, partnerships will be sought with financial institutions, e.g. the Securities and Exchange Commission (SEC), the Stock Exchange of Thailand (SET) and the Sustainable banking partnership with Bank of Thailand. Among potential impact investors are Tiejai.com, TYPN network and other intermediaries, SE Thailand, and Ashoka.

³⁴ These linkages operate in several ways. Solving conservation challenges are often depending on solving social problems. Solutions must establish incentives for people at different positions in society to change their behaviors in ways which further the sustainable use of natural resources and ecosystems. For Thailand, this often includes embracing local wisdom and valuable local materials in product development. Promoting sustainability at the local level, e.g. adopting organic farming practices, using only natural, local ingredients in production, can bring about a substantial positive impact for the environment. Hence both social and environmental impacts are often tightly-knit rather than being mutually exclusive.

³⁵ Following Bertelsmann Stiftung, Sphaera & Artha (2018), the term 'platform' means a contemporary business model that connects people to each other, for the purpose of creating or exchanging value. As such, platforms consist of three layers: 1) A network, marketplace, or community; 2) A technology infrastructure where users engage with each other; and 3) Data that are generated by user interactions. The impact platform under consideration here focuses more on the network layer.

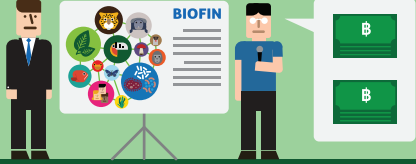
INVESTMENT CASE

- The Thai government can proactively support impact investing by offering incentives to the private sector to address pressing social and environmental issues (e.g., Thailand Board of Investment, SE Promotion Act).
- There is a rapidly increasing number of social enterprises in Thailand benefiting from various incubation programs such as Banpu Champion for Change, School of Changemaker, and social impact platform of the Stock Exchange of Thailand (SET).
- A rough estimation based on the 2018 survey, the following support has been provided to social enterprises in Thailand:
 - Grants** – THB 38 million (\$1.25 million)
 - Loans** – THB 3.5 million (\$115,614)
 - Equity Investment** – THB 15 million (\$495,492)
 - THB 38 million (\$1.25 million) for 49 projects (2014 – Q3 2019)
 - 6 projects** – environmental/biodiversity-focused (~12%)
 - THB 5,837,750 (\$192,840) to the 6 projects (~15%)

Action Plan

KEY ACTIVITIES

Establish framework for screening biodiversity enterprises for investment



LEAD/KEY STAKEHOLDERS

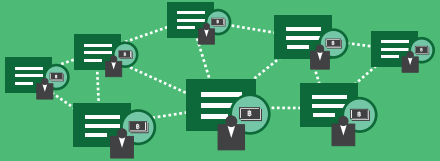
ChangeFusion; BEDO; UNDP

TIMEFRAME

2019

KEY ACTIVITIES

Lay down the foundation to promote common understanding among different stakeholders.



LEAD/KEY STAKEHOLDERS

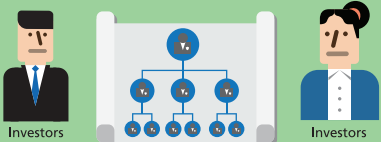
ChangeFusion; BEDO; UNDP

TIMEFRAME

2019

KEY ACTIVITIES

Select 20 exemplary biodiversity enterprises as an initial portfolio for raising awareness and interests among potential investors



LEAD/KEY STAKEHOLDERS

ChangeFusion; BEDO; UNDP

TIMEFRAME

2020

KEY ACTIVITIES

Groom selected biodiversity enterprises for investor matching



LEAD/KEY STAKEHOLDERS

ChangeFusion; BEDO; UNDP

TIMEFRAME

2020

KEY ACTIVITIES

Convene strategic stakeholders to co-develop investment products



LEAD/KEY STAKEHOLDERS

ChangeFusion; BEDO; UNDP

TIMEFRAME

2020

KEY ACTIVITIES

Facilitate investment deal



LEAD/KEY STAKEHOLDERS

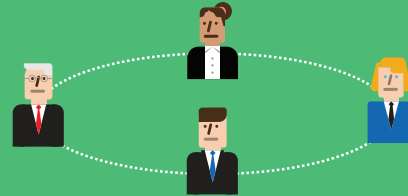
ChangeFusion; BEDO; UNDP

TIMEFRAME

2020–2021

KEY ACTIVITIES

Build investor community



LEAD/KEY STAKEHOLDERS

ChangeFusion; BEDO; UNDP; financial institutions; Impact investors; other intermediaries

TIMEFRAME

2020–2021

CONCLUSION



5. CONCLUSION

The Biodiversity Finance Plan (BFP) is a living document, intended to be owned and used by the stakeholders working for sustainable development, in particular within the biodiversity sector. It is a resource meant to aid in the development of biodiversity finance in Thailand and encourage such investments. The document may be updated as circumstances, needs and opportunities change. Its implementation will require a coordinated effort from the government together with the private sector and support from foundations, donors, and NGOs. If implemented, Thailand could increase the amount of funding available for biodiversity conservation. Doing so will contribute to closing the biodiversity finance gap and ensure a healthier and more sustainable environment for future generations.

The time frame of the Plan includes short (1-2 years), medium (2-5years) and long-term (5-10 years) considerations (see Action Plan below).

In the short term to medium term, the Action Plan calls on key stakeholders to provide direct support to its implementation by performing specific tasks, in accordance with the guidelines suggested in this BFP. During the implementation of this finance plan, the current BIOFIN governing body, namely the Project Steering Committee (PSC), should proceed with engaging those institutions and actors with a lead role in the realization of the planned finance solutions. Meetings between the National Economic and Social Development Council, the Ministry of Finance and the Ministry of Natural Resources and Environment should be held on a regular basis following through the list of options suggested for biodiversity financing. There may be a need to involve a group of legal and policy experts in regard to those finance solutions which would require a review of existing legislation. For example, some of the finance mechanisms proposed will require the development of a new cross-sectoral revenue earmarking policy and subsequent implementation.

Taking a long-term view, the initiative started by BIOFIN should be continued, enhanced, and embraced by the government and private sector alike. The creation of formal governance structures such as a Biodiversity Finance Unit (BFU) should ensure the continued sustainable implementation of the finance plan and its responsiveness to statutes in the Biodiversity Act. The BFU should be introduced as a high-profile entity to play an instrumental role in building a business case for increased biodiversity investments. The BFU, in partnership with Finance, Planning and Policy agencies, will

focus on its key mission: to support the implementation of biodiversity finance solutions at the local, national and global level in order to help Thailand tackle issues related to biodiversity finance. This long-term, integrated approach will create linkages between different sectors undertaking similar initiatives on biodiversity financing— those which align interests of people, profit and planet.

Thailand's Biodiversity Finance Plan Action Plan

SHORT TERM (1-2 YEARS)	Implement prioritised finance solutions during proposed pilot duration Scale up lessons learned from pilot/demonstration programs Generate and share information about the economic and business case for investing in conservation, within government agencies and the private sector and the general public. ☒ Commit to shared learning with key stakeholders and maintaining a national biodiversity finance plan embedded in the sustainable development process
MEDIUM TERM (2-5 YEARS)	Develop biodiversity-related laws and regulations Put in place policies, strategies and frameworks based on biodiversity-related risks and impacts which create incentives for long term investments in biodiversity Improve the reach of next generation NBSAPs including the post-2020 CBD framework by including a broader stakeholder base in consultations and project design as well as incorporate BIOFIN methodology notably the process of assessing financial needs to implement biodiversity actions
LONGER TERM (5-10 YEARS)	Set up a biodiversity finance unit responsible for monitoring the implementation of the biodiversity finance plan and coordinating initiatives related to biodiversity finance

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ANNEX

Annex 1: Problems, Solutions and Potential Finance Solutions

Terrestrial ecosystem		
PROBLEM	Forest landscape: Continued forest encroachment	Agricultural landscape: heavy use of chemicals that generate adverse impact on the soil and in the water sources. There is also health impact on the farmers themselves as well as on consumers.
SOLUTION	<p>Ensure that economic returns from keeping land as forest generates higher net welfare gains than conversion for alternative uses.</p> <p>Ensure that communities in the so-called buffer zones can generate sufficient revenue so that they function as living 'Buffers' to protect the 'Enclaves'</p>	<p>Convert negative subsidies to positive subsidies</p> <p>Measure the net returns from sustainable land management practices</p>
POTENTIAL FINANCE SOLUTIONS	<p>Payment for Ecosystems Services: targeting only buffer zone areas</p> <p>Voluntary carbon offsets: additional avenue for generating income for local communities through the sale of carbon credits from changes in carbon stocks in the forest areas they are tending to</p> <p>Ecotourism: selected buffer zones can be developed as ecotourism sites</p> <p>Biodiversity offsets: Selected Protected Areas and buffer zones can be restored as sites used for offsetting impacts from biodiversity resulting from development projects</p>	<p>PESAL: Payment for ecosystems services in agricultural landscapes: provide subsidies to farmers who adopt sustainable land management practices</p> <p>Bio-banking: A means of creating incentives for the protection of native flora and fauna species by valuing them as biodiversity credits which can be traded to compensate for residual impacts caused by investment projects in similar ecosystems which cannot be mitigated</p>

GROUNDWORK THAT NEEDS TO BE COVERED	<p>DNP has baseline data on carbon stocks for different types of terrestrial forest which can be used as baseline data; Nabangchang O. and Vincent J have investigated the economic value of forest water purification functions which are part of the ecosystems services of watershed forests.</p> <p>Further studies on the potential to generate revenue through voluntary carbon markets is needed; Need capacity building of local communities to monitor.</p> <p>Need studies that can demonstrate the economic returns from ecotourism in selected target sites.</p>	<p>The Economics of Land Degradation (ELD) Project conducted by the EEPSEA team in 2017 can provide economic rationales for Sustainable Land Management (SLM)</p> <p>i. Economic analysis of health impact from exposure to agricultural chemicals</p> <p>ii. Economic analysis of costs of water contamination for leakages of agricultural chemicals into the water sources</p>
Wetlands ecosystem		
PROBLEM	Conversion for alternative land use	
SOLUTION	Demonstrate the economic value of the ecological functions of wetlands as information for assessing and comparing the trade-offs from alternative land use	
POTENTIAL FINANCE SOLUTIONS	<p>Biodiversity offsets: For wetland areas considered for conversion, any future decision about conversion should take into account the three critical factors:</p> <p>Are there alternative approaches that would mitigate adverse impact on biodiversity?</p> <p>Can the adverse impact be minimized?</p> <p>What is the residual that needs to be offset?</p> <p>Wetland banking: The wetlands that can be developed as potential offset sites can benefit from this concept. By measuring conservation outcomes in markets where offset credits are tradable units of exchange defined by the ecological value associated with verifiable changes and management of a natural wetland habitat. A mitigation bank is a wetland, stream, or other aquatic resource area that has been restored and preserved for the purpose of providing compensation for expected adverse impacts to similar ecosystems nearby. The value of a bank is defined in compensatory mitigation credits that can be traded or sold. The combination of biodiversity offsets and wetland banking can link demand and supply for wetlands.</p>	

GROUNDWORK THAT NEEDS TO BE COVERED	Develop a standardized database outlining the ecological functions of wetlands		
	Continuously conduct valuation studies of the different types of economic uses.		
Marine and coastal ecosystem			
PROBLEM	Expansion of physical infrastructure investment in locations that have adverse environmental impacts	Destructive fisheries (IUU) sanctions	Marine National Parks and island destinations
SOLUTION	Adding a requirement that in addition to an EIA, an economic analysis must be conducted by professionals in the field	Withdraw adverse subsidies Provide positive incentives	Lack of sustainable flow of revenues to used for the protection and restoration of natural resources
POTENTIAL FINANCE SOLUTIONS	Biodiversity offsets as a condition for granting investment approval Performance Bonds Environmental Risk Insurance: This is a form of insurance which allows for near-immediate payouts enabling a timely response to environmental disasters.	Payment for Ecosystems Services (PES): to engage coastal communities dependent on fishery in activities related to the protection and conservation of habitats such as mangroves, seagrass and coral reefs engage service providers in efforts to protect and restore coral reefs as well as other coastal and marine recreational sites Sustainability standards for fish harvest from non-destructive fishing practices Impact investments targeting in seafood industries	Introduce visitation fees in island destinations outside of Marine National Parks Impact Investment. For innovative investments to protect or reduce the pressure on natural resources base

GROUNDWORK THAT NEEDS TO BE COVERED	Develop a standard database of ecological functions	Conduct an economic analysis of habitat protection and conservation costs as well as an economic analysis of the economic benefits of ecosystem services provided by these three habitats	Review the institutional and legal framework for collecting island visitation fees
	Gradually conduct valuation studies of the different types of economic uses of coastal and marine ecosystem	Research the willingness of consumers to pay a premium price Conduct a cost benefit analysis of the investments to demonstrate the net welfare gain	
Urban ecosystem			
PROBLEM	Urban biodiversity		
SOLUTION	In addressing problems of plastic pollution, BIOFIN will focus on actions which will reduce the pressure not only on urban ecosystems but also on the coastal marine ecosystem		
POTENTIAL FINANCE SOLUTIONS	Sustainability standards Impact investments targeting at selected businesses that produces or uses plastic Providing tax incentives for investments that involve innovative technologies for reducing or removing plastic waste which ends up in natural habitats		
GROUNDWORK THAT NEEDS TO BE COVERED	Conduct market research on willingness of consumers to pay a premium price Carry out a cost-benefit analysis for investments to demonstrate the net welfare gain.		

BIOFIN Thailand

Implementing Finance Solutions is key for Thailand's biodiversity and sustainable development



Implementing Finance Solutions is Thailand's response to the biodiversity finance challenge. In Thailand, the finance gap to achieve national biodiversity targets is estimated to be around USD 315 million per annum. To put this in perspective, this is more than twice the budget for biodiversity-related expenditures estimated in the Biodiversity Expenditure Review.

Budget for achieving national biodiversity targets

Finance Gap USD 942 million (2019-2021)

With a large financing gap to be filled, efforts towards achieving national biodiversity targets needs to be stepped up.

The objective of BIOFIN is to support the Royal Thai Government to develop a strong business case to increase investments aimed at promoting biodiversity conservation whilst enhancing the use of finance solutions at national and local levels. While these finance solutions focus on government-led action, there are many opportunities to share the responsibility of these actions with NGOs and the private sector.

Our strategy

- To improve the effectiveness and biodiversity impact of current public budgets, in particular at the local level
- To assess, facilitate and intensify the participation of the private sector and civil society in biodiversity conservation and management in the country.
- To innovate in market mechanisms that contribute to the mobilization of private finance.

Budget for biodiversity-related expenditures



Koh Tao Model



Increasing sources of revenue for coral reef conservation and pollution management in Koh Tao & improving delivery mechanisms through establishment of a conservation fund/ foundation

The finance solution will see the introduction of an **Environmental Management Charge** collected from tourist visitors to the island of Koh Tao, Thailand.

The expected financial impact is approximately **USD 1.5 million per year** based on the upper number of tourist visits to Koh Tao (500,000).

Why Koh Tao?

Located in the Gulf of Thailand, Koh Tao's popularity means the island receives a large number of visitors per year – approximately 300,000-500,000 people, leading to the deterioration of the island's natural capital therefore requiring urgent attention, increased resources and more effective management to ensure the island's sustainable future.

Ten years ago, the concept of having a self-financing mechanism for mobilising financial resources for conservation was already being discussed by local stakeholders. Today, the direct link between conservation and income from user charges makes biodiversity conservation a strong economic motivation.

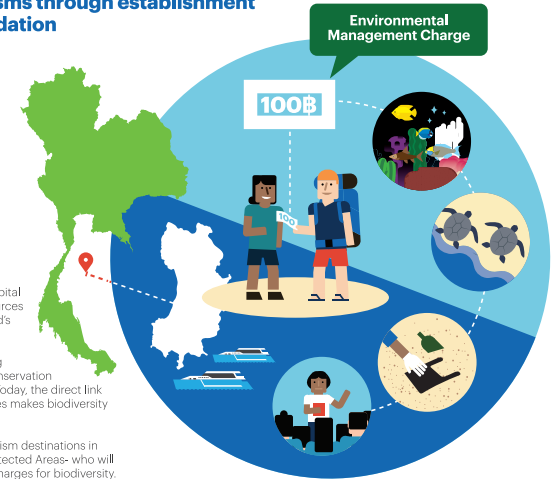
Lessons learned will be shared with other island tourism destinations in Thailand - both Marine Protected Areas and non-Protected Areas- who will benefit from the experience of implementing user charges for biodiversity.



Tourism-based revenues:

As one of the largest contributors to Thailand's GDP (approx. 18%), the tourism sector has the potential to generate substantial funding for biodiversity conservation.

Nature-based tourism sites such as the island of Koh Tao offer huge potential for revenue generation amidst the environmental challenges which we know need to be addressed urgently.



Key steps:



Conservation License Plates

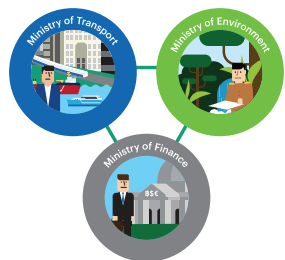
Deployment of conservation license plates to support tiger conservation at the Western Forest Complex

BIOFIN is advocating a mechanism to mobilise funds from sales of Wildlife Conservation License Plates as a channel to collect voluntary payments from vehicle owners in Thailand.

Thailand's Protected Area

Western Forest Complex
Biggest and connected pieces of forest in total of 18,727 Square Kilometers (11.7 million Rai) / (622,200 Hectares)

A new cross-sectoral policy and practice will be developed to make sure that sufficient resources are made available, spent wisely and administered efficiently to enable effective tiger conservation and protected area management in the Western Forest Complex, Thailand.



37 million vehicles in Thailand



Conservation license plates are 'special' license plates that are sold at a higher price to car owners. The extra income is channeled to environmental causes/ biodiversity conservation.

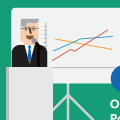
Implementation Steps:



1 Feasibility Assessment



2 Market Survey



3 On-going Policy Dialogue

- Working level with Department of Land transport legal team and Ministry of Finance
- Policy advocacy with Permanent Secretary of Ministry of Natural Resources and Ministry of Finance
- High level political dialogue between UNDP, Minister of Transport, and Ministry of Finance

Impact Investment

Impact Investments for mangrove rehabilitation in Phetchaburi: A Public-Private Partnership model

Public-private collaboration in coastal resources land use planning for mutual benefits of people and planet, as well guidance on implementing finance solutions for longer-term sustainable mangrove management

Master Plan

Development of a provincial land use 'Master Plan' to sustain biodiverse coastal ecosystems as well as securing socioeconomic benefits to surrounding communities

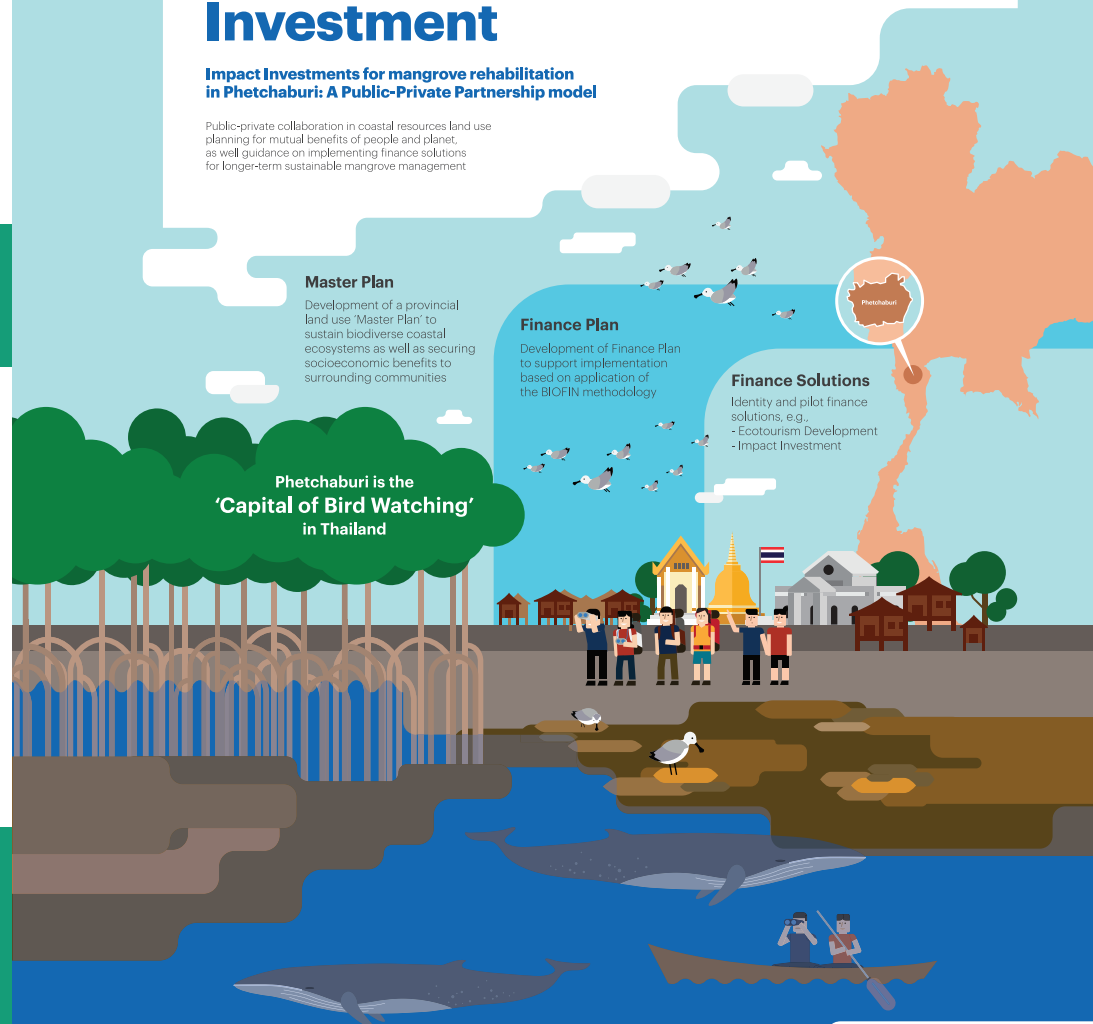
Finance Plan

Development of Finance Plan to support implementation based on application of the BIOFIN methodology

Finance Solutions

Identify and pilot finance solutions, e.g.,
- Ecotourism Development
- Impact Investment

Phetchaburi is the 'Capital of Bird Watching' in Thailand

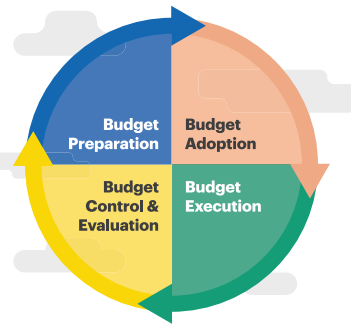


Local Budgets for Biodiversity

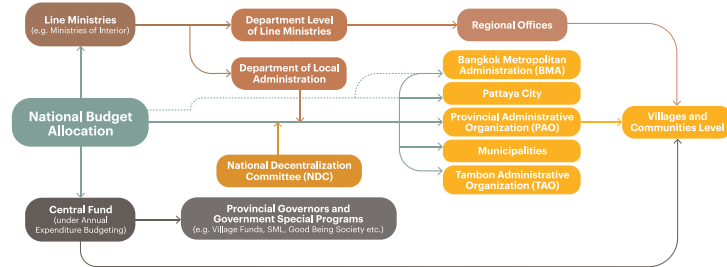
Guidelines for increasing effectiveness and biodiversity impact of local budgets

Local administrative organisations (LAOs) in Thailand have a front line role in managing biodiversity resources. While LAOs are required to have strategies related to natural resources and environment, most local authorities lack the resources and the expertise to plan and deliver comprehensive local biodiversity strategies.

The aim of this finance solution is to develop policy guidelines in order to more effectively prioritise biodiversity within local budgets. Working closely with the Department of Local Administration (DLA), the solution entails the development of training modules for LAOs to build capacity to implement the improved guidelines.

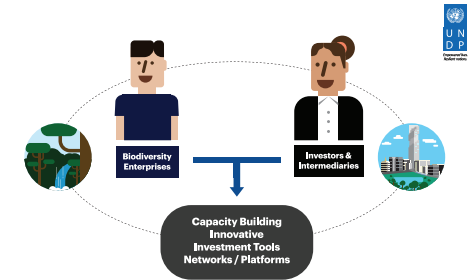


Budget Allocation to Local Administration



Impact Investment: A finance solution for biodiversity

BIOFIN20-2020 : Bridging the gaps and opportunities



Impact standard development & data collection

- Expand number of supporters surveyed
- Develop impact measurement framework and impact proxies with field experts

Environment
Social
Governance

BIOFIN20 Listing

- Establish Thailand's first biodiversity-focused Enterprise

Investment product piloting, investment deal facilitation & Biodiversity Impact Investment community building

- Develop proposals for investment solutions base on existing biodiversity focused initiatives
- Conduct pilot test

Impact acceleration

- 5 enterprises to be selected from Biofin20 for acceleration

FINANCE FOR NATURE

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