Darwin Initiative Main Annual Report

To be completed with reference to the "Project Reporting Information Note": (https://www.darwininitiative.org.uk/resources-for-projects/information-notes-learning-notes-briefing-papers-and-reviews/).

It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

Submission Deadline: 30th April 2022

• Darwin Initiative Project Information

Project reference	28-015
Project title	Delivering public-private partnerships to benefit farmers and biodiversity in Sulawesi
Country/ies	North Sulawesi, Indonesia
Lead partner	Wildlife Conservation Society
Project partner(s)	BNWNP - Bogani Nani Wartabone National Park Authority, PT Cargill, Forestry Agency of North Sulawesi Province, FMU II - Forest Management Unit II - Bolsel - Boltim, Bappelitbangda - Research and Development Agency of Bolaang Mongondow Selatan District, POLIMDO - Manado State Polytechnic
Darwin grant value	£ 498,467.00
Start/end dates of project	1st July 2021- 31st December 2023
Reporting period (e.g. Apr 2021 – Mar 2022) and number (e.g. Annual Report 1, 2, 3)	July 2021-Mar 2022, Annual Report 1
Project Leader name	Jeni Pareira
Project website/blog/social media	https://www.wcs.org/
Report author(s) and date	Danny Rogi, Juita Wilna Ningsih, Iwan Hunowu, Titiek Setyawati, Adhie Trisna, Christine Margaretha Batubara, Astrid Soraya Fitriani, Leonie Lawrence, Jeni Pareira. June 7, 2022

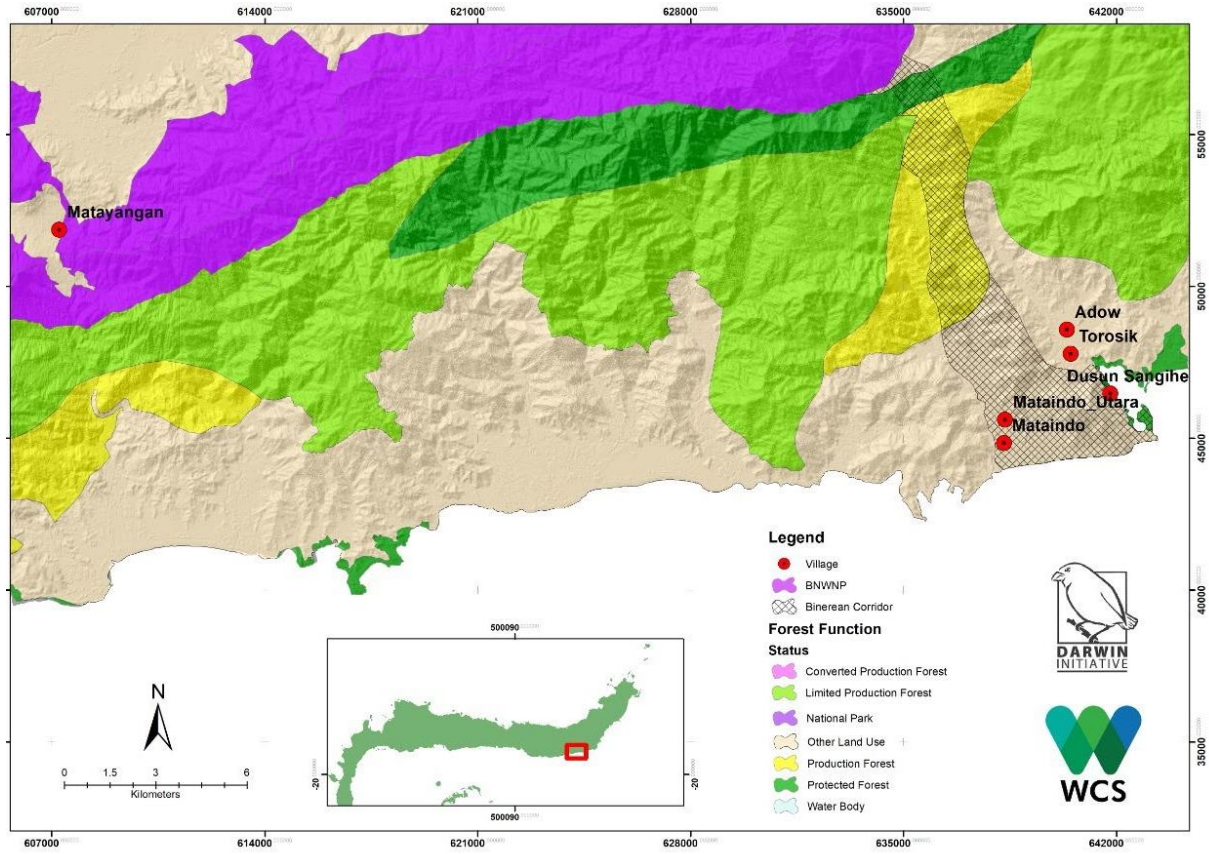
1. Project summary

Sulawesi has a remarkable diversity of terrestrial flora and fauna and rich coastal marine life. The focal landscape for the project is Bogani Nani Wartabone National Park (BNWNP) (2,871 km^2) - Sulawesi's largest protected area - and its southern buffer zone, which comprises the Forest Management Unit (FMU; 1,394 km^2), which itself includes the gazetted Binerean wildlife corridor (Figure 1). The Binerean Corridor is located in Pinolosian Tengah District, South Bolaang Mongondow Regency (Bolsel). There are 4 villages in this corridor: Mataindo, North Mataindo, Torosik, and Adow. This landscape provides habitat for a number of endemic and endangered species (including maleo/*Macrocephalon maleo* and the black-crested macaque/*Macaca nigra*) and is particularly important for Maleo, who use the area as a corridor between nesting sites at the beaches and protected forest. Of the 36 known nesting sites in

North Sulawesi, the birds have abandoned approximately 50%, and the global population is now estimated at fewer than 5,000 birds.

Forests in these areas are bordered by rural farming communities, who mainly grow coconuts to produce copra. Despite high international demand, falling yields from old coconut palms and low market prices for copra over the past decade - as well as the dynamics of land ownership and management, whereby collectors often manage coconut plantations and farmers themselves then grow crops in additional areas - means that many farmers have cleared new forest areas to plant other crops. This is leading to increased conversion of biodiversity-rich forests, threatening connectivity for the key wildlife species. At the same time, increased conversion leads to the degradation of critical watershed forest; increasing flooding risks for communities farming in the area.

Bolsel has a population of 66,071 people, >50% of whom rely on farming (primarily coconuts) for their main income. Bolsel has the lowest Human Development Index in North Sulawesi (65.3 vs the 73.0 provincial average), and most farmers live on an average income of <GBP110/ month.



Source from WCS-IP

Figure 1. Project sites in North Sulawesi Province

WCS has a good understanding of the challenges in this area, having been active in the landscape since the late 1990s. Preliminary supply chain assessments by WCS prior to project initiation have identified some of the challenges facing farmers in the landscape and identified opportunities to improve yields and supply chain sustainability for buying companies, including PT Cargill, which is a major buyer of copra in the region.

Through a community, government and private sector partnership, the project will support coconut farmers, reduce forest threats and restore critical watersheds in North Sulawesi. Community conservation commitments alongside agricultural training will support biodiversity-friendly production and improve farmer livelihoods through higher yields and diversified incomes. Forest restoration will reduce flooding, while collaborative management between government and communities, underpinned by a robust monitoring system, will ensure the future protection of forests and biodiversity, and demonstrate a scalable model for the region.

In the short-term, the project will improve rural livelihoods through community engagement and training for >500 farmers. This will support the uptake of more sustainable agricultural practices. These direct beneficiaries are then expected to see improved indices for well-being, including a 10% increase in household income as a result of project support, thereby increasing overall economic security. Participating farmers will receive GAP training, financial literacy training, exposure to new technologies, support for income diversification and improved access to finance to support business investment and planning, and improved access to market. This will provide long-lasting benefits for the participating farmers beyond the project lifespan and to a wider group within the community through the learning exchange process.

Implementation of the co-management plan and improved capacity of FMU staff, community-government patrol teams, and improved community awareness are expected to reduce habitat fragmentation, poaching and other threats to biodiversity, and initiate habitat restoration in the short-term. This is expected to support the protection of the four priority MoEF species that are endemic to Sulawesi: lowland anoa (EN); babirusa (VU); black-crested macaque (CR); and, maleo (EN), increasing population trend trajectories by at least 10% (relative abundance and/or occupancy) in the project time-frame. Further benefits to biodiversity are anticipated as restoration activities progress and FMU management continues into the future, supporting enhanced landscape connectivity and recovering former parts of species' ranges. At the same time, support for improved farmer livelihoods through more sustainable and resilient agricultural practices and the development of conservation agreements is expected to reduce deforestation by at least 20% within the project timeframe, leading to longer-term benefits as zero deforestation agricultural production demonstrates benefits over forest clearance leading to wider uptake across the landscape. The co-management plan is expected to provide a strong foundation for longer term collaboration among stakeholders led by the government, to support the conservation of this critical landscape.

2. Project stakeholders/ partners

WCS leads on and coordinates the delivery of all project outputs in partnership with government, community and private sector partners. This includes leading on the development of a landscape assessment framework and monitoring system; developing and delivering a farmer training and capacity building programme, and facilitating the development and adoption of a co-management model for the landscape with key government and community stakeholders. Some stakeholders/ partners involved in the project are:

- BKSDA North Sulawesi - With WCS, BKSDA North Sulawesi focuses on the protection and security of biodiversity and habitat outside of the National Park in North Sulawesi. In the implementation of this project, we maintain close coordination with BKSDA as under its mandate it can bring together all stakeholders including the FMU and BNWNP Authorities and district government into the KEE (Essential Ecosystem Area) forum. In the longer term, BKSDA will play a key role in coordinating the KEE forum and in the conservation of key species in the landscape.
- BNWNP Authority - The BNWNP Authority works with WCS to establish the framework and monitoring system for biodiversity and deforestation, conducts forest patrols and the rehabilitation of priority areas within the national park and in collaboration with the adjacent FMU. BNWNP leads discussions within the Government Working Group under a multi-stakeholder forum including the development of a co-management plan. In the longer term, BNWNP will play a key role in the implementation of the co-management plan.
- Forestry Agency of North Sulawesi Province - In this project, the Provincial Forestry Agency provides the forest administration framework for all project interventions in the Production Forest Management Unit II, which is in the buffer zone of BNWNP.
- Forestry Management Unit II - Bolsel Boltim (FMU II) - In this project, we will fully operationalise this system and together with the BNWNP Authority, establish a joint patrol system to cover the project landscape. FMU II Bolsel Boltim together with BNWNP will lead the development of a co-management plan with communities and in the longer term will implement the plan in the FMU area.
- Bappelitbangda/ Research and Development Agency of Bolaang Mongondow Selatan District - Bappelitbangda supports the establishment of a monitoring system, particularly for socio-economic indicators and supports training for enumerators, to develop and deliver the socio-economic survey.

- Polimdo/ Manado State Polytechnic - In this reporting period, some aspects of the project focus on value chain assessment and identifying associated opportunities for community support, particularly through the development of additional sources of income. Polimdo has been supported by the UK Embassy, in collaboration with the International Labour Organization (ILO), through the UK Skill for Prosperity project. During the proposal development process, the UK Embassy introduced us to Polimdo. We will continue working with the Polimdo to develop applied technology to improve the community's biodiversity-friendly farming practices.
- PT Cargill - PT Cargill provides co-financing for the project and is jointly developing a strategy to support farmer interventions. In this first year of the project, we have been working with the PT Cargill team to build their understanding of the project area and will design and develop a joint work plan to provide technical assistance to coconut farmers in line with PT Cargill's corporate social responsibility (CSR) and sustainable supply chain strategies.

3. Project progress

3.1 Progress in carrying out project Activities

Output 1: An assessment framework and monitoring system is established across the landscape, enabling the BNWNP and FMU authorities and the multi-stakeholder partnership to implement and adapt approaches within a forest management strategy that integrates forest protection, restoration and sustainable agricultural production.

Activity 1.1. Develop biodiversity, farmer socio-economic, flooding and deforestation indicators in c*onsultation with project stakeholders*

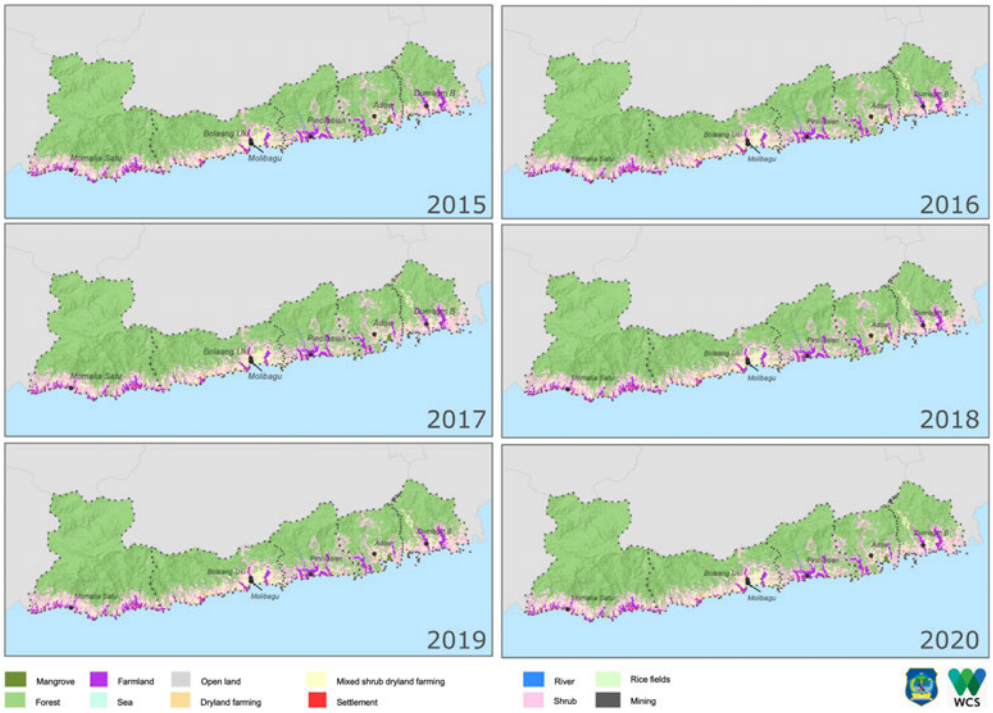
We are currently focusing on the development of indicators for biodiversity, farmer socio-economic data, flooding, land use and deforestation. We are using biodiversity indicators as established by the BNWNP.

To develop flooding and deforestation indicators, we have focused on two complementary analyses and associated engagement. On 14-15 March 2022, WCS supported Bogani Nani Wartabone National Park (BNWNP) Authority in holding a Focus Group Discussion (FGD) in Kotamobagu to present the indicators and results of sedimentation modelling analysis for Bolsel District (Annex 4.3) . This study applied spatial and temporal analysis, remote sensing, and Geographic Information Systems (GIS) to calculate the amount of soil erosion and sediment into the rivers in three areas including High Conservation Value (HCV) areas, Forest Management Unit (FMU) II Bolsel Boltim, and Essential Ecosystem Areas (KEE). The study also developed a model to predict future deforestation in the landscape.

To establish socio-economic baselines and indicators, we have developed a socio-economic survey with input from the Bolsel Development Planning Agency and other relevant district agencies. We are in the process of implementing this socio-economic survey to establish the baseline for these indicators (see activity 1.4).

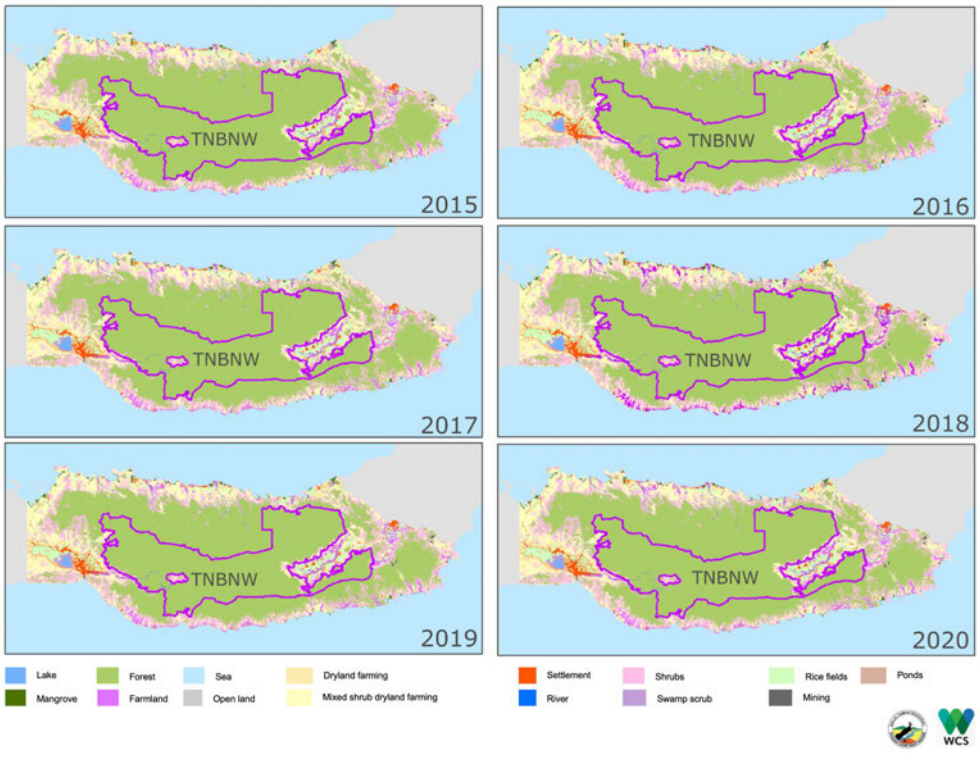
Activity 1.2. Develop a land-use monitoring system to establish farmland, forest and flooding risk baselines, identify priority areas, create deforestation alerts and monitoring project progress

We are focusing on the development of project baselines across several different areas (biodiversity, farmer socio-economic data, flooding, land use and deforestation). A land cover map for 2015-2020 for the BNWNP landscape, including Bolsel (Figure 2) and the BNWNP (Figure 3) has been developed, providing the baseline for farmland and forest areas.



Source from WCS-IP

Figure 2. Bolaang Mongondow Selatan Land Cover Map 2015-2020



Source from WCS-IP

Figure 3. Bogani Nani Wartabone Land Cover Map 2015-2020

To develop the flooding risk baseline, we commenced a spatial analysis using a remote sensing approach and GIS to calculate soil erosion and predict the amount of sedimentation in the downstream area of the watershed and in the coastal area near the estuary. To create the sedimentation model over time, we applied multi-time series modelling for the year of 2000, 2010, and 2019 with predictions for 2030-2050 at 10-year intervals, using resolution of 250x250m pixels.

According to the forest and flooding risk analyses, FMU II is predicted to have a forest area of approximately 70,000 ha (80.5%) by 2050 with 7.6% predicted deforestation from 2019 to 2050 and estimated 11.7% historic deforestation from 2000 to 2019. For the Binerean Essential

Ecosystem Area, it is predicted that the forest area in 2050 will be 47.2% of the current extent. However, this study has limitations, including its large study area, a relatively coarse unit of analysis of 250m, and limitations in reference data for measuring accuracy (including limitations of soil, rainfall, and seawater data). Sedimentation levels in Bolsel ranged from very low to very high, with the majority (53%) falling into the low and medium categories (29%). These analyses predict that watersheds with high sensitivity to land cover changes will experience low deforestation and, conversely, that watersheds with low sensitivity to land cover changes will experience higher deforestation (Annex 4.4.).

Activity 1.3. Conduct biodiversity surveys and assess trends of priority species and their forest habitat across the landscape

At the end of 2019, WCS and BNWNP Authority conducted a biodiversity survey with a total of 208 grids surveyed, with 4,389 of days that cameras were active. This survey produced 316,965 images. The camera trap survey recorded 47 animal taxa, including the key species such as Anoa (*Bubalus depressicornis*), Babirusa (*Babyrousa celebensis*), Maleo (*Macrocephalon maleo*), Sulawesi weasel (*Macrogalidia musschenbroekii*), crested macaque (*Macaca nigra)* and Gorontalo macaque (*Macaca nigresens)*. The WCS team applied Ecological Niche Mode and Maxent in software R to determine the monitoring location of two key species, Anoa and Babirusa. The distribution of these two species overlaps with the niche of around 0.91. Our analysis found that Anoa is much easier to detect in locations that are far from human presence such as far from the road. Meanwhile, elevation is also a factor that affects Anoa occupancy rate in BNWNP, with a higher occupancy rate in the high altitude area, which is also difficult for humans to access. Similar to Anoa, the road is the key factor affecting the occupancy rate and probability for detection of Babirusa. Babirusa is easily detected in locations that are far from human presence and tend to use forest areas as its habitat.

Bogani Nani Wartabone National Park and WCS conducted a camera trap survey, replicating the same methods across 50 grids in 2021. The field survey was conducted between June 14th – October 5th, 2021, followed by data entry, analysis, and reporting. A total area of 44,964 hectares was surveyed, with a total of 4,794 active trap days/ nights. There were 50 active cameras in this survey, which produced 39,927 images, of which 11,806 (around 30% of images) captured wildlife images. The survey was conducted at an altitude of 404 -1,456 masl (mean = 1043.7 masl). We estimate the number of species captured to be 211. We calculated the accuracy using R software, which found an increased number of species (exact) at the BNWNP monitoring site. We compared the occupancy rate from the previous survey. The estimated occupancy of anoa in 2021 is 0.53 (95% Confidence Interval 0.34-0.73; Standard Error=0.09) indicating an increase of 12% from the previous survey (0.43; 95% Confidence Interval 0.23-0.63; Standard Error=0.09). Meanwhile, the estimated occupancy of babirusa also experienced a significant increase of 26% in 2021 (0.59 with a 95% Confidence Interval 0.43-0.76; Standard Error=0.08) compared to the previous survey, which was 0.33 (95% Confidence Interval 0.18-0.47; Standard Error=0.08).

During this reporting period, BNWNP and WCS continued maleo bird surveys using satellite telemetry (GPS tagging) and Passive Integrated Transponder tagging (PIT tagging). The main objective of the survey is to understand the home range and distribution patterns of maleo in the BNWNP landscape. Adding to the previous seven adult maleo birds that have been tagged, the team has successfully installed three more GPS tags during this period (bringing the total tagged to 10 individuals). We will continue to monitor the movement of these 10 maleos to get comprehensive data on home range and distribution to inform the conservation strategy.

Activity 1.4. Conduct farmer surveys to assess socio-economic conditions of farmers across the landscape interviewed and willing to provide information. The results from this survey are still being processed as it is still in progress and will be carried out until June 2022. Meanwhile, following the socio-economic survey in the 3 villages, we will establish baselines for socio-economic

In 2021, we have started to develop the design of the socio-economic survey (Annex 4.5.), which will use open source KOBO toolbox. In general, many of the coconut farmers in this landscape are also fishermen. As the target communities are the same, to increase efficiency, and ensure streamlined engagement with and ultimately support for communities, we have combined the socio-economic survey for both fishermen and coconut farmers, to avoid confusion

and double surveys at the community level. Until March 2022, the WCS team completed the socio-economic survey in 3 villages; North Mataindo, South Adow, and Matayangan with a total of 141 respondents and 6 key informants. Some of the challenges during the socio-economic survey included that when respondents were asked to indicate the location of their plantations, some did not want to be interviewed for various reasons. However, others were eager to be indicators and develop an outreach and community engagement strategy to support the uptake of biodiversity-friendly farming practices (see Output 2).

Output 2: >500 smallholder farmers in Bolsel are committed to forest protection and restoration, and have viable livelihoods from sustainable agriculture practices, supported by a multi-stakeholder partnership

Activity 2.1. Engage government, private sector and community stakeholders to establish a multi-stakeholder forum that develops a strategy for integrated forest protection, restoration and sustainable agricultural production

In 2021, the WCS team has engaged with stakeholders in key government agencies, such as the Regent of Bolsel, Assistant II of the Regent on Economy Development Affairs, Head of Research and Development Agency, Head of Tourism Agency, Head of Environmental Agency and Head of Development Planning, Secretary of Bolsel District, Head of Planning of FMU II Bolsel Boltim, BNWNP authorities and Forestry Development Research Studies. WCS has begun to get information on issues, programs, activities by relevant parties. WCS has also attended a meeting held by the Regional Government of Bolsel regarding land use planning (KLHS RTRWP) in Bolsel and Forestry Development Research Studies. In a meeting with FMU II Bolsel Boltim, there are farmer groups under social forestry schemes in Mataindo, Mataindo Utara, Torosik and Adow. These farmer groups are being assisted by FMU II Bolsel Boltim. These activities will be important to align with the development of an integrated strategy. WCS has been coordinating with village authorities in Pinolosian Tengah subdistrict, including the Head of Mataindo Village and the Head of Hamlets 1,2, 3 in this village. The WCS team also engaged the Head of Mataindon Utara Village, the Secretary of Torosik Village and the Head of Hamlet in this village, two community leaders in Deaga Village and community members of Modaga in Molibagu village. WCS has also held two coordination meetings with PT Cargill, and agreed to share an initial work plan for co-development and agreed to have regular coordination calls every two months.

In February 2022, WCS supported BNWNP to hold a meeting in Deaga on local regulation No. 2 of 2021 regarding the Tanjung Binerean corridor wildlife refuge. The purpose of this regulation is to protect Maleo's nesting grounds and the corridors that contribute to its existence and thus supports forest protection, restoration and the adoption of sustainable farming practices. Following up on this discussion, WCS facilitated meetings in three pilot villages (Mataindo, Mataindo Utara and Torosik) in collaboration with the Bolsel district and Pinolosian Tengah sub-district governments to support this local regulation. Following this, the Tanjung Binerean Wildlife Corridor Essential Ecosystem Management (KEE) Forum meeting was held in Kotamobagu, during which, the WCS team presented the results of the HCV assessment in Bolsel District.

The KEE Forum (Essential Ecosystem Area Forum) is a co-management governance structure and associated target landscape, which has been prioritized for the implementation of essential ecosystem area activities. It is an adaptation of the Landscape Management model that was developed to govern and manage forest resources and HCV areas more effectively. It was specifically designed to align the program for the management of the Tanjung Binerean Wildlife Corridor (KEE) by updating information and reporting on progress for 2021, as well as developing a programme plan in 2022 which includes agreement on protocols for carrying out the KEE activities. The KEE Forum consists of representatives from relevant government agencies, civil society organisations and the private sector. In the meeting, the Head of the KEE forum explained the latest status of KEE activities based on the KEE Management Action Plan for 2021-2025, and PT Cargill Indonesia informed of their CSR/ sustainable supply chain strategy and activities, including opportunities to support community development around the KEE (Annex 4.6). WCS is working with stakeholders to assess the feasibility of strengthening this existing multi-stakeholder forum in Bolsel District and to support the development and implementation of a strategy for integrated forest protection, restoration and sustainable

agricultural production, as well as to initiate the discussion on the development of a co-management plan.

Activity 2.2. Conduct farmer needs assessment, including knowledge and application of GAP, farmer organisation, assessment of access to inputs, markets and finance

The WCS team identified coconut farmers in the five priority villages and conducted a rapid assessment while waiting to conduct a more comprehensive socio-economic survey (in line with the preparation and permitting process). This activity has just started with implementation in three hamlets in Mataindo village. The plan will continue in hamlet 2 and 1, then to other villages (Torosik, North Mataindo, Adow and Molibagu).

For the rapid assessment in early 2022, WCS conducted FGDs in 3 pilot villages, Mataindo, Torosik, and Adow with a total 80 respondents. This was followed by interviews with 39 people from sub-village 3 in Mataindo. The key findings of these activities are as follows:

- Farmers are typically small farmers with 1-5 ha of land, farming mixed crops such as coconut, cloves, nutmeg, lemon, cocoa, bananas, chilies, corn, using traditional methods.
- Community's farm locations are in the Binerean corridor, including in Iparuntu, Binerean, Mopopungu, and Imba. The community usually plant coconuts, cloves and nutmeg in their land. Coconuts are often grown on flat soil, while cloves and nutmeg are grown on slopes and in higher elevations. Some farmers rely on seasonal crops like chilies and corn.
- Most farmer groups have been established to receive seeds and fertilizers from the Government. Some farmers use fertilizers and pesticides to maintain their crops.
- The attack of various pests and diseases is a major challenge facing farmers.
- Farmers from nearby villages beyond the Central Pinolosian sub district have come to work along the Binerean corridor, as well as local inhabitants (from Mataindo, North Mataindo, Torosik, and Adow). Some people own significant areas of land (usually the owners of capital, such as collectors). Some farmers have entrusted their coconuts to collectors in their villages for certain uses (basic needs, school fees, others venture capital).
- There is a need for farmer group organizational capacity building, development of coconut derivative/ value-added products, intercropping, replanting, and providing alternative coconut-based farming livelihoods in the targeted communities.
- There is an opportunity to improve market access of coconut farmers by linking them with the private sector and eligible financial institutions.
- Farmers have inadequate access to certified seeds and quality planting materials, and to organic pesticides and fertilizers.
- There is a need to enable small-scale coconut farmers to plant vegetable and annual crops to provide alternative livelihood sources and introduce new methods of agroforestry while also integrating climate-smart farming technologies.

Activity 2.3. Conduct Participatory Rural Appraisals with communities to develop conservation agreements and identify challenges, needs and opportunities

Not applicable in this reporting period.

Activity 2.4. Assess landscape agricultural, value chain and alternative livelihood opportunities

In March 2022, the WCS team had discussions with Manado State Polytechnic (Polimdo) to design a study to assess landscape agricultural, value chain and alternative livelihood opportunities. This assessment includes the study of community farming systems and a value chain analysis for agricultural commodities, of which the main focus will be on coconut, identifying potential additional livelihoods for farmers to develop simple business plans, and research on applied technology to support monitoring and data management. This assessment was initiated led by Polimdo in April 2022, and we are now working on synthesising the results.

Activity 2.5. Design and deliver a farmer training programme on GAP, institutional strengthening, support for rehabilitation, agroforestry or intercropping

The WCS team continues to prepare the design of a farmer training programme on Good Agricultural Practices (GAP), institutional strengthening, support for rehabilitation, agroforestry or intercropping, and in response to the needs identified in Activity 2.2. We will design a training programme following the result of a more detailed community needs assessment and the training will be delivered in line with the village seasonal calendar. We are collaborating with PT Cargill

to develop the farmer training programme and associated modules, building on PT Cargill modules (for 'optimising productivity') that have been developed based on a similar PT Cargill project with coconut farmers in the Philippines. We are evaluating the suitability of the modules based on identified farmer needs, the landscape condition and project resources, and will update these and the outreach and training approach with the PT Cargill team in Amurang (and supported by their regional team) and the Manado Palm Crops Research Institute (Balitpalma).

Activity 2.6. Conduct a feasibility assessment for value addition in the coconut supply chain and other potential additional sources of income, and develop draft business plan

Led by Manado State Polytechnic (Polimdo), we are currently identifying the primary value chains with the highest potential for growth, profitability, and alternative employment for the community (according to their needs and capacities) as well as conducting analysis of the support functions required to make the value chain work, including existing support functions that need to be improved (eg. infrastructure, appropriate technology, information, related services).

Through our engagement with communities at the village level, we have identified the following potential additional sources of income:

- Diversification of coconut products, such as virgin coconut oil, nata de coco, etc.
- Nutmeg. Usually communities only sell nutmeg mace and seed and just throw out the pericarp, while the pericarp can be processed to produce nutmeg juice.
- Development of Community Based Ecotourism. With the increased engagement at the village level, we will identify more potential additional sources of income and will assess the feasibility to develop these options further.

To gain knowledge from similar initiatives, the WCS team participated in the 6th Sustainable Coconut Roundtable, organised by USAID Green Invest Asia (March 31, 2022). The roundtable was focused on securing coconut farmers sustainable livelihoods. The event included an update on the formalisation of the sustainable coconut roundtable platform, an overview of livelihood challenges confronted by coconut farmers, and the potential of sustainable sourcing initiatives. In this roundtable, we identified several issues in the coconut sector, including linked to farmer livelihoods, human rights and labour issues, unsustainable farming practices and the unattractiveness of farming for future generations, lack of farming capacities/knowledge, lack of climate investment, lack of replanting at scale and misaligned incentives and structural barriers in the industry. As a follow up, the taskforce for sustainable coconut offers a platform for collaboration, advocacy for/ collaboration with government and private sector programmes, collaborative funds for impact projects and a joint monitoring framework.

Output 3: A co-management model for protecting biodiversity, forest and ecosystem services is designed and implemented across the landscape

Activity 3.1. Conduct multi-stakeholder meetings to jointly develop and support implementation of co-management plan in high conservation value forests

A coordination meeting with the Regional Government of Bolsel, and the Government of Central Pinolosian and Bolaang Uki subdistricts, in which the pilot villages are located was held in 2021.

On 22 - 26 February 2022, we supported the Tanjung Binerean Wildlife Corridor Essential Ecosystem Management (KEE) Forum Meeting. In this meeting we also presented the results of the High Conservation Value Forest assessment. The Tanjung Binerean Wildlife Corridor covers lands with other land use areas (APL), limited production forest (HPT) and protected forest (HL). Bolsel District has all six HCV (High Conservation Value) classifications[1], according to the results of the HCV assessment. Natural forest cover and unique ecosystems (karst and coastal/marine can be found in the buffer zone of the National Park and fall under Category HCV 1. This Tanjung Binerean Wildlife Corridor is part of a large landscape with undisturbed or slightly fragmented natural forest with a core area of 260,000 ha (under HCV 2), ecosystems and habitats (HCV 3).

[1] The Six High Conservation Values including HCV 1 - species diversity, HCV 2- landscape level ecosystems and mosaic, HCV 3-ecosystems and habitats, HCV 4- ecosystem services, HCV 5- community needs and HCV 6-cultural values

The Tanjung Binerean Wildlife Corridor also has forested areas and karst water catchment areas to control the runoff and flooding in (HCV 4), non timber forest production for community (HCV 5) and Maleo as an endemic bird (HCV 6).

Activity 3.2. Train and support community-government ranger teams to patrol BNWNP and FMU and conduct community outreach

WCS continues to support our key government partners including the BNWNP, North Sulawesi Natural Resources Conservation Agency (BKSDA) and FMU II Bolsel Boltim through capacity building training on SMART patrols. This includes providing technical assistance, refresher training and joint evaluation to SMART Data Operators. Technical assistance for SMART Data Operators in BNWNP was conducted in November 2021. This is a routine facilitation for SMART data operators from resort- (management unit) to head office-level, which aims to improve their ability to manage and analyse SMART data, and develop patrol reports to inform the management strategy. Data management is the responsibility of the resort data operators meanwhile the data operators at the sectio-n and head office-level are in charge of analysing the data. WCS also supports BKSDA on the optimisation of SMART patrols. This includes discussion on the status and implementation of the SMART system within the BKSDA, discussion on the data flow system, refresher training on the SMART application and discussion of the Patrol Procedures.

WCS together with the BNWNP and FMU II Bolsel Boltim team, conducted patrols in four resorts across a total of 481 km. WCS and FMU II Bolsel Boltim deploy two government-community ranger teams in Pinolosian Resort (where the Tanjung Binerean Ecosystem Essential is located) and Bolaang Uki Resort with a total patrol trip of 64.3 km. The patrol team recorded illegal activities including encroachment, illegal logging, poaching, non-timber forest product collection, and road/ trail access. The patrol teams documented, observed, secured evidence and destroyed the snares, and gave a warning letter to the perpetrators. In addition, the patrol team also managed to note the potential of the area, including the presence of endemic bird species, an endemic and endangered mammal of Sulawesi such as Anoa and Sulawesi babirusa. Thus, improved management in these two resorts will contribute to the improved protection of 139,400 ha of forest in the southern part of BNWNP border.

Activity 3.3. Establish restoration, supported by government and with active participation of communities, in degraded watershed forests

WCS held a discussion with FMU II Bolsel Boltim regarding the community-based restoration plan, including by applying an agroforestry system. FMU II Bolsel Boltim suggested conducting the soil suitability test prior to the restoration activities to determine the most suitable tree species to be planted. To date, the FMU II Bolsel Boltim has facilitated several farmer groups near the Binerean corridor. These groups are ‘forest farmer groups’, which are included in the social forestry scheme. The FMU II Bolsel Boltim provided guidance to these groups to apply an intercropping system, by planting various types of high economic value plants in their farm such as nutmeg, durian, mango and rambutan. FMU II Bolsel Boltim will assess the land suitability in the Binerean corridor in the third week of June. The assessment aims to assess the condition of community farmland (productivity level, land status, topographic and types of plant, etc) inside or outside the Binerean corridor. This information will inform the development of the restoration work plan. The WCS team has discussed the scope of work in this activity with relevant key stakeholders.

Activity 3.4. Conduct applied conservation and agroforestry research in the landscape

In Tanjung Binerean, the WCS team established a demonstration plot with a total area of 4 ha, to trial an agroforestry system. In this landscape, we are trialling intercropping several tree species with coconut trees, such as candlenut (*Aleurited mollucanus*), durian (*Durio zibethinus*), and matoa (*Pometia pinnata)* as well as introducing the concept of contour farming. Between September to October 2022, we enriched the plots by replacing the dead plants with new seedings. So far, we have planted around 110 seedlings (now with a height of between 60 - 150 cm). Currently, candlenut and matoa are the highest tree stratum within the demonstration plots. There will be additional demonstration plots for agroforestry.

In regards to conservation and agroforestry research, WCS is managing a research fellowship program (RFP). This year, we have received 36 applications from young Indonesian

conservationists for applied research projects in the landscape across two cohorts. Of these, four people have been selected to conduct research on population and nesting habitat of turtles in Tanjung Binerean, wildlife hunting in West Dumoga, conflict analysis of *Macaca nigra* in FMU II Bolsel Boltim, community perceptions toward turtle nesting in the Essential Ecosystem Area.

Activity 3.5. Hold government-led stakeholder consultation workshops to compile and then disseminate project results and lessons learned to village, district, provincial and national level partners

*Not applicable in this reporting period***.**

3.2 Progress towards project Outputs

Output 1: An assessment framework and monitoring system is established across the landscape, enabling the BNWNP and FMU authorities and the multi-stakeholder partnership to implement and adapt approaches within a forest management strategy that integrates forest protection, restoration and sustainable agricultural production.

We have made progress towards the establishment of an assessment framework and monitoring system with a focus on forest cover and flooding risk, socio-economic conditions and the agricultural supply chain in the landscape. We expect this to be completed by the close of the project. We have built the foundations for the assessment framework and monitoring system, establishing datasets that previously were not available prior to the project. We have met the year 1 indicators of:

1.1 Time-series landscape dataset for forest, farmland and flooding (baseline=0; year 1=landscape datasets and maps developed).

1.2 Camera trap surveys carried out (baseline=0; year 1=camera trap survey results; occupancy estimates for anoa and babirusa and tagging of maleo).

1.3 Socio-economic survey carried out with socio-economic indicators agreed with stakeholders (baseline=0; year 1=survey carried out with 141 respondents; results being processed). This will be repeated with participating farmers.

1.4 Landscape-level analysis to map value along the supply chain (baseline=0; year 1=in progress with Polimdo).

Output 2: >500 smallholder farmers in Bolsel are committed to forest protection and restoration, and have viable livelihoods from sustainable agriculture practices, supported by a multi-stakeholder partnership.

We have made progress toward achieving output 2 and, ultimately, obtaining farmer commitments to forest protection and livelihood support. So far, we have concentrated on establishing a strong basis for community engagement and support, as well as on utilising existing multi-stakeholder forums and processes that align with government processes and support. This includes identifying farmer needs and therefore opportunities to support improved livelihoods and sustainable agricultural practices. This builds on a baseline of 0 in terms of the number of farmers committed and engaged in the landscape and the number of multi-stakeholder partnerships and processes that are actively implemented in support of forest protection, restoration and livelihoods support in the landscape.

2.1. To date, in addition to multi-stakeholder meetings, we have employed the existing Essential Ecosystem Area (KEE) forum for the Binerean corridor as the most viable multi-stakeholder partnership forum for developing support for a farmer support programme that involves forest protection (including HCV areas), restoration, livelihood improvements, and the adoption of sustainable agriculture practices. The KEE forum meeting has been held in year 1 in Kotamobagu (baseline=0). This meeting was attended by 76 people, including gaining support from 24 government agencies, 2 community groups, 1 NGOs and PT Cargill. PT Cargill presented their CSR and sustainable supply chain objectives and activities, outlining how these could support and align with the objectives of the forum. In year 2, we will focus on increasing NGO and community participation. NGO participation may be challenging given the limited presence of other civil society organisations in the landscape.

2.2. We are focusing on community engagement at this stage and will pursue the development of community conservation agreements in year 2.

2.3 We have conducted the socio-economic survey with 141 respondents and conducted focus group discussions in a rapid assessment to identify farmer needs with 80 participants (baseline=0; year 1=farmer needs assessment of 500 farmers). We will develop a more detailed farmer mapping and needs assessment at the start of year 2.
2.4 We have been working with PT Cargill and Manado Palm Crops Research Institute to support the development of farmer work packages. These will be finalised in year 2.

Output 3: A co-management model for protecting biodiversity, forest and ecosystem services is designed and implemented across the landscape

We are working closely with the BNWNP and FMU II Bolsel Boltim authorities who have management authority over each site to make progress towards a co-management model. We will also align this with the KEE action plan to cover a wider landscape outside the national park and FMU.
3.1. At this stage, we are assessing the feasibility and effectiveness of creating a new co-management plan (baseline=0) as opposed to aligning existing management plans and creating a joint work plan (to align BNWNP, FMU, KEE, etc), which seems like the most effective approach for achieving a co-management approach for the target landscape (1,394 km^2) of high conservation value forest by year 2.
3.2. We are supporting BNWNP, North Sulawesi BKSDA, FMU II Bolsel Boltim through capacity building training on SMART patrol, including providing assistance and refresher training to and supporting evaluation of SMART Data Operators. Patrol trips at BNWNP were conducted at four resorts with a total trip of 481 km. WCS and FMU II Bolsel Boltim agreed to deploy two-government community ranger teams to cover two resorts (Pinolosian and Labuan Uki).
3.3 WCS and FMU II Bolsel Boltim had a discussion about the restoration plan to apply intercropping with the participation of the community. FMU II Bolsel Boltim has facilitated forest farmer groups to apply an intercropping system, by planting various types of high economic value plants (baseline=0; Yr3).
3.4. We received 36 applications from young Indonesian conservationists for applied research projects (RFP) in the landscape (across two cohorts). Of these, four people (baseline=0; target >10 by year 3) have been selected to conduct research.
3.5 Not applicable in this reporting.

3.3 Progress towards the project Outcome

We have established a strong basis for developing a scalable model, supported by a multi-stakeholder partnership, that will increase farmer agricultural yields, income and wellbeing, whilst simultaneously reducing threats to high conservation value forests and critical watersheds. This has involved identifying existing forums and processes that can be strengthened to support implementation of a production-protection strategy with support of a wide variety of stakeholders across government, communities, private sector and civil society. Ultimately this has focused on the KEE forum. We are developing a community engagement and training approach, including in collaboration with PT Cargill, to improve coconut productivity, which combined with development of additional sources of income and other technical assistance, is expected to improve the income and wellbeing of the facilitated farmers. The implementation of this strategy will deliver shared lessons learned, good practices to enable replication across the landscape.

0.1. By Yr3, 1 landscape production-protection model is developed and underpinned by a 'zero deforestation commitment' that is signed and enacted through a government, private, community and NGO partnership (baseline 0).

With strong participation from the government and private sector, and a strong basis for community engagement through the forum and more broadly in the landscape (through FGDs and the socio-economic survey), we expect to secure stakeholder commitments towards the implementation of a production-protection model through the forum by year 3.

0.2. By Yr3, rate of forest clearance in the target landscape is reduced by >20% compared to project baseline (to be determined in Yr1) and the border of BNWNP is secured.

We have established a baseline map for forest cover and farmland, and for deforestation in the landscape, with a focus on FMU II and the Essential Ecosystem Area. FMU II experienced an estimated 11.7% (17,775 ha) deforestation from 2000-2019 and is predicted to experience

7.6% (519 ha) deforestation from 2019-2050. The Binerean Essential Ecosystem Area is predicted to have a forest area in 2050 of 47.2% (700 ha) of the current extent. The flooding risk analysis has also identified which watershed areas are most at risk.

We have engaged with communities in five villages to provide GAP training and other technical assistance to improve their practices to be more biodiversity friendly. Strong community engagement will lead to the development of community conservation agreement which will include commitments to implement deforestation-free farming practices, to be developed in Year 2.

0.3. By Yr3, population trends of at least 2 endangered and national priority species have increased by >10% compared to project baseline (to be determined in Yr1).

We have established baselines for occupancy of two endangered and national priority species, which have each shown increases in recent years. We expect to improve and continue these trends through project implementation:

- The estimated occupancy of anoa in 2021 is 0.53 (95% Confidence Interval 0.34-0.73: Standard Error=0.09) indicating an increase of 12% from the previous survey in 2020.
- The estimated occupancy of babirusa is 0.59, having experienced an increase of 26% in 2021 compared to the previous year (0.59 with a 95% Confidence Interval 0.43-0.76; Standard Error=0.08 versus 0.33 95% Confidence Interval 0.18-0.47; Standard Error=0.08).

0.4. By Yr3, >500 households in target communities have increased indices for wellbeing, including a 10% increase in income, compared to baseline data collected at the start of the project when selecting project beneficiaries.

We are establishing the basis for improving community wellbeing and incomes through a socio-economic survey and identifying best approaches to support these improvements through the farmer needs assessments. We are still processing this data and will complete these baselines in early yr2.

0.5. By Yr3, >GBP150,000 in private sector financing leveraged for project continuation over the medium-term (baseline = 0).

We expect to secure additional in-kind support from PT Cargill (in addition to the GBP 51,416) secured for initial collaboration) for implementation of farmer engagement and training. We will assess the feasibility of increased and continued PT Cargill investment along with other potential investment streams that can support value-addition in the supply chain.

3.4 Monitoring of assumptions

- Outcome level assumptions:

Through the KEE forum and through engagement with diverse stakeholder groups, the project is able to understand the diverse interests of a wide range of key stakeholder groups (government, private sector and civil society) and translate this into partnership strategies. The stakeholder increasingly recognized the value of the protect-produce model, to achieve the district development target particularly in the agricultural and forestry sector.

Wth some challenges early on related to travel and meeting limitations, the project is increasingly able to overcome COVID-19 impacts.

Output 1 assumptions:

To date, the research and survey methods in use are proving able to establish reliable baselines and to support effective monitoring as the project progresses. We recognise some limitations in the deforestation risk study, related to its large study area and relatively coarse unit of analysis of 250m. These results are being communicated to stakeholders through the KEE forum and to support the development of a farmer support programme (in particular with PT Cargill).

Output 2 assumptions:

So far, there appears to be strong support and commitment from partners to work together through the KEE forum to support the design of livelihood interventions that improve community livelihoods and support forest protection, thereby addressing deforestation risk.

Meanwhile, communities also requested WCS team assistance to support them in improving their farming practices with a hope it will improve their livelihood.

Output 3 assumptions:
Engagement with the BNWNP, FMU II Bolsel Boltim authority and the District Government indicate the need for alignment in management to support improved outcomes across the landscape. As above, however, we are assessing the effectiveness of developing a new coordinated plan versus achieving aligning the existing plans and approaches for each area. Participation in the KEE forum and interest in community engagement, agroforestry support, etc., demonstrates stakeholder understanding of the importance of a variety of integrated strategies to address the challenges across different land use types and functions.

3.5 Impact: achievement of positive impact on biodiversity and poverty alleviation

Biodiversity and forests in the landscape are well protected and restored by empowered community and government partners, and communities have viable livelihoods from the production of deforestation-free agricultural commodities. This project aims for transformational impacts across the 430,000-hectare landscape. This includes the FMU, where we will strengthen capacity and implementation of a long-term management plan. By working with the communities in the co-management model and to improve agricultural sustainability and resilience, and by aligning with government policy, private sector and smallholder interests, we can maximise the impacts and sustainability of livelihood and biodiversity benefits.

We have selected five pilot villages and will work with more than 500 farmers. We will provide technical assistance to farmers which includes the provision of GAP training to improve the productivity of their agricultural crops, with a focus on coconut/ copra production. We will strengthen farmer groups and farmer capacity to improve access to agricultural inputs, markets and finance. Another aspect of the project is to support value-addition of agricultural products and the development of additional sources of income. We will also work with the local government to create incentives and support through government assistance conditional on community environmental performance, including in protecting forests/reducing deforestation. Through these interventions, we can improve community livelihoods and wellbeing.

4. Project support to the Conventions, Treaties or Agreements

The project will contribute towards meeting the Convention on Biological Diversity (CBD) objectives outlined in General measures for conservation and general use, Sustainable use of components of biological diversity), and incentive measures. Activities under this project are particularly relevant to the agricultural biodiversity and forest biodiversity programme of work. More specifically in Indonesia, this project will support the Government of Indonesia (GoI) to meet its National Targets (NTs) under the CBD, with a particular focus on achieving progress towards, among others, NT7: Improved sustainably managed land for agriculture; NT11: Realization of sustainable maintenance and improvement of conservation areas, including sustainable management of protected forest; NT12: Realization of efforts to maintain the populations of endangered species as a national conservation priority; and NT14: Improved functionality of integrated ecosystems to ensure the improvement of essential services (water, health, livelihoods, and tourism). Training and support for farmers to improve land productivity under Output 2 is in line with GoI's efforts to achieve NT7- improved sustainably managed land for agriculture, as outlined in the IBSAP (Indonesia Biodiversity Strategy and Action Plan) document. The development of a landscape co-management plan, forest patrol activities, and forest rehabilitation proposed under Output 3 directly contributes to the protection of high biodiversity value forest in the landscape and improved management of the first Ecosystem Essential area in North Sulawesi, which will support progress towards achieving NT11. These activities, along with the estimation of species population and trends, and habitat condition under Output 1 will also contribute to the protection of GoI's priority endangered species, including the maleo. (*Macrocephalon maleo*) and the black-crested macaque (*Macaca nigra*) and support the progress towards achieving NT12. By supporting increased production and productivity of environmentally-friendly agricultural products (in this case through improved practices in "no-deforestation" coconut production, the exploration of value-added virgin coconut oil and the identification of alternative income sources), this project will contribute to the achievement of NT14. The project will also support GoI's target to restore ecosystems outside conservation areas through watershed forest rehabilitation proposed under Output 3 and contribute towards

progress to meet NT15 (Realization of conservation and restoration of degraded ecosystems in the region). WCS also operates in Indonesia under an MoU with the Ministry of Environment and Forestry (MoEF), signed by the Director General (DG) of Natural Resources and Ecosystem Conservation, and liaises regularly with the DG on all WCS activities in Indonesia. The DG acts as the CBD focal point for Indonesia. The BNWNP authority and BKSDA North Sulawesi, which is in charge of managing conservation areas and wildlife outside the National Park, are the technical implementation unit under the DG of Natural Resources and Ecosystem Conservation. We have to submit quarterly reports and hold regular meetings with them to update all WCS activities in this landscape, including this project funded by Darwin Initiatives. We also must submit an annual report to the DG of Natural Resources and Ecosystem Conservation on all WCS activities in Indonesia.

5. Project support to poverty reduction

The landscape's forests are bordered by farming communities, who mainly grow coconuts to produce copra, a key contributor to North Sulawesi's GDP (>20% is derived from agricultural exports, primarily coconut oil and fat) (BPS 2019). Bolsel has a population of 71,533, >50% of whom rely on farming (primarily coconuts) for their main income (BPS 2020). Despite high international copra demand, ageing palms (between 30-60 years) and limited knowledge of good agricultural practices lead to low yields (c.1.4 ton/ hectare/ year compared to as much as 3.5 ton/ ha/ year from high yielding varieties) (MoA 2013, WCS 2019). There is no "value-addition" within the coconut supply chain in the landscape and with poor processing techniques, low prices and limited income diversification, farmers struggle to earn viable incomes and lack livelihood resilience. These risks farmers abandoning their coconut plantations and clearing new areas in an attempt to increase their incomes by planting other crops, increasing conversion pressure on biodiversity-rich forest and critical watersheds. One consequence is increasingly intense and frequent flooding, which further threatens livelihood security. From 2005-2017, there were >140 flooding events downstream of BNWNP, impacting >120,000 people (BNPM, 2017). WCS assessments of land use change shows that a growing proportion of the area's lowland forests is at risk of deforestation, threatening biodiversity and further exacerbating the risk of floods and farmer livelihood insecurity.

The project will provide technical assistance for farmers, which is expected to improve their livelihoods (see point 3.5.). The project will focus specifically on supporting 500 farmers across five villages in and around the Binerean corridor.We are still analysing the socio-economic survey data, which will provide baseline information on socio-economic conditions and establish the specific impacts on poverty that we can expect the project to achieve.

In October 2021, community discussions were carried out in Mataindo, Torosik, and Adow villages. The results of this discussion began to describe the situation and condition of farmers in the Binerean corridor, such as that most farmers own plantation land within the Binerean corridor, such as in Binerean, Mopopungu, Iparuntu, and Imba. Farmers planting in this area are not only residents of the surrounding villages, but are also those from outside of Pinolosian Tengah sub-district. The farmers are generally small farmers who own an average of 1-5 ha. Communities farm within mixed garden systems that include coconut, clove, nutmeg, lemon, cocoa, banana, corn, chilli, etc. The management method is generally still conventional, in that there is minimal maintenance. Some farmers still use chemicals, such as fertilizers and pesticides. However, these materials are increasingly expensive. Farmers outside of farmer groups do not receive assistance, such as plant seeds, fertilizers, etc from the government. So in general, farmer groups are formed in order to access this government assistance. On the other hand, farming is also threatened by various pests and diseases. This information is supporting the formulation of an effective strategy and associated training modules and approach to improve agricultural production and market access that is expected to have direct impacts on poverty reduction by improving household incomes and income security.

6. Consideration of gender equality issues

Gender equality is a core WCS value and is fully considered in the planning and execution of project activities, so as not to exacerbate gender inequalities in the landscape. In the socio-economic survey, we are ensuring the participation of women respondents to understand their challenges and needs.

In this landscape, agricultural production activities are carried out by family units, which include women. Women are primarily responsible for ensuring the food security of their families and communities, as well as for managing household finance. In this project we will strengthen the roles of women in the economic and productive sector, through development of additional sources of income, which will also target women's groups. A strategic innovative agribusiness approach for housewives may come from utilising their house-yard land. With this, the project will actively engage women groups, improve their knowledge and skills in the development of additional sources of income for the communities.

As women hold the primary role in managing family finance, all project activities related to improving farmer access to finance will involve women in the collection and analysis of data, and the development of the associated strategy and approach.

This year, the focus has been on ensuring adequate representation of women in stakeholder meetings and in outreach and engagement (e.g. surveys involving male and female enumerator teams). This will support the project to have a better understanding of women's perspectives in the landscape and ensure we can adapt the project in response.

For example:

- Within sub-village meetings across four sub-villages from three villages (Torosik, Adow and Mataindo), of 80 participants, there were 34 women (42.5%) and 46 men.
- On February 14, 2022, WCS carried out the Socialization of Regional Regulation No. 2 of 2021 concerning the Arrangement of the Tanjung Binerean Corridor Animal Evacuation Area, South Bolaang Mongondow Regency with a total of 98 participants, including 70 men and 28 women (28.57%).
- On February 23-25, there was an HCV Socialization activity and a Forum Meeting on Management of the Tanjung Binerean Wildlife Corridor Essential Ecosystem Area with a total of 75 participants, 54 men and 21 (28%) women.
- On March 9, 2022, a FGD on the use of Natural Resources in the Land-to-Sea Approach was conducted with a total of 47 participants, 31 men and 16 women (34.04%).
- On March 14-15, 2021, a Workshop on the Results of the Study on Sedimentation and Disaster Mitigation of Kab. South Bolaang Mongondow with a total of 78 participants, 70 men and 28 women (25.64%).

7. Monitoring and evaluation

This project is still in the early stages of implementation. We are collecting data on the indicators to measure progress. However, from the description in the points 3.3, we believe the key elements of the building blocks to achieve the project outcomes are being established. The indicators of achievements attached in Annex 1 and 2, internal draft environmental and social management plan, internal draft monitoring and evaluation plan, weekly update, monthly update, bi-monthly update with relevant stakeholder, minutes of meeting, biodiversity monitoring SMART patrol, and socio-economic survey.

There have been no changes to the project M&E plan, which centres on the landscape assessment framework and monitoring system to monitor changes in land cover and land use change, biodiversity and flooding risk, and includes socio-economic surveys to measure changes in socio-economic conditions. The initial analyses for these have been carried out. Further, we still plan to use similar monitoring systems for farmer engagement and training as in use as at other WCS project sites, once active farmer participation has been established through delivery of the training packages. Finally, we are continuing to monitor activity-level indicators and outputs as set out previously, and are monitoring stakeholder engagement and participation in meetings. At the moment, WCS has overall responsibility for the M&E work within the project. However, we consult on indicators and disseminate findings with key stakeholders. Once the role of KEE forum is strengthened, it is expected that it can assume the role of the M&E process involving relevant stakeholders.

8. Lessons learnt

Output 1: Assessment framework and monitoring system

- Limitations on deforestation and flooding risk analysis: There is no available reference data to compare the results of our analysis demonstrating the importance of repeating the analyses to improve the methods.

- Socio-economic survey: Preparation phase for carrying out the survey has been very time consuming (preparing documents, securing relevant permits and associated stakeholder/ government support). We need to be realistic about the timing of future repeat surveys and ensure the indicators and analyses align with government/ stakeholder priorities.
- Population and habitat condition - the maleo corridor not only provides habitat for maleo but also for yaki and other wildlife species that can easily move in and out in conservation areas (for more information on implications for farmer training, see below).

Output 2: >500 farmers committed to forest protection and restoration and have viable livelihoods, support by a multi-stakeholder partnership

- The KEE forum provides a strong process and basis for the development of a multi-stakeholder partnership. Private sector participation in the KEE forum has been well received. The KEE forum has a strategic role to support national and regional governments to protect rare, threatened, endangered species which are currently found outside conservation areas. The KEE forum is led by local government who can issue regional policies related to protection and conservation efforts in collaboration with various stakeholders including the private sector.
- Communication with farmers to ensure they fully understand the proposed purpose of the activities requires sufficient time. It is better to build this in at the start of the project rather than expedite any activities. We will continue to engage with communities in a way that fosters their understanding and ensures a proper FPIC process is followed before we proceed with any indirect implementation.
- Development of farmer training modules and approach: there is a need to adapt the modules developed by PT Cargill for use in other project sites (e.g. Philippines) to meet the needs of farmers in the project landscape. We will also need to adapt the training approach in line with the project resource needs available and depending on the availability of PT Cargill resources to support delivery of the training packages.
- The success of farmer engagement and training in terms of biodiversity impact directly relates to how it will improve the maleo habitat condition (see below). Good coconut management practices that consider the yaki and maleo home range can be used as good lessons on how local communities can share space with wildlife. Unfortunately local communities perceive yaki as a pest, therefore human-wildlife conflict mitigation measures must be incorporated. There are current limitations in terms of information on the population of yaki.

Output 3: A co-management model is designed and implemented across the landscape

- Government participation is vital in every stage of the project and activities. We strive for all related parties, starting from the ranks of the Regional Government of Bolsel, FMU II Bolsel - Boltim, North Sulawesi BKSDA, BNWNP, to be involved throughout, starting from the planning stage, implementation of activities, as well as monitoring and evaluation.

9. Actions taken in response to previous reviews (if applicable)

Not applicable.

10. Other comments on progress not covered elsewhere

Not applicable.

11. Sustainability and legacy

The following activities and approaches are supporting project sustainability and the long-term impacts:

- Discussions and meetings with the Head of village, traditional leaders, religious leaders and key farmers in target areas support uptake and therefore long term impacts of the project. Ensuring that the community can communicate their objectives and intentions is vital to ensuring strategies meet community needs and therefore for long term impact. These can include larger community-wide meetings that provide an avenue for activity participation in the project and provide a space where they discuss their goals.
- Building a network of partnerships in the landscape through the KEE Forum supports project sustainability and ensures a legacy for the project. Understanding the landscape of

expertise of the various stakeholders in the project areas requires deliberately allocating resources to outreach and building relationships. Local governments have significant power and influence to determine whether policies and programs under their authority create sustainable or unsustainable conditions. Through green development, land use regulations, conservation regulation and the Ecosystem Essential Area management plan, municipal and local governments can promote and shape new development that is sustainable: development that is inclusive, conserving land and reducing environmental impacts.

- WCS has facilitated Focus Group Discussions on Natural Resource Management in Bolaang Mongondow and Bolsel District. The event aimed to gather input from the participants as regards to the development of a macro-plan, which will be a vital component to local government efforts to regulate and facilitate biodiversity conservation efforts across the landscape. The discussion stressed the urgency of putting a macro-plan in place that highlights the importance of protecting biodiversity and ecosystems, and also promoting conservation efforts outside protected areas.
- We have trained BNWNP staff, FMU II Bolsel Boltim, and selected community members to implement SMART patrols, which includes data collection, analysis and report development. Following the training, the BNWNP and FMU II Bolsel Boltim have included SMART patrol activities as part of their Management and Information System. The BNWNP, FMU II Bolsel Boltim staff with the support from communities and WCS are implementing monthly SMART Patrol inside their area and along the border. By implementing SMART patrol activities, BNWNP and FMU II Bolsel Boltim staff at the resort level have a better understanding of the threat facing the park and use data and information collected to inform the planning of their activities including budgeting.

In line with the MoU between WCS and MoEF, all data from the project will be shared with the government, except for sensitive socio-economic data including personal data from the communities. In particular, this will include data collected in collaboration with the government through SMART patrols, as well as data from biodiversity monitoring and research. All project reports will be shared with MoEF and with key stakeholders in the multi-stakeholder partnership. Reports on key progress and summaries of lessons learned, including partnership newsletters, will be made publicly-available using WCS and partner communications channels, with a focus on strategic channels that will support wider dissemination and uptake of lessons and approaches (for example, to stakeholders in the Sustainable Coconut and Coconut Oil Roundtable and via WCS thematic programmes that engage the private sector and other partners on the 'Forest First' Approach) with MoEF approval. We will encourage research papers from Polimdo and developed through the Research Fellowship Programme to be submitted to open access journals.

The planned exit strategy at the community level is still valid. We continue to focus on supporting farmers and strengthening capacity at the community level and understanding how to embed progress in village-level regulations. We are also continuing to track future opportunities for funding or further investment, through value-addition within the supply chain and by tracking carbon/ climate regulations and approaches in Indonesia, which may provide an opportunity in the future.

Strengthening the capacity of management authorities and supporting community-government co-management also continues to be a core component of our exit strategy, as does engaging district-level planning authorities to build project approaches into government planning. We also identified that the KEE forum is a good avenue to bring all relevant stakeholders in the landscape to come into a commitment to adopt the protection-produce approach/ model that will create positive impact both for the community livelihood and biodiversity protection. Mainstreaming this approach into the KEE management/ action plan will ensure that the stakeholders will have ownership and will translate it into a longer term program.

12. Darwin identity

We have acknowledged the Darwin Initiative important support throughout our communications with all stakeholders. We have not yet developed public communication materials for this project as we aim to encourage ownership and leadership by BNWNP and BKSDA North Sulawesi, in line with our MoU with MOEF and as part of our sustainability strategy. We will produce joint materials, such as publications, reports, banners, and signs, that

acknowledge Darwin Initiative's support; we will also insert Darwin Initiative logo into these materials. WCS was also pleased to recognize the Darwin Initiative in WCS's 2021 Annual Report. However, following the implementation of the project activities, particularly from the meetings and workshops with the stakeholders at the district level, and field activities, several local newspapers have published several articles related to the project (see annex 4.1).

13. Impact of COVID-19 on project delivery

COVID-19 has impacted the frequency of travel to pilot villages and the occurence of in person meetings or discussions, which are often carried out online. We recognise that some discussions, including to develop detailed technical plans require offline meetings and field visits. We have therefore continued with these and to meet in person in line with existing guidance and adhering to safety protocols.

Implementation of activities in the field, such as face-to-face meetings, are still limited in number of participants, including meetings in the hamlet to identify coconut farmers, which has affected project implementation. This means there has been a delay in the early stages of the project where we will have to conduct a greater number of meetings with fewer participants. This has changed in more recent times as travel within Indonesia is possible with greater ease and fewer restrictions, however we continue to follow internal WCS guidance.

WCS established a Crisis Management Team (CMT) to ensure the safety of WCS Indonesia staff, the stakeholders and communities involved in the program. All WCS staff and consultants conducting field visits must fill a screening form of the activity and be vaccinated. The destination of the field visit needs to be assessed by the Program Manager, and the CMT in order to assess the current risk levels. Any meeting place for focus group discussions must be assessed prior to the activity and we must apply health protocols including at least 1-metre physical distancing. If there is any case of COVID-19 within staff, he/ she must report this to the CMT team and a 14 days self quarantine is mandatory. The result of COVID-19 test needs to be communicated to relevant stakeholders to disclose any instances of close contact.

14. Safeguarding

Please tick this box if any safeguarding or human rights violations have occurred during this financial year.

All staff receive orientation on the WCS Code of Conduct at the start of employment and during periodic refresher training. WCS requires appropriate due diligence prior to engaging WCS partners, particularly for individuals who will have any contact with children. All written contracts with downstream partners include a flow through of donor requirements and WCS policies. WCS will ensure local partners have access to and know their responsibilities under these policies. WCS Indonesia's Bogor-based safeguarding team supports implementation of WCS's safeguarding policies in our landscapes across Indonesia. This includes delivering relevant training and capacity building regarding social safeguards, gender, FPIC, human rights, and conflict resolution, and identifying opportunities to extend these opportunities to our partners. WCS provides a clear process for receiving and addressing suspected violations of these policies through its global GRM, and sites have or are developing locally adapted versions as needed and appropriate. Failure by WCS staff and partners to take preventive measures against safeguarding violations, to investigate and report allegations by their personnel, or to take corrective actions when safeguarding violations have occurred, or any other violations constitute grounds for WCS to terminate its agreement or relationship with any WCS staff or partner.

15. Project expenditure

■

■ **Table 1: Project expenditure <u>during the reporting period</u> (1 April 2021 – 31 March 2022)**

Project spend (indicative) since last Annual Report	2021/22 Grant (£)	2021/22 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)

Staff costs (see below)	[redacted]	[redacted]	[redacted]	
Consultancy costs	[redacted]	[redacted]	[redacted]	
Overhead Costs	[redacted]	[redacted]	[redacted]	
Travel and subsistence	[redacted]	[redacted]	[redacted]	
Operating Costs	[redacted]	[redacted]	[redacted]	
Capital items (see below)	[redacted]	[redacted]	[redacted]	
Monitoring & Evaluation (M&E)				
Others (see below)	[redacted]	[redacted]	[redacted]	
TOTAL	[redacted]	[redacted]		

16. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes

I agree for the Darwin Initiative Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here).

● Checklist for submission

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the **correct template** (checking fund, type of report (i.e. Annual or Final), and year) and **deleted the blue guidance text** before submission?	☑
Is the report less than 10MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	☑
Is your report more than 10MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	☑
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	☑
Do you have hard copies of material you need to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	☒
Have you involved your partners in preparation of the report and named the main contributors	☑
Have you completed the Project Expenditure table fully?	☑
Do not include claim forms or other communications with this report.	