



NICKEL EFFORTS FOR SUSTAINABLE TRANSITION HIGH CONSERVATION VALUE SCREENING PROCESS REPORT

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Prepared by Tetra Tech

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Acronyms

AMAN	Aliansi Masyarakat Adat
AMDAL	Environmental Impact Analysis
APNI	Nickel Mining Association
BAPPENAS	Ministry of National Planning and Development
BRWA	Badan Registrasi Wilayah Adat
DLH	Central Sulawesi Province Environment Agency
ESG	Environmental, Social, and Governance-based investing framework
GHG	Green House Gas
HCS	High Carbon Stock
HCV	High Conservation Value
HCVN	High Conservation Value Network
HPAL	High Pressure Acid Leach
IMIP	Indonesia Morowali Industrial Park
IRMA	Initiative for Responsible Mining Assurance
IUCN	International Union for Conservation of Nature
MARVES	Ministry of Maritime and Investment
MEMR	Ministry of Energy and Mineral Resources
MoEF	Ministry of Environment and Forestry
NEST	Nickel Efforts for Sustainable Transition
NI	National Interpretation
NIC	Nickel Industries
NGO	Non-governmental Organization
NPI	Nickel Pig Iron
PERHAPI	Mining Expert Associations
PTVI	PT Vale Indonesia
RKEF	Rotary Kiln Electric Furnace
RKL	Environment Management Plan
RMI	Responsible Mining Initiative
RPL	Environment Monitoring Plan
RTE	Rare, threatened, and endangered (species)
SINAR	Accelerating Sustainable Energy Deployment in Indonesia Project
TBP	Trimegah Bangun Perkasa

USAID United States Agency for International Development
WALHI Wahana Lingkungan Hidup Indonesia
WRI World Resource Institute

1.0 Introduction

In March of 2024, Tetra Tech, and private investors in the nickel sector in Indonesia signed an agreement to implement the Indonesia Nickel Efforts for Sustainable Transition (NEST)¹ project as a multistakeholder partnership aimed at fostering stakeholders' collaboration, communication, and investment in the nickel mining sector. This partnership will serve as a forum to engage Indigenous Peoples, local communities, the government, and the private sector to address and direct resources towards biodiversity conservation and recovery, reforestation, and/or habitat re-creation when siting and implementing nickel mining and smelting operations. The project will be implemented in Sulawesi over a five-year option period, with buy-in guaranteed for the first year. The project will focus on:

- Aligning incentives and priorities through strategic dialogue between community, government, and nickel sector champions to achieve positive impact on biodiversity, including carbon capture and a reduction of greenhouse gas (GHG) emissions.
- Building on existing conservation/carbon data to inform selection of sites and reforestation/reclamation implementation approach to achieve high impacts aligned with government and nickel sector priorities.
- Applying Free, Prior and Informed Consent throughout its implementation to ensure Indigenous Peoples and local communities provide consent.
- Leveraging donor renewable energy programs under the Just Energy Transition Partnership to conduct assessments of nickel operations to identify measures to reduce GHG emissions in facilities, mining, and transport.

The project will foster stakeholders' engagement and apply a technology-based screening approach, to identify a site in Indonesia with particularly high conservation, biodiversity, and carbon capture value, and, after identification of mutual priorities between government, private sector, and communities – implement measures for reforestation, biodiversity protection and GHG reduction.



NEST Program Manager, Maya Muchlis, introduces the project at the HCV Screening Workshop

To get the project off the ground, the NEST team developed a strategy that involved not only introducing the project to stakeholders (government, civil society, private sector, local communities and Indigenous Peoples), but also engaging them in a High Conservation Value (HCV) Screening process that would indicate candidate sites for project implementation. The project's sub-contractor, High Conservation Value Network Secretariat (HCVN), developed a slide deck and support materials to familiarize stakeholders with HCV Screening. The project team conducted meetings with the above-mentioned stakeholders in Jakarta and Sulawesi to introduce the project and present the HCV Screening

¹ In January 2025, the project name was changed from Indonesia Nickel Impact Project (INIP) to Nickel Efforts for Sustainable Transition to better reflect the objective of the project to leverage resources to support energy transition in Indonesia.

process. In addition, the project team facilitated the presentation of the slide deck of the HCV Screening process to project clients.

After the various meetings, the project team agreed with the stakeholders to hold an audience in Palu with the provincial representatives of Central Sulawesi to officially present the project with a view to obtaining the provincial authorities' endorsement of the project's implementation. It was then agreed to hold an in-person HCV Screening workshop after a hearing with the provincial officials including representatives of different stakeholders.

The following pages summarize all the sections and steps taken to introduce the project, engage stakeholders, collect existing data, organize the various meetings in Palu and develop the preliminary indicative maps based on likely HCV in the landscape and likely threats they face to inform candidate site for NEST activities. NEST activities will be further explained in the Year 1 action plan.

2.0 Introduction of Project to Stakeholders

2.1 GOVERNMENT

Provincial Government: Between August 8 and 27, 2024, the NEST Community Engagement Specialist visited Central Sulawesi to introduce the project to the various stakeholders (see Annex I for the contact list) in the province and explain the project's objectives, the approach, and the expected results. He visited the entire Northern Morowali Regency to meet with representatives of the provincial government (environment, forestry, social and cultural, spatial planning, development planning board, marine and fisheries); non-governmental organizations (NGOs) for environment and Indigenous Peoples (Central Sulawesi Province Environment Agency [DLH], Merah-Putih Foundation, Badan Registrasi Wilayah Adat [BRWA], Aliansi Masyarakat Adat [AMAN], BANTAYA, Wahana Lingkungan Hidup Indonesia [WALHI], SL-JKPP). During the meetings, the consultant distributed the approved NEST engagement material and provided detailed information about all of the steps of the HCV Screening process as critical to identification of indicative HCV areas. He informed participants about the screening workshop as a mechanism, from the start, to involve different stakeholders in the identification of these indicative HCV areas as well as to participate in the project.



NEST Community Engagement Specialist, Ansel Kahan, meeting with the Head of the Forestry Management Unit in Bungku--Morowali

Government officials reacted positively to the initiative of arranging to engage with the stakeholders by coming directly to the “center of the issues” (provincial offices) and meeting them one by one. Local NGOs and Indigenous communities also welcomed the project “coming and knocking on their doors” as a way of initiating a good relationship and collaboration based on trust. They also provided very good responses and felt really appreciated given their presence and collaboration with the local government (under the Ministry of Environment and Forestry) in the region of Sulawesi. Local NGOs specifically noted that the issue so far is that companies under the Indonesia Morowali Industrial Park (IMIP) seem that they are capable breaking all of the existing rules in the area—even in “adat or Indigenous rights” forest—only for business purposes without considering environmental impacts, such as the destruction of local community places for their livelihood; their garden, rivers or the coastal areas.



Meeting with WAHLI representatives in Morowali

In response to the invitation to the screening workshop, provincial government representatives required that before holding the screening workshop, the project should first submit an official letter to the local government to request a “hearing” (an audience) to formally introduce the project. The project drafted and submitted a letter to the province and received approval. Given the ongoing regional elections and budget planning, provincial authorities recommended holding the hearing on September 23, 2024, and the screening workshop on September 24 and 25, 2024 in Palu. Details about the hearing and the workshop held on these days are summarized below.

National Government:

Ministry of Environment and Forestry (MoEF), Directorate of Natural Resources and Conservation, represented by Nofi Sugianto (Chief of Administration Subdivision): On 13th of September, the NEST Program Manager introduced the project to the representative of the Directorate of Natural Resources and Conservation, Nofi Sugianto (Chief of Administration Subdivision). He suggested that Tetra Tech send the official letter to request a hearing session with the relevant Directorates within the Ministry of Environment and Forestry. There are three relevant directorates recommended to be involved in the session including, Directorates of Natural Resources and Conservation, Directorate of Climate change mitigation and Directorate of Spatial Forestry and Environment Management. Once the request was approved, NEST could present the project in front of the relevant directors within the Ministry.

Ministry of Maritime and Investment—MARVES, represented by Tubagus Nugraha (Assistant Deputy of Mining and Investment, currently with the National Energy Council). In September 2024, NEST Project Manager and Program Manager paid courtesy visit the Ministry of Maritime and Investment. MARVES is seriously putting their attention to improving safety performance of nickel down streaming companies including the industrial park areas, specifically in Morowali. Since 2023, under coordination with the MoEF and Ministry of Energy and Mineral Resources (MEMR), MARVES has been conducting independent due diligence on nickel smelting companies of their safety and environmental performance against the Indonesia relevant standard (SMKP and PROPER). As of the writing of this report, the result has not been publicly published yet. MARVES, represented by Pak Tubagus, is interested in the NEST project, and provided some recommendations to be followed up:

- Tetra Tech to send official letter requesting the hearing session of NEST to be presented to the relevant local government stakeholders (ministries) including MARVES, MoEF and MEMR.

- The HCV Screening workshop initial results including candidate sites for project implementation to be presented in front of the relevant ministries before it is finalized.
- The HCV Screening workshop results and candidate sites shall refer to the government regulations.

2.2 NATIONAL NGO AND ASSOCIATIONS

Satya Bumi, represented by Andi Mutaqqin, Executive Director: On 8th of August, the Program Manager met with And Mutaqqin. He mentioned that Satya Bumi and Earthworks have been in touch with project partners before to discuss their article on the nickel supply chain in Indonesia and its impacts on human rights and the environment. Satya Bumi actively conducts advocacy on the impacts of nickel mining and smelting and the nickel supply chain through several research and data collection activities including tracing the vessels with products containing nickel. Currently they are focusing their research in Kabaena Island and Wawoni Island where they actively assist local communities to advocate for their land rights and impacts on their livelihood.

Satya Bumi expects end users to provide a practicable solution to replace the coal fired power plants of the nickel smelter operations in Indonesia. They agreed to join the HCV workshop and suggested connecting with Aryanto Sangaji from Earthworks to expand the network. The NEST Program Manager asked whether Satyabumi would be interested to join the initiatives of the dialogue platform both at the national and regional level to discuss the environment and social impacts of nickel operations and provide recommendations and find possible solutions. At the end, Andi was interested in the workshop to exchange information and ideas.

Andi shared some useful links of Satya Bumi's released articles where some of them went viral:

- https://www.business-humanrights.org/en/from-us/briefings/powering-electric-vehicles-human-rights-in-indonesias-nickel-supply-chains/?utm_source=linkedin_bhrrc&utm_medium=linkedin_bhrrc&utm_campaign=2407EVsupplychains&utm_content=social
- <https://mightyearth.org/article/from-forests-to-electric-vehicles/>
- <https://satyabumi.org/kabaena-di-bawah-bayang-kehancuran-akibat-ambisi-nikel/>
- <https://cri.org/reports/nickel-unearthed/>
- <https://www.aeer.or.id/nikel-baterai-kendaraan-listrik-ketidakadilan-ekologi-di-kawasan-asal-sumber-daya/>

World Resource Institute (WRI), represented by Tomi Haryadi (Director of Agriculture, Land and Water): The program manager met virtually with Tomi on the 28th of August. Tomi mentioned that in August 2024, WRI signed an agreement with the Ministry of National Planning and Development (BAPPENAS) on the drafting of the decarbonization roadmap for the nickel industries in Indonesia. The draft roadmap study will be carried out by involving all stakeholders, ranging from the private sector, various ministries/technical agencies, to academia, to discuss several challenges and the application of solutions for the sustainable nickel industry. WRI Indonesia as an independent research institution will provide comprehensive contributions including research, data analysis, and policy recommendation design to support emissions reduction throughout the nickel industry supply chain in Indonesia.

Nickel Mining Association (APNI), represented by Meidy Katrin, Secretary General of APNI: On 26th of July, Meidy mentioned that the nickel price at the global level remained low including Nickel Pig Iron (NPI) where most of the nickel processing plants are struggling with their operational cost. Most of the nickel companies, both mining and processing plants, perceive that the Environmental,

Social, and Governance-based investing framework (ESG) requires financial commitment. Hence, at this stage their focus is on compliance to the government regulation. Meidy also mentioned that fully compliant to the international standards such as the Initiative for Responsible Mining Assurance (IRMA) and Responsible Mining Initiative (RMI) is a long and complex process for most of the association's members as the standard criteria that shall be met can reach up to 400 criteria. Companies progressively will meet the requirements where in parallel capacity building and building their ownership and commitment are required.

Meidy suggested the entry point for NEST to the private sector is through the nickel mining companies where the regulations are more stringent (MEMR and MoEF) than the down streaming industries where they are regulated under the Ministry of Industry and Trade.

At the moment, APNI is actively participating in the public hearing of the new draft regulation related to the management of critical and strategic minerals. Considering the political situation will not be stable until the upcoming President is officially on board, the draft regulation remains on hold. APNI has prepared several programs where ESG is one of their focused areas to be improved. It is predicted that APNI will continue the advocacy effort around January 2025.

Mining Expert Associations (PERHAPI), CERIA Group, (operated in Konawe) Hengjaya, Nickel Industries and several nickel mining companies are currently preparing their ESG roadmap and work plan where one of them is biodiversity management and decarbonization plan (GHG reduction).

2.3 PRIVATE SECTOR

Ceria Nugraha Indotama (CERIA) Group, represented by Elviera Putri, Head of Sustainability: On the 6th of August, Elviera emphasized that CERIA group operates in Kolaka, Southeast Sulawesi Province where currently they are constructing 4x72MVA of Rotary Kiln Electric Furnace (RKEF) smelter with the expected annual output of 252,700 tons of FeNi or equal to 55,600 tons of nickel content. Besides RKEF, CERIA also plans to develop a High-Pressure Acid Leach (HPAL) plant consisting of the total expected annual production of 293,200 tons Mixed Hydroxide Precipitate or equivalent to 110,900 tons of nickel content.

Currently CERIA is progressing approximately 20% of the RKEF lines construction but the mining activities has been starting to operate since 2017. Some parts of CERIA's area of operations are located inside the protected forest and production forest. Consequently, they have to compensate for the land for more than 1,000 ha. At this stage CERIA is focusing on developing the ESG roadmap and decarbonization plan to meet with the investors and market's demand.

Nickel Industries (NIC), represented by Muchtazar, Sustainability Manager: On the 9th of August, the NEST Program Manager met with Muchtazar and discussed NIC concerns of being operated in Morowali area and IMIP industrial park. NIC engaged with several car manufacturers. They visited mining operations and mineral processing plants and discussed the nickel supply and ESG issues.

NIC expects that car manufacturers who demand high ESG value and green products can provide incentives especially for the premium price of the green nickel products. He also featured an article that supports his opinion about this concern. <https://www.mining.com/web/metals-firms-confused-by-esg-regulations-but-hope-for-future-price-premium/>

Muchtazar mentioned that one of the biggest challenges with their mining operations is illegal mining where it is indicated they are also listed as the ore suppliers for the processing plants. NEST may consider familiarizing itself with these illegal miners where land clearings and massive environmental destruction remained uncontrolled in the nickel supply chain.

Currently NIC and other nickel companies are developing the Indonesia ESG standard hosted by PERHAPI. An outcome of the proposed standard is expected to be the policy recommendation for the decision-making process of the new regulations.

Since 2019, NIC has supported the rehabilitation of 1,905 ha of watershed area in Central Sulawesi in which 2,095,500 trees (such as pines, rattans, and durians) have been planted until 2022. Approximately 20 ha of the area of reclamation zone (post mining of Heng Jaya) have been rehabilitated.

A GHG inventory of Hengjaya mining and Heng Jaya Nickel have started to be collected while at the same time NIC also works to strengthen its climate governance and has researched potential improvement opportunities related to carbon footprint from the fuel usage at Hengjaya Mine. In parallel, NIC has also started to implement a “Future Energy” framework by commissioning the solar system at Hengjaya mine as well as signing binding term sheet with PT Sumber Energy Surya Nusantara and Quantum Power Asia to develop 200 MWp and 220 MWp solar projects for its operations in Morowali. NIC commitment to the net zero emission is demonstrated by the decarbonization plan that currently is ongoing study.

In summary, NIC welcomes the NEST initiatives as the program is aligned with their commitment to improve their ESG standard at the IMIP site level and the Morowali region. They are willing to join the workshop and exchange information.

Trimegah Bangun Perkasa (TBP- Harita Lygend group), represented by Klaus Obenhauer, Sustainability Manager: The NEST Program Manager met with Klaus on the 10th of September. Klaus mentioned that TBP targets to achieve RMI Responsible Minerals Assurance Process conformant status by 2024 and to complete an independent IRMA assessment by 2025. TBP aims to reach the EU market's battery supply by rectifying the international standards. In 2023, Harita Nickel commenced an extensive biodiversity research project extending beyond its operational area. This landscape scale approach aims to set the company on a path to provide disclosures as recommended by the Taskforce for Nature-related Financial Disclosures. In line with this future conservation reporting can be enhanced with a more comprehensive account of the International Union for Conservation of Nature (IUCN) species list.

Klaus is very interested in NEST initiatives as currently the project is aligned with their biodiversity program that focuses on the landscape level risks and impacts. Klaus expects a similar program can be implemented in their area of operations in Obi Island (Halmahera). In summary, TBP was willing to join the workshop and welcome the NEST initiatives as the program is aligned with their commitment to improve biodiversity management within their area of operations.

United States Agency for International Development (USAID) Accelerating Sustainable Energy Deployment in Indonesia (SINAR) Project, represented by Bill Meade, Chief of Party: On the 15th of August, the Program Manager consulted with Bill to seek his opinion about NEST. Bill emphasized that the Tetra Tech-led SINAR project currently focuses on the energy transition issues in Indonesia. Some concerns are aligned with the decarbonization plan to achieve net zero target in the nickel down streaming sectors where Tetra Tech provided independent assessment on Harita Lygend group's decarbonization plan to seek opportunity for further collaboration with USAID. However, Harita Lygend has not responded yet to the latest report result.

Regarding the NEST project, Bill suggested connecting with USAID and the US Embassy to leverage the NEST project status to Government-to-Government agreement to optimize the intervention to the policy level and the implementation and supervision on site.

PT Vale Indonesia (PTVI), represented by Vivian Feng, General Manager of Corporate Affairs: NEST Program Manager and Tetra Tech Home Office representative (Bocar Thiam) met with

Vivian on the 20th of August to introduce the project and inquire about their community engagement approach. PTVI is leading the good mining practices, community engagement, and sustainable natural resources management of nickel companies in Indonesia as they have been operating in Indonesia for more than 56 years. Tetra Tech invited PTVI to participate in the workshop to share their best practices on nickel mining and nickel processing plant activities; however, due to existing engagements, Vivian was not available to participate in person in the workshop. The promise was made to virtually attend if time permits.

2.4 DONORS

United States Embassy and USAID, represented by Amy Padilla (Energy and Minerals Officer), Tina Bucton (Climate Officer), Prima Wati (Conservation and Biodiversity Assistant), John McDaniel (Chief Political Economist) and Farhad Ghaussy (Agriculture and Economic Growth Team Leader): On September 19, 2024 at the suggestion of the Economic Section of the US Embassy in Jakarta, the NEST team delivered a summary presentation of the project's objectives, approach, HCV screening process leading to site selection, various activities to be implemented and expected results. Participants (in person and virtually) included members of the Embassy's economic section (environment, energy and minerals, climate), the Chief Political Economist, and the Team Leader of USAID's Economic Growth Sector. Discussions focused on the continuous commitment of private investors to finance the implementation of activities, what could be a potential role of the US government in such a project, and the government of Indonesia's commitment to support actions through this project that will ensure the protection of their environment and the improvement of their livelihoods.

At the end of the session, the representatives of both the Embassy and USAID expressed their interest in being kept informed of the progress of the screening and site selection process and wished to have a follow up meeting so that the NEST team could share the resulting roadmap for the project. Multiple contacts within and outside of the Embassy were shared with the NEST team to provide more information. The Program Manager is leading the follow up with these contacts.

World Bank, represented by Balada Amor (Senior Mining Specialist): On the 4th of September, the Tetra Tech Home Office representative, Megan Huth, introduced NEST to Balada. She responded that at this stage, the World Bank is interested in the intervention of the critical mineral policy regime in Indonesia to improve the ESG value on the battery supply chain in Indonesia. A comprehensive study plan is currently being designed to cope with the recent issues of critical minerals in Indonesia. Current focus of World Bank activities related to mining is on the coal phase out and Just Energy Transition Plan.

3.0 HCV Screening Process

In response to increasing interest to scale up the use of the HCV approach in landscapes and jurisdictions, the HCV Screening guidance was published as a supporting tool. HCV Screening is a participatory desktop process to understand which types of HCVs **may be present in a landscape, and how those values are threatened, thereby setting priorities for follow-up action** at landscape scales. While it is not appropriate to employ screening as a standalone methodology from which land-use planning decisions are made, it does provide a first step to plan and effectively allocate resources where the need is likely most urgent. Follow-up actions to screening can include participatory mapping and field-level assessments to identify HCVs present and the areas that support them. HCV Screening considers

- Likelihood of HCV presence
- Potential threats to these likely HCVs
- Which areas are most urgent for follow-up action on the ground.

Screening can also highlight information gaps and spark stakeholder discussion about long-term sustainability in their landscapes. Through Screening, stakeholders can determine how priorities to maintain or restore HCVs can potentially fit into larger sustainability plans for the jurisdiction, and what resources may be required to accurately identify and confirm HCV presence, document threats to them, and formulate effective and harmonized management and monitoring recommendation for HCV protection.

HCV screening is a flexible tool comprised of 6 steps:

Step 1 Define purpose and scope

State the purpose of the screening exercise and define the area to which screening will be applied.

Step 2 Gather information for analysis

Gather information from literature reviews, compile available spatial data and consult landscape stakeholders and experts as the basis for determining which HCVs and threats are likely to be present in the landscape.

Step 3 Determine the likelihood of HCV presence

- Use available information to identify potential HCVs in the study area and make initial groupings of different types of HCV within each of the six categories.
- Identify indicators that can illustrate likely presence of each HCV and define cut-off points or decision rules to determine high and low probability of presence classes.
- Produce probability maps based on cut-off points or decisions rules.

Step 4 Determine the likelihood of threats to HCVs

- Determine threats to HCVs that are known or likely to occur in the landscape.
- Map threats, using the same approach to step 3 of selecting indicator data and cut-offs based on stakeholder input. The analysis of threats to HCVs helps direct attention to where follow-up action is likely to be needed to maintain and protect them - the ultimate goal of the HCV approach.

Step 5 Identify priorities in the landscape

Combine probability maps with threat maps to identify priorities and plan follow-up interventions.

Step 6 Present results

Compile results into an accessible report with accompanying data, references and proposed follow-up actions.

3.1 HCV SCREENING PURPOSE AND SCOPE FOR NEST

The specific purpose of this HCV Screening exercise was to inform potential locations and types of conservation activities that could be undertaken by the project to reduce impacts on biodiversity, ecosystem services, communities and cultural values in the mining landscape of Morowali District. HCV Screening would be used to develop HCV probability maps and threat maps (of both internal mining industry related threats to HCVs) and external threats (such as from illegal logging and plantation development) to prioritize candidate sites for further stakeholder engagement and impact mitigation, driven by best available data and knowledge of the area, prior to further detailed surveys in the field.

NEST conducted HCV Screening covering the entire Morowali District in Central Sulawesi to inform potential activities that could be implemented by the project. A substantial buffer of 10km was also applied to account for landscape variables and potential impacts to coastal and marine environments as well as to map the potential continuity of HCVs with other Districts.

3.2 STAKEHOLDER ENGAGEMENT

Hearing with the Provincial Government Stakeholders: On the 23rd of September, the NEST team conducted a limited hearing session to the relevant subnational government authorities hosted by the DLH. The objective of the hearing session was to introduce NEST and gather public opinions and concerns of the relevant authorities of both Morowali and North Morowali Regency and Central Sulawesi Provincial level such as the Environmental and Forestry Agency, Spatial Planning Department, Fisheries and Coastal Department, and the Regional Planning Development Department.



Opening Speech of the Hearing by the Secretary of the DLH of Central Sulawesi

The meeting was opened by the DLH represented by the Secretary of the agency, then continued by the NEST project introduction and question and answer session. Several participants raised environmental issues impacted by the nickel mining and processing activities such as floods, landslides and poor air and water quality which recently are commonly observed in their area of jurisdictions. They received many grievances from the local communities related to these issues especially related to poor water quality.

Another concern related to marine ecosystems, particularly the coral reef spots along the Morowali coastal lines where the local representative considered they might be impacted adversely by the expansion area of the nickel processing and port activities of the industrial park. The coral reef spots at the southern coastline are diving spots that can attract divers and may generate income for the local government. Participants expected that the NEST project also would consider conservation efforts at the southern coastlines.

The participants also questioned HCV data collection process. It was suggested that data collection should align with the existing procedures applied within the local government. Participants wondered whether the result of the HCV workshop and candidate conservation site selection will replace the existing spatial planning within the neighborhood associations (RT/RW). However, NEST with facilitation from the HCV Network Secretariat team, reaffirmed that HCV Screening would only result in indicative maps that can

be used to consider alternatives for project implementation, and would not affect any official spatial planning revision processes. NEST will fully comply with the existing regulation and will not seek to replace the current approved document.

Participants also raised the issue of the emissions generated by the development of Captive Coal Fired Power Plants (CFPPs). They expressed preference for an emission reduction program be one of the focuses of NEST particularly in the nickel processing plants area. NEST's feedback was that the HCV Screening workshop might not be directly related to the emission reduction but in the long-term implementation GHG emission is one of the expected outcomes of the project.

In summary, all the meeting participants accepted the project and were willing to join the two-day workshop and provide data for the HCV Screening workshop. It was expected that the project could contribute positively to the improvement of environment and social value in Morowali area and Central Sulawesi province in the future.



Presentation of the Screening process at the hearing in Palu

Key Questions/Feedback Raised During the Hearing in Palu

- What is the result / output of this work? A. Initial candidate locations for project implementation that would be subject to further surveys and verification.
- Local governments and consultants must collaborate and be in line, so that there are no differences of opinion and clashes in the future.
- Once a site is designated as high conservation value, will the others be exempt such as those that have been damaged? A. HCV Screening is an initial analysis of values in the landscape. No 'designations' result from the Screening. Priority areas are those that need further follow-up action such as field level surveys and conservation planning that could suggest restoration to protect existing values and restore values lost.
- Companies that should have environmental documents (AMDAL), RKL RPL but do not comply with them, are there any sanctions? A. HCV Screening uses secondary data and is not a substitute for legal provisions. Indicative results could be used by authorities to plan investigations into areas where they suspect companies have violated legal requirements
- Are we going to take action in areas and values that have been affected? What about new objects that have not been affected? Will they be protected? A. HCV Screening looks at likely values and those that are likely to be affected and where values are likely to be relatively more secure. The results can be used to discuss appropriate follow-up and potential project implementation options for values at risk and those that are less at risk.
- Is information alone sufficient to determine conservation value? A. HCV Screening does not designate areas and only indicates priority locations for follow-up work. For some HCVs, secondary data is of high quality and little field verification needed, however, for other values (such as community needs and cultural values), direct engagement with affected communities to confirm and document their values is required, and Free, Prior Informed Consent must be sought before any project implementation is implemented.

- In areas where there is already high conservation value data, will it violate existing regulations? A. HCVs describe the function that natural ecosystems provide to support nature and benefits that communities derive from nature. This information can be used by decision makers to evaluate regulations and in Indonesia. In Indonesia, confirmed High Conservation Value areas can be proposed as preservation areas to be considered for additional protection following existing rules and regulations.
- Is the ultimate goal just to share responsibilities? Because the private sector should be fully responsible for all the impacts that have occurred so far. A. As well as producing indicative maps or priority locations for project implementation, the HCV Screening process is designed to spark discussion and identify parties willing to collaborate at landscape scales for the protection of biodiversity, ecosystem services, community needs and cultural values.
- What about the value of justice? A. The HCV includes social values that communities require for everyday lives to thrive. Where these values are threatened (such as a decline in material goods and services provided by nature) these areas and communities should become higher priorities for action by the project.
- After data collection is complete, is it enough to decide whether to continue this work or not? A. HCV Screening is the initial step in deciding where to implement project activities and which stakeholder should be engaged. It will highlight options that stakeholders can use to decide on further courses of action.
- Is there any cooperation with other ministries? A. HCV Screening is an open and participative process to the extent possible. Results can be shared widely to Government Ministries to illustrate the kind of project implementation envisaged and the locations where these would most likely be appropriate.
- Will the research/study results be shared with the government? A. Yes.

3.3 DATA COLLECTION AND IDENTIFICATION OF LIKELY HCV PRESENCE

Using available information to identify potential HCVs in Morowali District, the team determined the likelihood of HCV presence. Referring to knowledge of participants and the Indonesian HCV National Interpretation (NI), the six categories of HCVs that are likely to occur in Sulawesi were listed.

- HCV 1: Concentrations of biodiversity especially in protected areas, key biodiversity areas, critical habitats – There are at least 381 species / sub-species of threatened or near-threatened animal and plant species in Sulawesi. Mammals (both terrestrial and marine became the focus of identifying important areas). Freshwater species that are restricted range species and highly threatened in other districts were not included as they lie largely outside of the area of interest.
- HCV 2: Large, landscape level ecosystems and ecosystem mosaics, viable populations of the great majority of species, and natural patterns of distribution and abundance indicated by data such as intact forest landscapes were considered absent from the landscape due to fragmentation from resource exploitation.
- HCV 3: Naturally rare and threatened ecosystems and habitats were identified from an examination of the landscape and participants' knowledge. Formal assessments (such as IUCN's Red List of Ecosystems (RLE)) have not been carried out and guidance is lacking available in the NI. However, workshop participants did identify rare ecosystems in the district included karst ecosystems, montane forest, mangroves and coral reefs and anthropogenic threatened ecosystems included peatlands and lowland forests.
- HCV 4: The NI focuses on 'regulating services' for the protection of water catchments such as riparian and coastal buffers and areas important for control of flooding, and control of erosion of vulnerable soils and slopes. Other ecosystem services (such as control of wildfire) are not critical in Morowali.
- HCV 5: Fundamental resources for satisfying basic necessities especially where local communities have customary rights include for water, fishing grounds, timber resources, non-timber forest products, and medicinal plants.

- HCV 6: Sites, resources, habitats, or landscapes which are significant at the global or national level and those critical for Indigenous Peoples or local communities include known sacred sites, burial grounds, and historic village sites and large areas of customary rights claims that have been registered.

HCV Indicators. Indicator data and cut-off points were selected to indicate likely probability of presence through stakeholder discussion, guided by literature and experience from the field. While environmental indicators and cut-offs were relatively straightforward, defining indicators for social HCV 5 was challenging and proxies were used. Indicator data and threshold cut-offs were documented and used for mapped probability of each HCVs attribute and category. Tables showing these ‘decision rules’ are presented in the respective HCV sections with probability maps.

HCV Threats. The major threats to the environment and social values in Morowali were discussed. Threats were separated into ‘internal’ mining sector driven threats, and ‘external’ threats driven by non-mining actors. Indicator data was selected to illustrate where these threats were most likely to occur and cut-off points used to indicate likely level of threat through the district. Selection was based on stakeholder discussion and experiences from the field. Verification using third-party data such as satellite imagery was used where possible to determine the extent of each threat (such as land conversion to mining operations and infrastructure, deforestation, agricultural expansion, turbidity of water).

The most significant internal threats included:

- Threats from mining operations and infrastructure development
- Internal threat from potential open-pit mining (current and future)
- Sedimentation run-off (layer under development)
- Pollution (Cr-VI) in aquatic systems (layer under development)

External threats included:

- Illegal logging
- Small-holder agricultural expansion
- External threat from large-scale land use sector (plantations and timber)

Cut-offs were suggested during the workshop and assimilated where approximate. It is acknowledged that there will be a degree of variation throughout the landscape and indicator data and thresholds are to guide the prioritization process. Maps of the areas under threat can be found in Annex 5.

HCV Screening Process Workshop: The workshop was held September 24 and 25, 2024 in Palu. About 35 people (see list of attendees in Annex 2) attended and contributed to the discussions both in plenary and working groups. The Central Sulawesi Province Environment Secretary gave an opening remark by emphasizing the need for collaboration between local governments and consultants to prevent future conflicts regarding environmental management. He noted that clarifications are necessary about the status of sites designated as high conservation value, especially concerning previously damaged areas. Companies that fail to comply with environmental documentation requirements, such as Environmental Impact Analysis (AMDAL), Environment Management Plan (RKL), and Environment Monitoring Plan (RPL), may face sanctions. There is a pressing need to protect both affected and unaffected areas, raising questions about whether information alone is sufficient for assessing conservation value. Existing regulations must be adhered to, particularly in areas with high conservation data. The discussion also highlighted the importance of the private sector’s accountability for past environmental impacts, alongside considerations of justice in decision-making.

Completion of data collection is vital for determining the direction of future initiatives. The Secretary noted significant environmental threats arising from mining and other industrial activities, particularly concerning local water quality. Additionally, while coastal areas hold recreational potential, development decisions are primarily controlled by the central government. The Secretary inquired about cooperation with other ministries and stated that any data requests should follow an official written procedure. He noted that research outcomes should be shared with the government, and there may be revisions to the Regional Spatial Planning Plan based on study results. Lastly, there is a strong emphasis on reducing emissions and transitioning to clean energy, with support from the NEST's initiatives to inform planning for the next five years.



Working Group to identify HCV areas

Some key points during the group discussion included:

1. **Environmental Documents and Conservation Laws:** The importance of environmental documents like AMDAL for mining areas in Morowali was emphasized by a participant. He referred to regional regulations (such as Southeast Sulawesi's Regulation No. 5 of 2021) and Law No. 32 of 2024, which replaced the previous law on conservation areas. The focus is on ensuring environmental documents align with conservation efforts without conflicting with existing legal frameworks.
2. **HCV Areas:** Several discussions around environmental planning and studies, revolved around determining and protecting HCV areas, especially where mining operations are ongoing. The complexity of identifying and integrating these values within existing frameworks like AMDAL was highlighted, along with the challenges of balancing development and conservation.
3. **Morowali Nature Reserve:** Concerns were also raised about the 190,000-hectare Morowali Nature Reserve, which is threatened by illegal activities like hunting and forest theft. It was proposed that the reserve be designated as an HCV area to protect endemic species and Indigenous communities.
4. **Stakeholder Involvement:** The workshop emphasized the importance of involving various stakeholders, including local governments, companies, NGOs, and Indigenous communities, in managing the environmental impact of industries like mining.
5. **NGO Perspective:** The representative of WALHI (Wahana Lingkungan Hidup Indonesia), expressed concerns about mining's environmental damage in Morowali and surrounding districts. He called for stricter regulations and better enforcement to manage the impacts, especially on critical issues like water crises attributed to mining.

Overall, the discussions revolved around improving environmental management by aligning legal frameworks with on-the-ground conservation efforts, particularly through HCV standards and stronger stakeholder collaboration. Further consultations are planned to continue the discussions and refine the strategies for environmental management in Morowali and other regions affected by mining. The

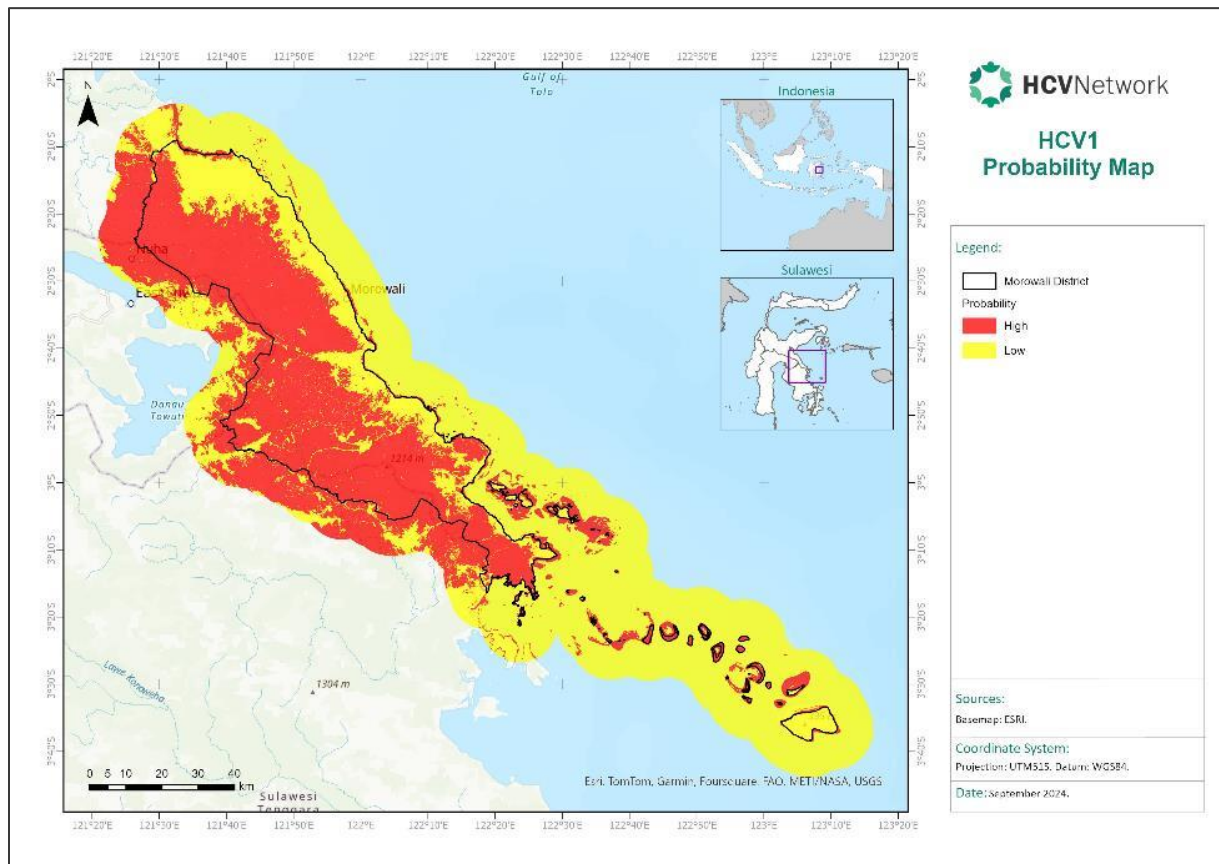
workshop participants agreed to maintain ongoing dialogue and collaboration, with the aim of creating a sustainable development model for the region.

3.4 INTERIM RESULTS OF THE SCREENING PROCESS

The complete set of threat maps emerging from the HCV Screening can be found in Annex 4. The results below provide an overview of the findings along with the probability maps.

HCV 1: Species Diversity

In Morowali, rare, threatened, and endangered (RTE) species are found in both terrestrial and aquatic ecosystems. Participants selected umbrella species that are likely to represent the majority of RTE species with similar habitats and ecosystems within the region, such as other forest plant species, mammals (terrestrial and marine), reptiles and avifauna. Areas with a high probability of HCV presence were defined from mapping suitable ecosystems of these umbrella species – relatively intact forest and reef ecosystems.

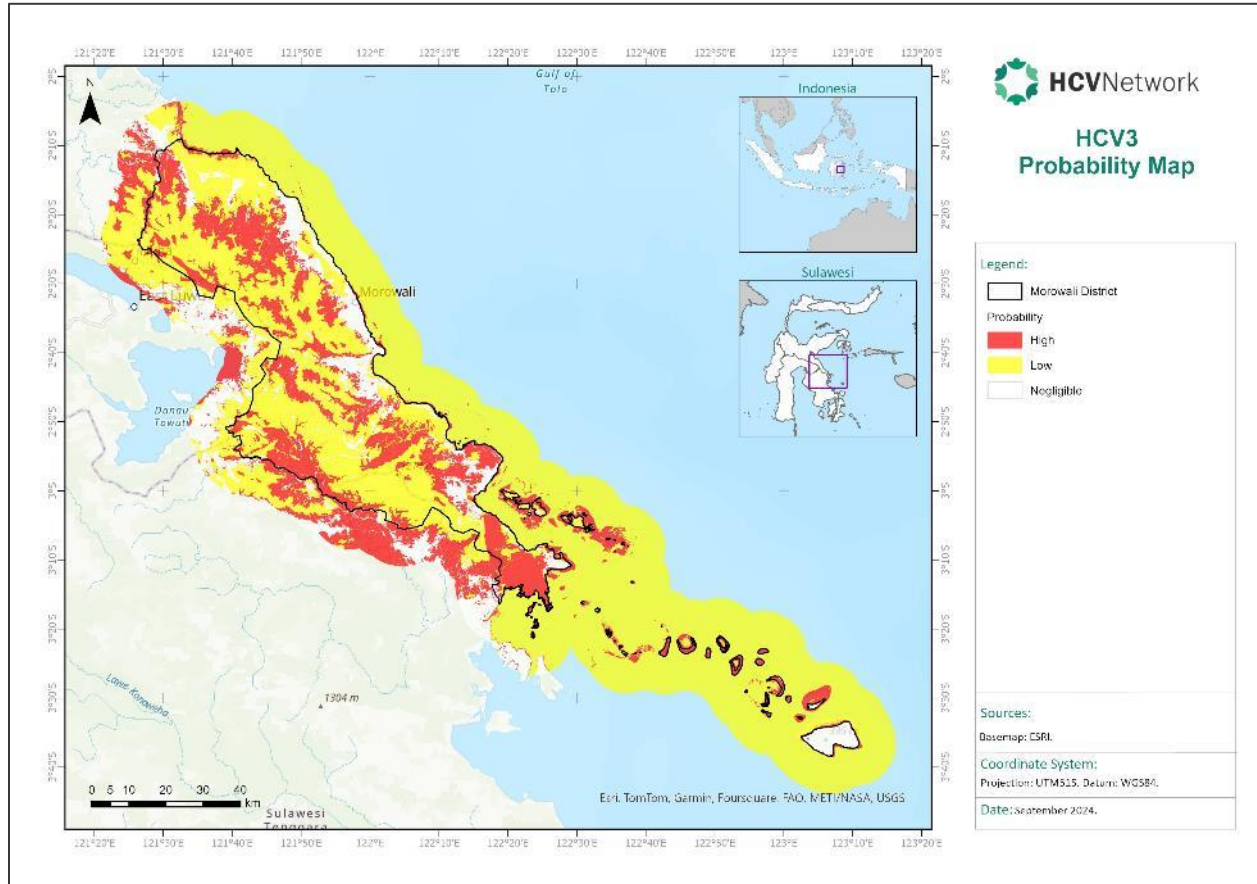


HCV 2: Landscape-level Ecosystem, Mosaics, and Intact Forest Landscape

The workshop could not identify any intact forest landscapes with the minimum of 20,000 ha in Morowali District. Although forest cover is considerably large in the area, the workshop participants did not consider these areas to qualify as HCV 2 due to high levels of fragmentation and impact affecting overall biodiversity.

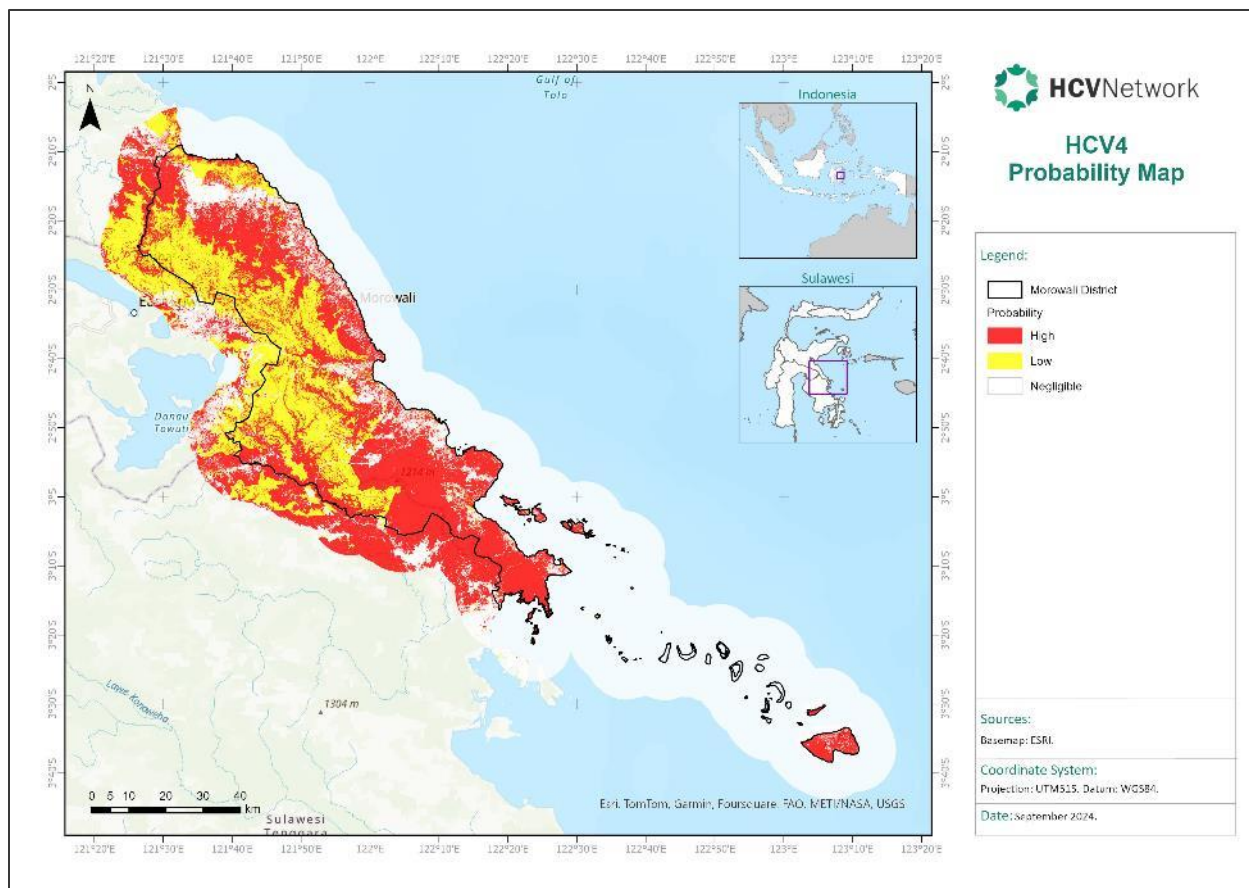
HCV 3: Ecosystems and Habitats

Morowali has a diverse type of ecosystems both terrestrial and aquatic. The analysis focused on the rare and threatened natural ecosystems which need to be maintained and are unique to Sulawesi and Morowali in particular. Areas with a high probability of HCV 3 were defined as karst ecosystems, mangrove ecosystems and reef ecosystems (naturally rare ecosystems in the landscape), and lowland forest ecosystems (threatened ecosystems due to rapid anthropogenic driven changes such as conversion to agriculture and infrastructure development from both mining and other sectors).



HCV 4: Ecosystem Services

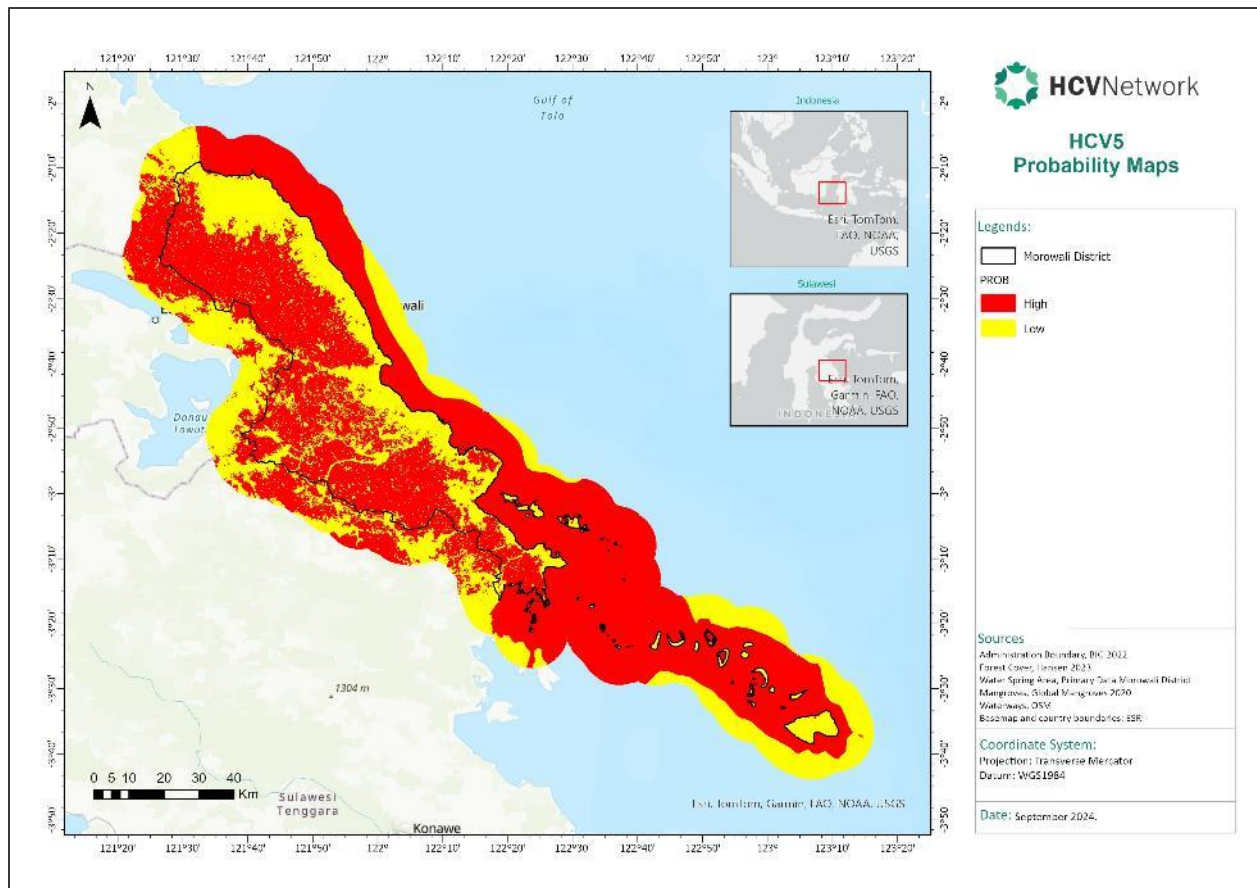
Vegetation cover and topography are key factors in influencing impacts from floods. Areas with a high probability of HCV presence were identified in areas of steep slopes and natural vegetation cover crucial for preventing erosion and landslides, a 50-meter buffer around waterways to protect the ecological role of riparian zones in protecting soil erosion along waterways, and regulating hydrology, in mangroves and coastal zones recognizing their importance in tidal erosion control.



HCV 5: Community Needs

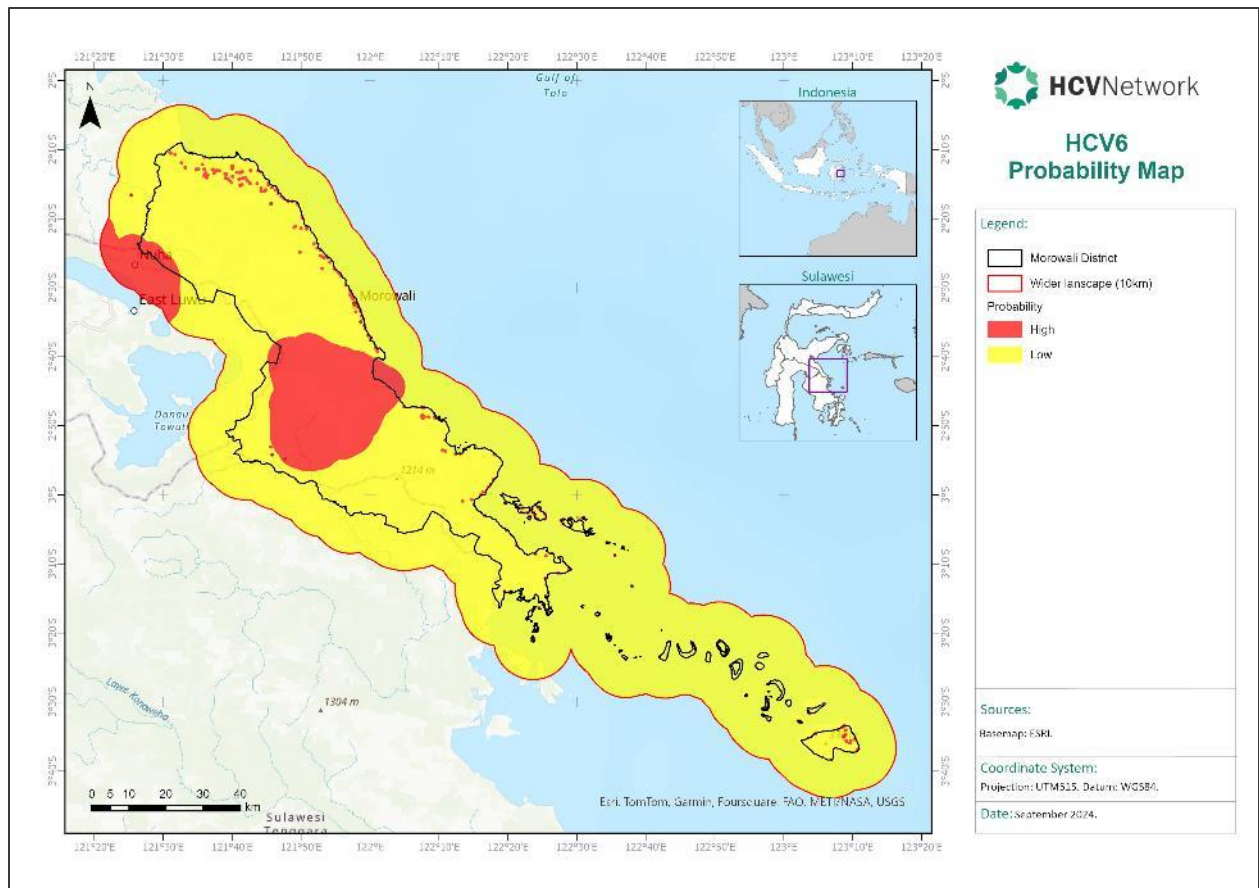
The group discussions pertaining to social elements during the workshop showed that there are still many communities that rely on forests and rivers as their source of needs. Communities are still using rivers as their primary source for water and fishing to find protein sources, and forests for housing materials, non-timber forest products such as bamboo and rattan, and medicinal plants for traditional remedies. Indigenous Peoples still reside in Morowali District, specifically in Bungku Tengah and Bahodopi Area. Suku Wana from Bungku Tengah Area and Suku Toepe from Bahodopi Area were identified during the discussion which have a high possibility to use forests and rivers as their irreplaceable needs. A precautionary approach was taken to identify all areas of natural ecosystem and inshore marine areas suitable for fishing as areas with a high probability of HCV 5 presence.

‘Low probability’ mapped here does not mean that there are no HCV 5. Local communities must be engaged to determine and map the existence of any critical and significant resources for local communities and Indigenous Peoples in the Morowali landscape through participatory mapping and discussions.



HCV 6: Cultural Values

The workshop revealed that local sites considered as HCV 6 were abundant. The local government has an up-to-date data set showing the location of archeological sites, burial sites, and community sacred sites in Morowali District. Other cultural areas were also identified during the workshop which were sites for Bahomoteffe Community which covers the middle part of Morowali, and Sorowako Community which overlapped with west part of the Morowali.



4.0 Next Steps Following the September 2024 Workshop

October 2024 was a busy month in Indonesia including provincial governor elections, and the swearing-in of the newly elected President of the Republic. Stakeholders involved in the project noted that October would be a very busy month for them, which affected their engagement to rapidly respond and meet the various commitments made to the project. Keeping this in mind, the project revised its timetable to complete the following stages:

Additional data collection: Discussions during the hearing and the HCV area workshop enabled the project and the participants in both sessions not only to present the physical, geographical and spatial data previously collected through technology-based tools by the HCVN team, but also to supplement this data during the discussions and to obtain socio-cultural data from the participants. Based on what was gathered as data and what is required to inform the site selection and recommended activities, the project team requested more data from the provincial authorities to complete the analysis.

Representatives of the province's technical departments (cartography, spatial planning and development, mining, forestry and environment, and the customary registration board) promised to provide the data available at their levels. It was therefore agreed to submit an official request to the relevant authorities to acquire the data. From the week of October 1, the NEST team (Community Engagement Specialist and Program Manager) began the official procedure for making these requests.

Finalization of Screening process : The HCVN Secretariat finalized its HCV Screening report to include the complete discussion for each step of HCV Screening, priority definition and options or candidate sites for project implementation, and site selection mechanism based on an adapted mitigation hierarchy applied to the Screened HCV results. The HCVN team suggested holding a site selection workshop by October 21st to ensure participants have time to go through the Screening report.

Ongoing engagement with stakeholders: The project team planned to organize a roundtable briefing with central government stakeholders in Jakarta (Coordinating Ministries of Maritime and Investment, Ministry of Energy and Mineral Resources, Ministry of Environment and Forest) to present the results of the HCV Screening process workshop and gather feedback from government structures, so as to align with national development plans, laws and policies, and further confirm their support to the project.

In addition, the US Embassy, as well as private sector investors, expressed an interest in being informed of the project's site selection results and roadmap, with a view to identifying potential synergies. The project continues to liaise with these and other stakeholders to define potential collaboration.

Annex I: Initial NEST Stakeholders Consulted

Location	Name of the structure, community or individual	Organization	Note
Jakarta	Meidy Katrin	General Secretary APNI (Nickel Mining Association)	
	Muchtazar MS	Head of Sustainability Nickel Industries	
	Tubagus Nugraha	Assistant Deputy Mining and Investment of Coordinating Ministry of Maritime and Investment (MARVES)	
	Amy Padilla	US Embassy, Energy and Minerals Officer	
	Rosabelle Purnama	US Embassy, Energy and Minerals Specialist	
	Tina Bucton	US Embassy, Climate Change	
	Prima Wati	US Embassy, Social and Environmental Specialist	
	John McDaniel	US Embassy, Chief Political Economist	
	Farhad Ghaussy	USAID Team Leader, Agriculture and Economic Growth	
	Vivian Feng	Vale, General Manager—Corporate Affairs, Asia Pacific	
	Tubagus Nugraha	Coordinating Ministry for Maritime Affairs and Investment, Assistant Deputy Coordinating Minister of Mining Affairs	
	Balada Amor	Senior Mining Specialist, World Bank	
	Tomi Haryadi	Director of Agriculture, Land and Water, World Resource Institute	
	Andi Mutaqqin	Executive Director, Satya Bumi	
	Elviera Putri	Head of Sustainability, Ceria Nugraha Indotama (CERIA) Group	
	Klaus Obenhauzer	Sustainability Manager, Trimegah Bangun Perkasa (TBP-Harita Lygend group)	
Bill Meade	Tetra Tech, Chief of Party SINAR project		
Sulawesi	Johannes Febrianto	Environmental Supervisor IMIP	Indonesia Morowali Industrial Park (IMIP) is owned by Shanghai Decent Investment Group (Tshingshan) 49,69%, PT Sulawesi Mining Investment 25% and PT Bintang Delapan Investama 25,31%
	Franky	ESG Zhong Tsing New Energy (CDNE)	
	Anto Sangaji	Yayasan Merah Putih, Palu	

Location	Name of the structure, community or individual	Organization	Note
	Undeng/Sunardi	WALHI Sulteng - The Indonesian Environment Forum, central Sulawesi	
	Jabar Lahaji / YSM	Yayasan Sahabat Morowali, local NGO	
	BKSDA Sulteng	The Natural Resources Conservation Center/BKSDA,	There is a “natural primary school” for <i>Wana Posangke</i> adat’s people in north Morowali Nature Preserve conducted by BKSDA field officer
	SETDA/north Morowali Regency secretary office		As local government host for various issues of nickel mining
	Environment Office or Forestry Office in North Morowali Regency		In provincial level, the environment and forestry is one office, but separated in regency level
	North Bungku District Government		Good contact to have direct communication with the local government in district and village level
	Government of village Kolonodale		Villages in “Lingkar Tambang” area of the mining site area
	Save the Children		Another international NGOs that have area of work in Central Sulawesi

Annex 2: Provincial Government Hearing (September 23, 2024) and HCV Screening Workshop in Palu (September 24 - 25, 2024) Participants

#	Organizations (in Bahasa)	Organizations (English)	Representations at the hearing and workshop
1	<i>Direktorat Jendral Konservasi Sumber Daya Alam dan Ekosistem, Kementerian Lingkungan Hidup dan Kehutanan</i>	Directorate General of Nature Resources and Ecosystem and Conservation, Ministry of Environment and Forestry	Round table to be held in late October to present results and gather feedback
2	<i>Deputy Pertambangan dan Investasi, Kementerian Koordinator Maritim dan Investasi</i>	Deputy of Mining and Investment, Ministry of Maritime and Investment Affairs	Round table to be held in late October to present results and gather feedback
3	<i>Dinas Lingkungan Hidup Sulawesi Tengah</i>	Environmental Agency of Central Sulawesi	<ul style="list-style-type: none"> - Dr. Yopie Patiro - Head Office - Wahid Irawan - Secretary Office - Moh. Natsir A Mangge - Head Division - Suryati - Sri Ratnawaty Nur - Astin - Wahid Ilham - Mujib Safar - Aris K Halawa - Nia Oktafiana - Moh. Fadhel - Yunita Nirmansyah - Aldiansyah - Wawan - Rifky - Muhammad Wahid
4	<i>Dinas Kehutanan Provinsi Sulawesi Tengah</i>	Forestry Agency of Central Sulawesi	Susanto Wibowo
5	<i>Dinas Bina Marga dan Penataan Ruang Sulawesi Tengah</i>	Department of Public Works and Spatial Planning	Dr Yasin Baculu

#	Organizations (in Bahasa)	Organizations (English)	Representations at the hearing and workshop
6	<i>Dinas Kelautan dan Perikanan Sulawesi Tengah</i>	Department of Marine and Fisheries Service of Central Sulawesi	Samuel AS
7	<i>BAPPEDA Sulawesi Tengah</i>	Regional Planning Agency of Central Sulawesi	- Joice E.A - Ali Baharsyah
8	<i>BRIDA - Badan Riset dan Inovasi Daerah Sulawesi Tengah</i>	Regional Research and Innovation Agency	- Far Bouti - Moh Ali Musal
9	<i>BKSDA - Balai Konservasi Sumber Daya Alam Sulawesi Tengah</i>	Natural Resources, Ecosystem and Conservation Agency - Central Sulawesi Province	- Bambang DP - Nurhidayat - Dafira Desi
10	<i>DESDM - Dinas Energi Dan Sumber Daya Mineral Sulawesi Tengah</i>	Energy and Mineral Resources Office of Central Sulawesi Province	Irnowati
11	<i>BPKHTL - Balai Pemantapan Kawasan Hutan dan Tata Lingkungan XVI Palu</i>	Centre of Forest and Environmental Management Improvement, Regional XVI of Palu	Sergie R Zwageri
12	<i>Dinas Lingkungan Hidup Kabupaten Morowali</i>	Environmental Agency of Morowali	- Muhdar Daam - Nur Afni Masepo - Wawi Priyono
13	<i>Dinas Lingkungan Hidup Kabupaten Morowali Utara</i>	Environmental Agency of North Morowali	- Sigit - Daniel - Irwan - Andri
14	<i>KPH Tepe Asa Maroso Kabupaten Morowali</i>	Tepe Asa Maroso Forest Management Unit of Morowali	Ir Carnoto
15	<i>KPH Tepo Asa Aroa Kabupaten Morowali Utara</i>	Tepo Asa Aroa Forest Management Unit North Morowali	Yohanis Toding
16	<i>BAPPELITBANGDA Kabupaten Morowali</i>	Research, Development and Planning Agency of Morowali	- Elinar Beti - St Rukmana
17	<i>BAPPELITBANGDA Kabupaten Morowali Utara</i>	Research, Development and Planning Agency of North Morowali	- Isna Lepasila - La Ode Muh Yani - Indah Anggraini - Ryan
18		Eternal Tshingshan Indonesia	Invited but did not attend

#	Organizations (in Bahasa)	Organizations (English)	Representations at the hearing and workshop
19		PT Indonesia Morowali Industrial Park (IMIP)	Invited but did not attend
20		CNGR Advanced Material Co.Ltd	Ali Lipeng Ren
21		PT Huayou Indonesia	Attended partially online
22		PT Nickel Industries	Invited but did not attend
23		PT Merdeka Battery Materials	Invited but did not attend
24		Harita Lygend	Invited but did not attend
25	<i>PT Ceria Nugraha Indotama (CNI)</i>		Invited but did not attend
26		PT Eramet Indonesia	Invited but did not attend
27	<i>Asosiasi Penambang Nikel Indonesia</i>	APNI: Nickle Miner Association	Invited but did not attend
28		Association of Indonesian Mining Professional (PERHAPI)	Invited but did not attend
29		World Resource Institute (WRI)	Invited but did not attend
30	<i>Satya Bumi</i>		Annisa Rahmawati attended online
31		Earthworks	Invited but did not attend
32		Centre of Economic and Law Studies (CELIOS)	Invited but did not attend
33	<i>Fakultas Kehutanan, Universitas Tadulako</i>	Faculty of Forestry, Tadulako University, Central Sulawesi	Abdul Rauf
34	<i>Fakultas Hukum, Universitas Tadulako</i>	Faculty of Law, Tadulako University, Central Sulawesi	Dr. Ansar

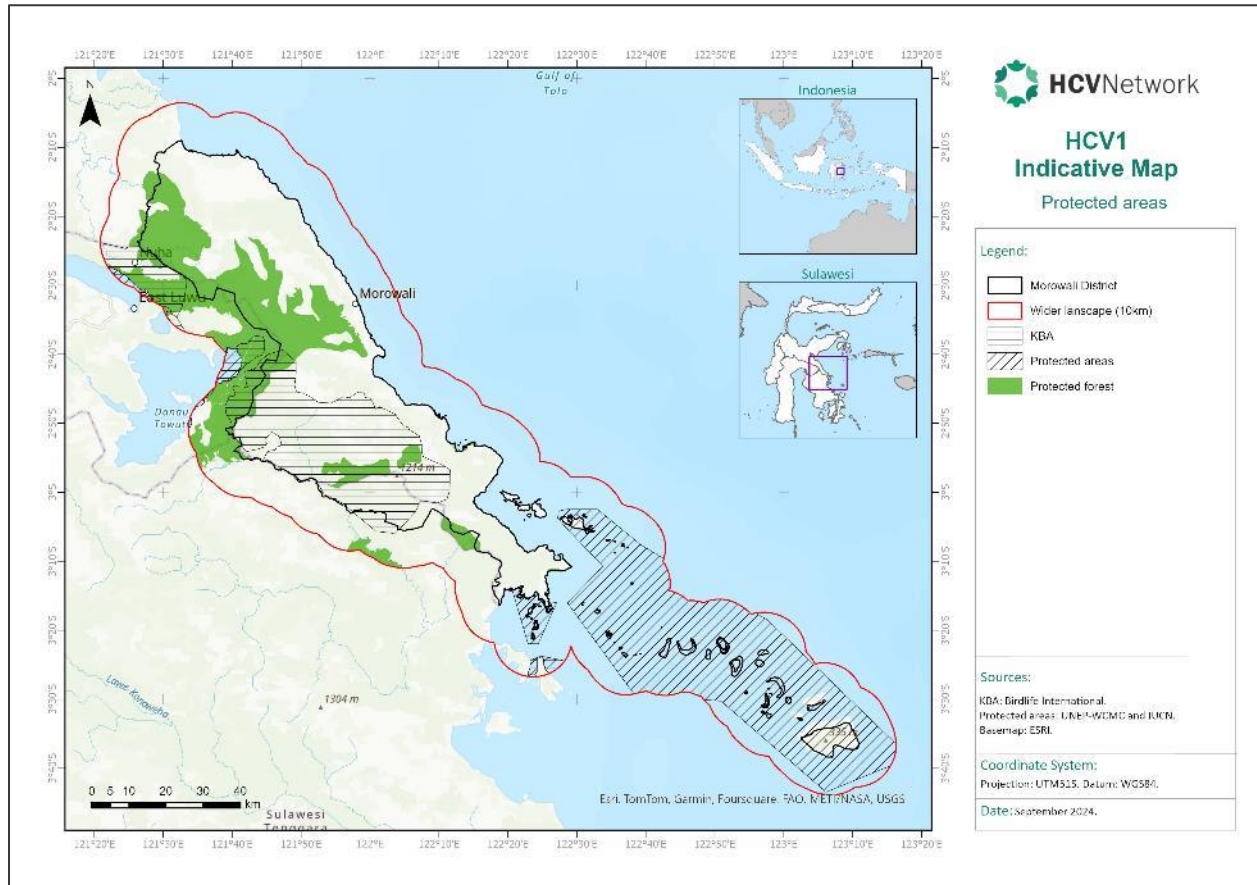
#	Organizations (in Bahasa)	Organizations (English)	Representations at the hearing and workshop
35	<i>Prodi Sosiologi/Antropologi, FISIP Universitas Tadulako</i>	Sociology and Anthropology, Faculty of Social and Political Study, Tadulako University, Central Sulawesi	Dr. Saipul
36	<i>Yayasan Merah Putih (YMPP)</i>	Local NGO in Indigenous Peoples and Forest Conservation	Kiki Rizky A Sahrina Syafar
37	<i>Aliansi Masyarakat Adat (AMAN),</i>	Indonesian Indigenous People Alliance	Yasin Labente
38	<i>WALHI (Wahana Lingkungan Hidup Indonesia) - National NGO Forum</i>	Environmental Forum Indonesia - Regional Central Sulawesi	Yusma Iskandar Yogi
39	<i>BRWA (Badan Registrasi Wilayah Adat) National NGO Forum</i>	The Indigenous Territory Registration Agency, Regional Central Sulawesi	Joisman Tanduru
40	<i>SL JKPP (Simpul Layanan - Jaringan Konservasi Pemetaan Partisipatif) National NGO Forum</i>	Service Point - Participatory Mapping Conservation Network, Central Sulawesi	Agus M Suleman
41	<i>Solidaritas Perempuan Palu (SPP) Sulawesi Tengah</i>	Women Solidarity Forum of Palu - Local NGO	Devan
42	<i>Perkumpulan BANTAYA</i>	BANTAYA Association, Local NGO	Syahrin

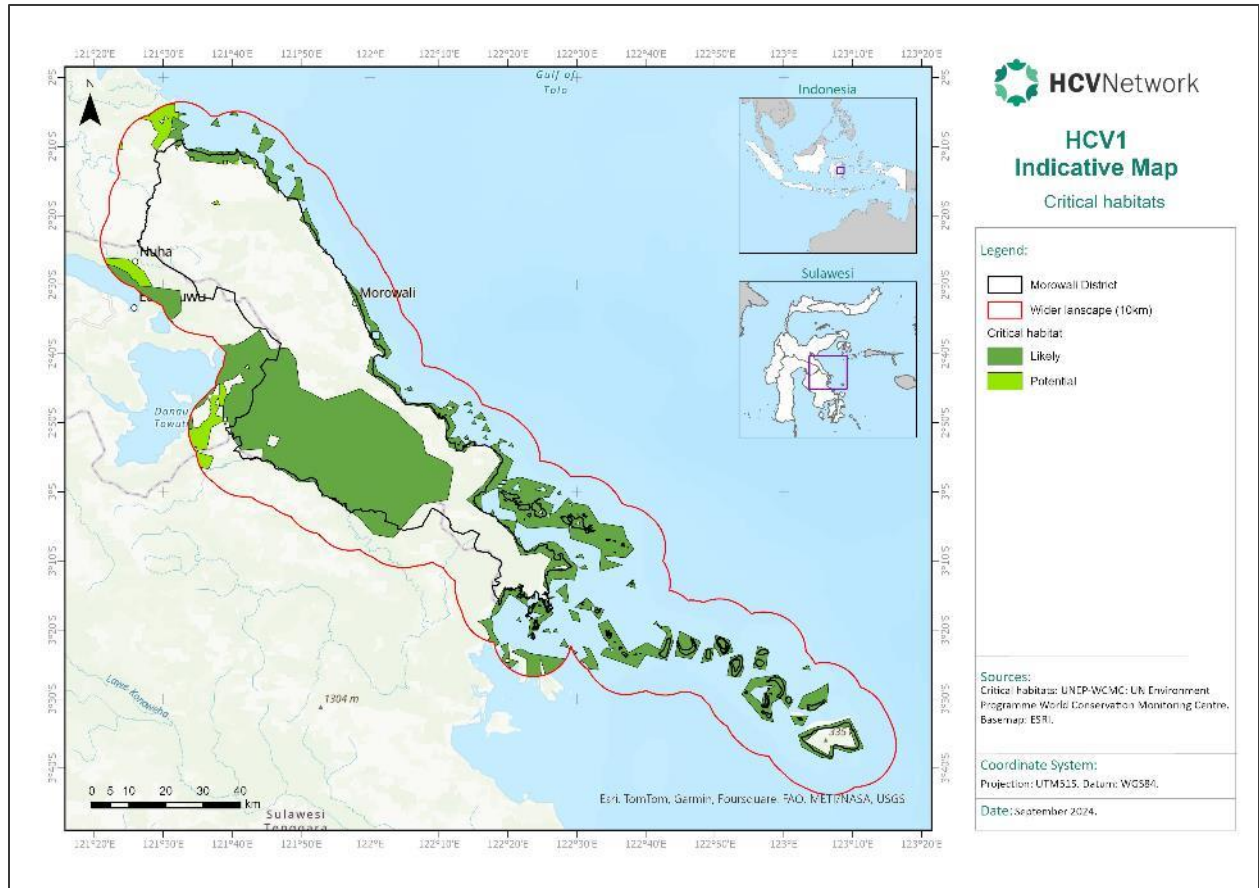
Annex 3: HCV Screening Workshop Agenda

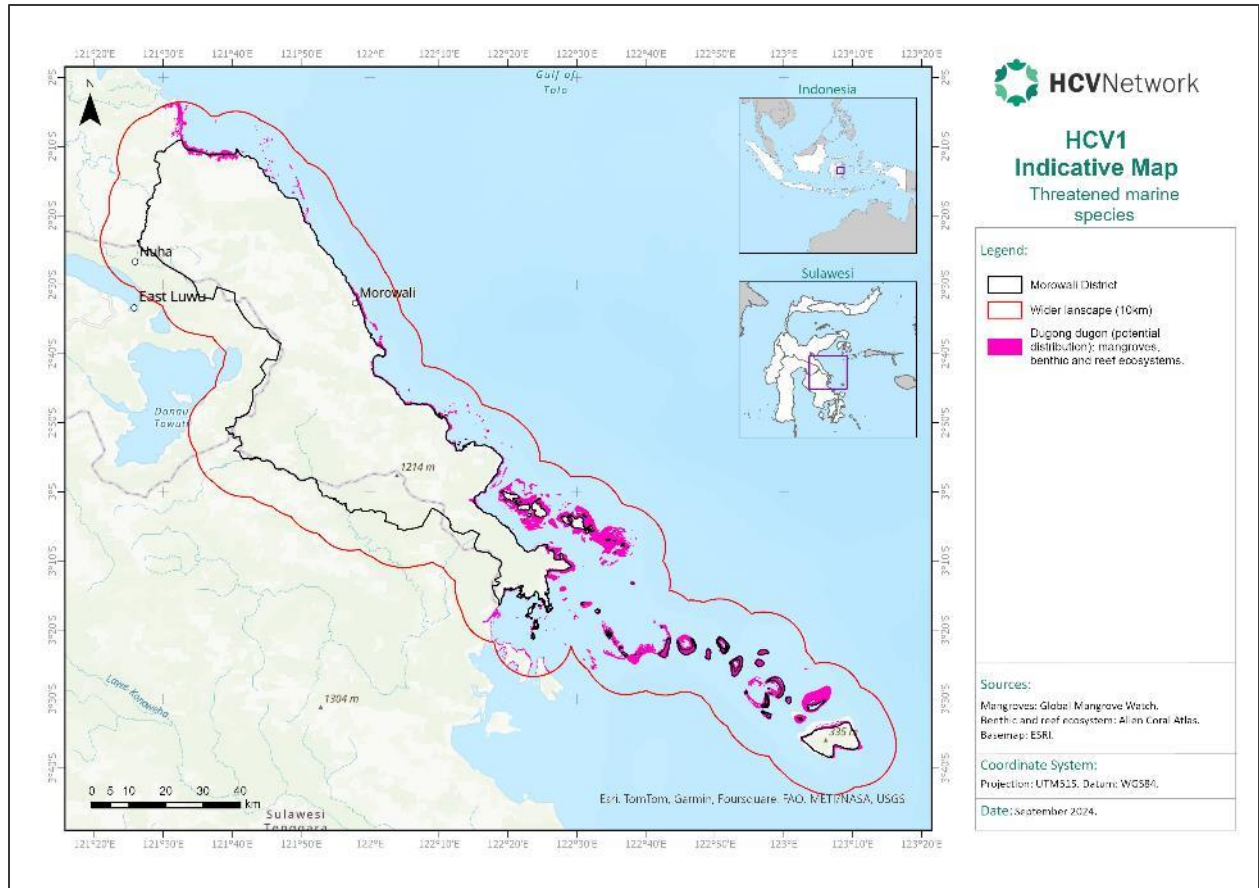
Time	Activities
Tuesday, 24 September 2024	
08:30 – 09:00	Registration of Participants
09:00 – 09:05	Opening Remarks by MC:
09:05 – 09:10	National Anthem: Indonesia Raya
09:10 – 09:15	Prayer
09:15 – 09:20	Welcome Speech by Provincial Environmental Agency of Central Sulawesi
09:20 – 09:30	Introduction of Tetra Tech Team – HCVN
09:30 – 10:30	Presentation on Nickel Project Study Impacts on Coastal Ecosystems and Greenhouse Gas Emissions in Indonesia
10:30 – 10:45	Coffee break
10:45 – 11:15	Presentation on Technical Process of HCV Screening Workshop
11:15 – 12:00	Introduction to HCV Concepts 1-3
12:00 – 13:00	Lunch and Prayer Break
13:00 – 14:15	Introduction to HCV Concepts 4-6
14:15 – 15:15	Group Work: Identifying HCV in Morowali District
15:15 – 15:30	Coffee break
15:30 – 16:30	Introduction to HCV Screening
16:30 – 17:00	Scope and Data Evaluation
17:00 – finish	End of Day 1 – Recap and Preparation for Day 2
Wednesday, September 25, 2024	
09:00 – 10:00	HCV Probability Estimation (1-6)
10:00 – 12:00	Group Work: HCV Probability Estimation (1-6)
12:00 – 13:00	Lunch and Prayer Break
13:00 – 14:30	Threat Attribute
14:30 – 15:30	Group Work: Determining Threat Attributes
15:30 – 16:30	Presentation and Discussion of Group Work Results
16:30 – 17:00	Next Steps in Project Implementation
17:00 – finish	End of Day 2

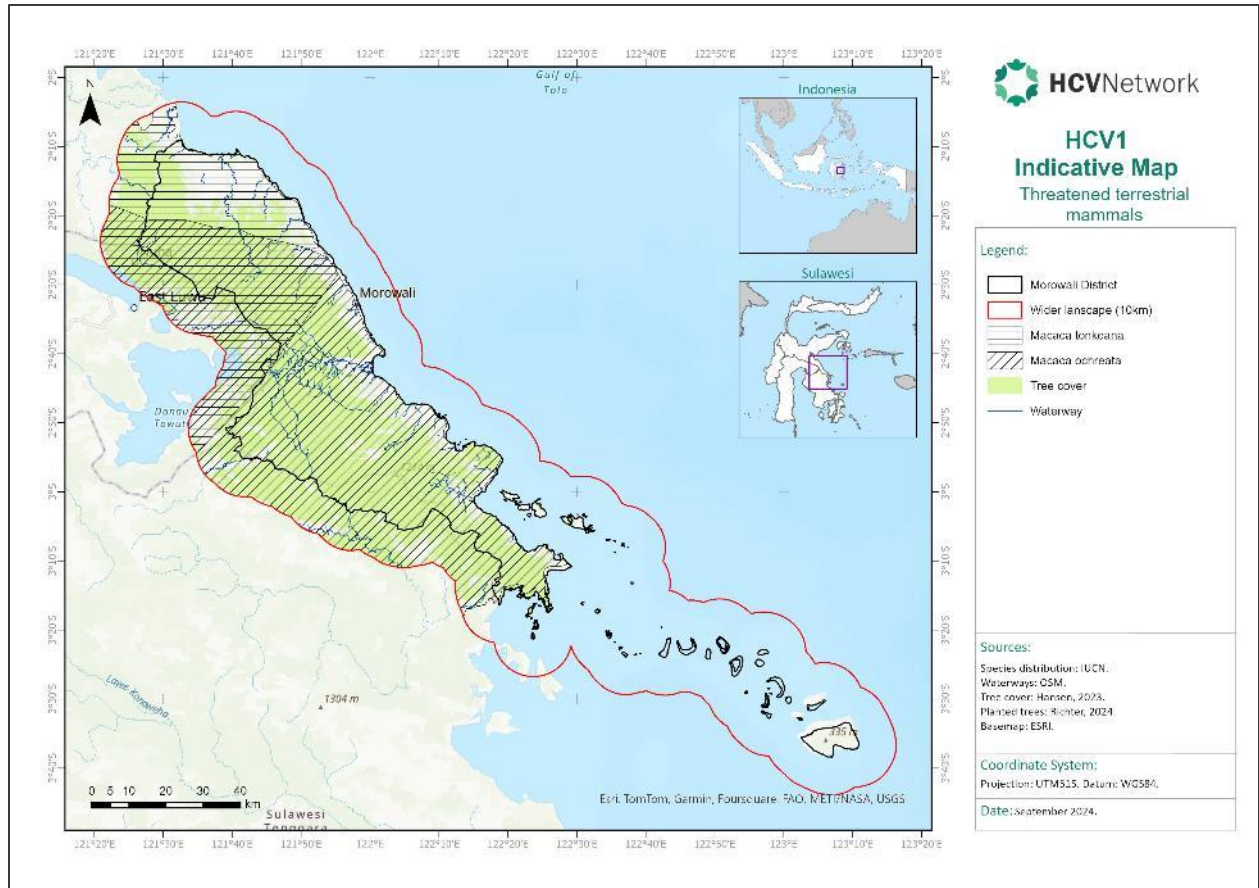
Annex 4: HCV Indicative Maps

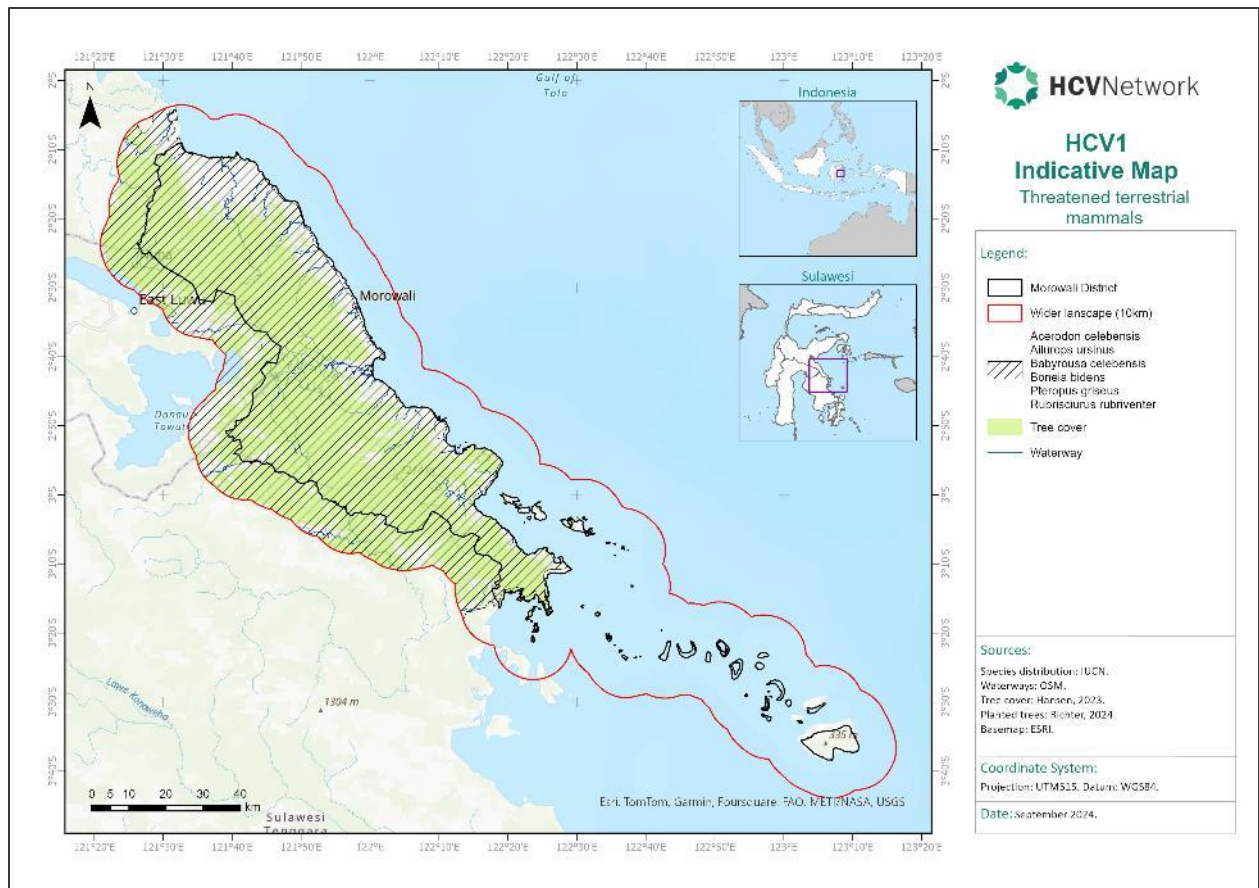
HCV I: Species Diversity

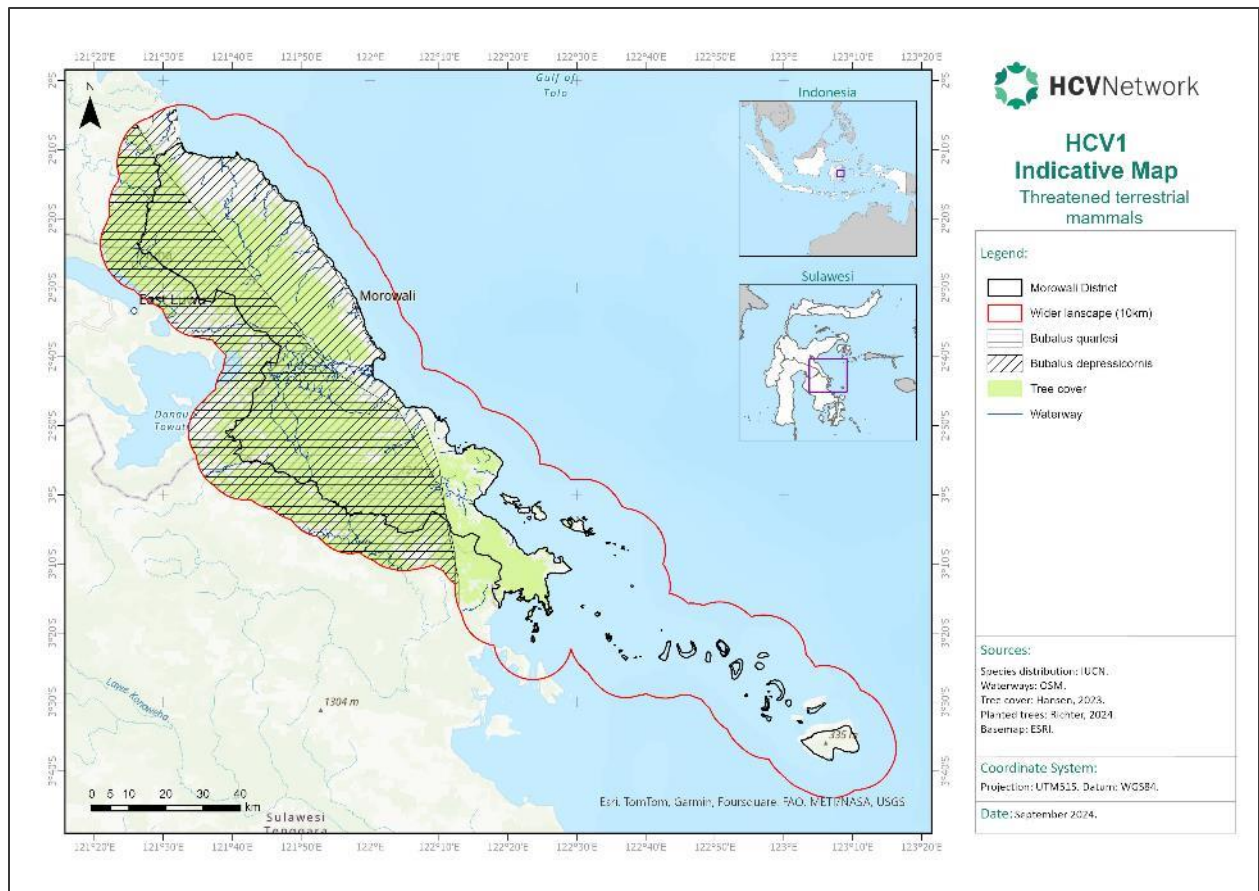


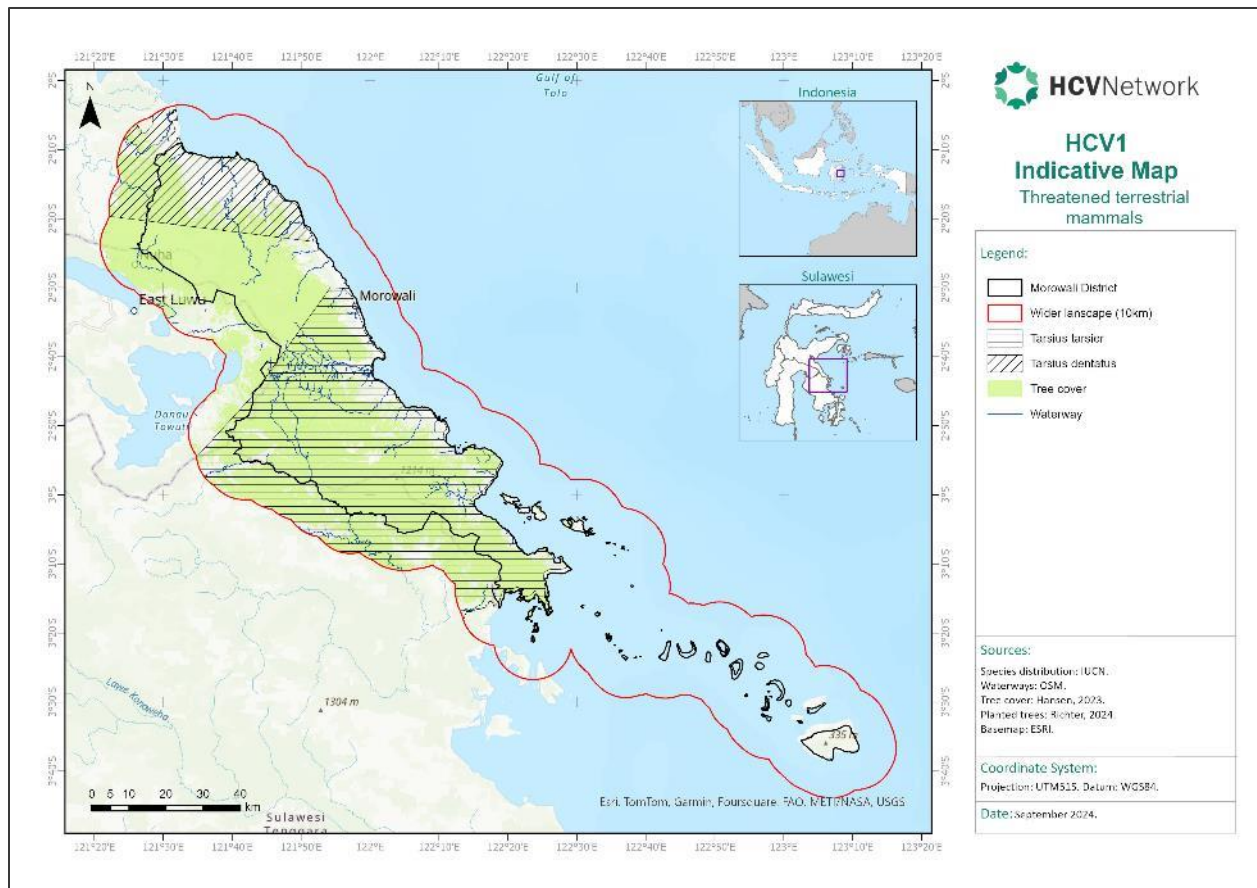






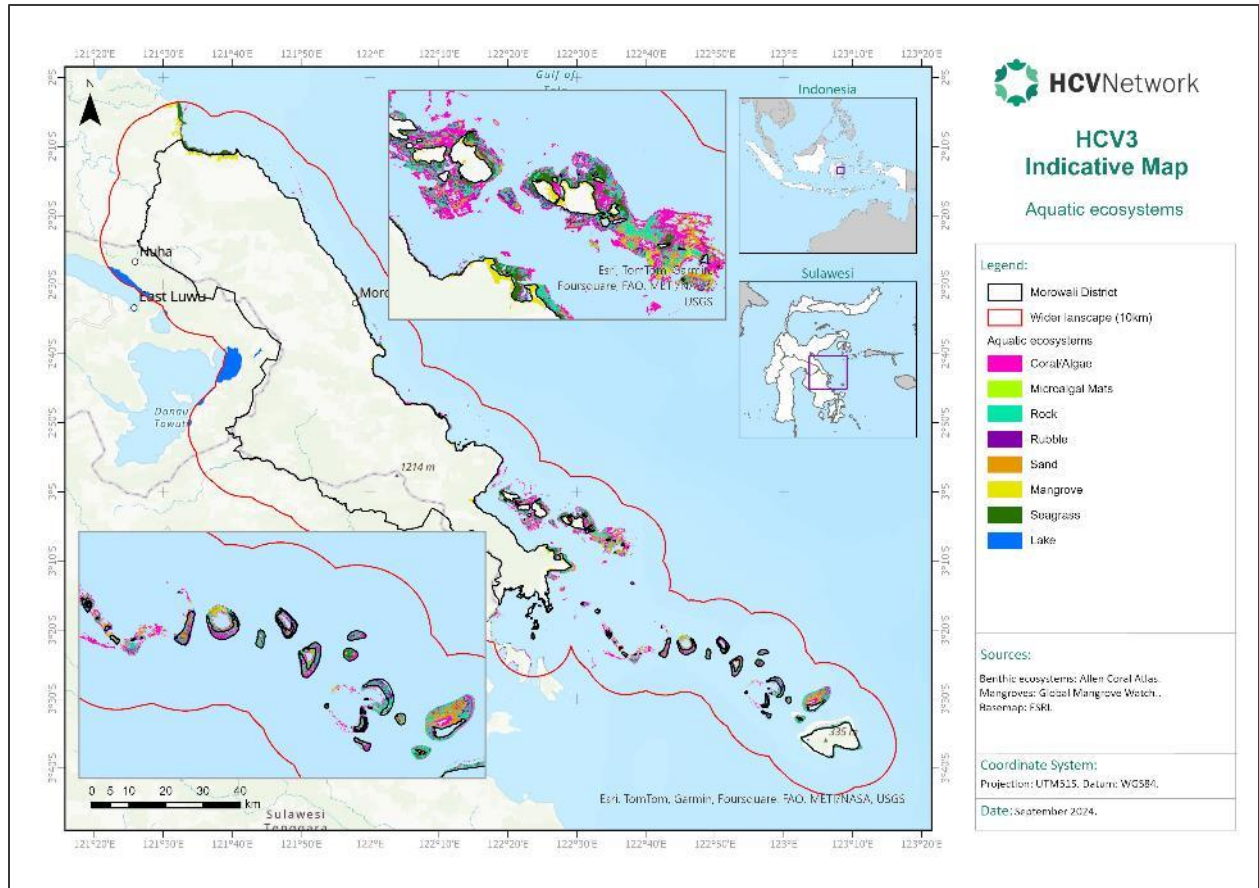


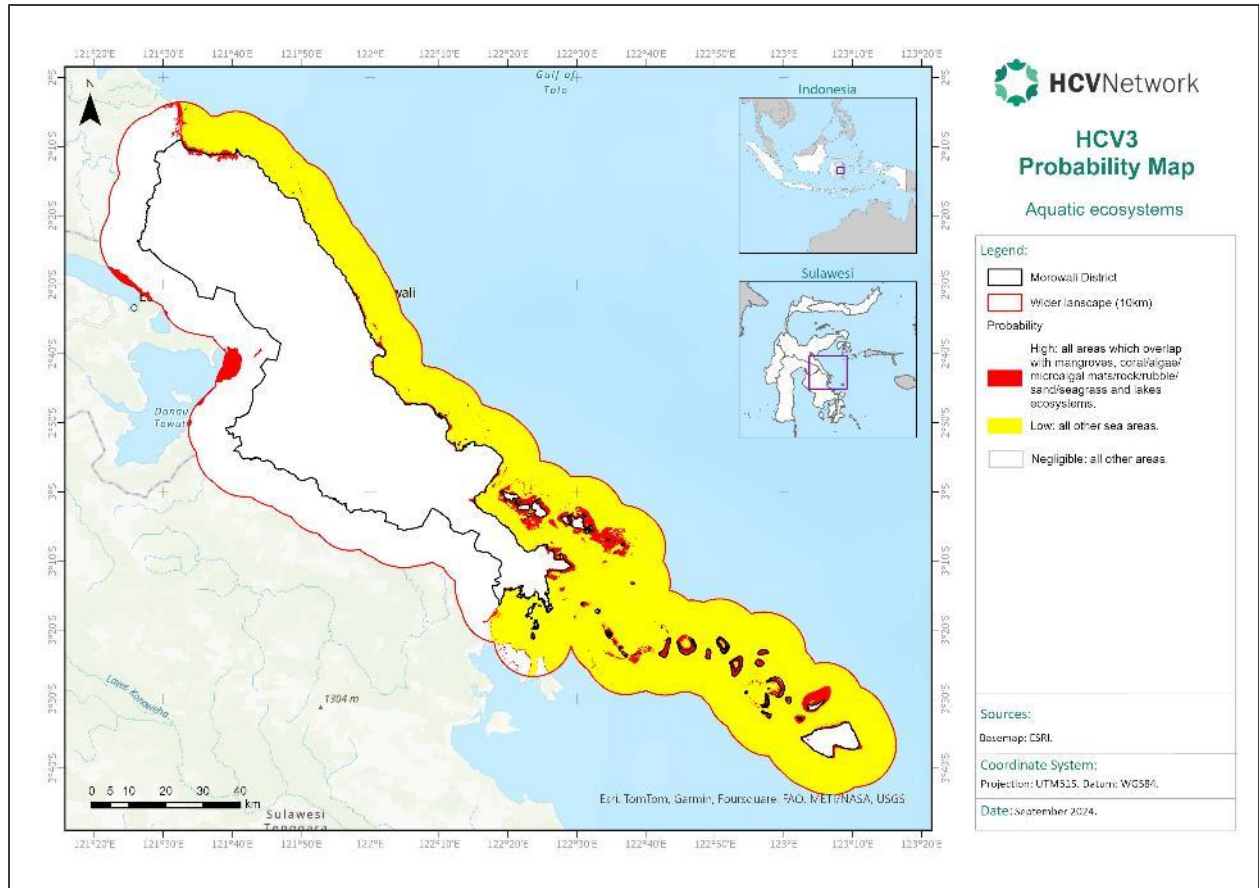


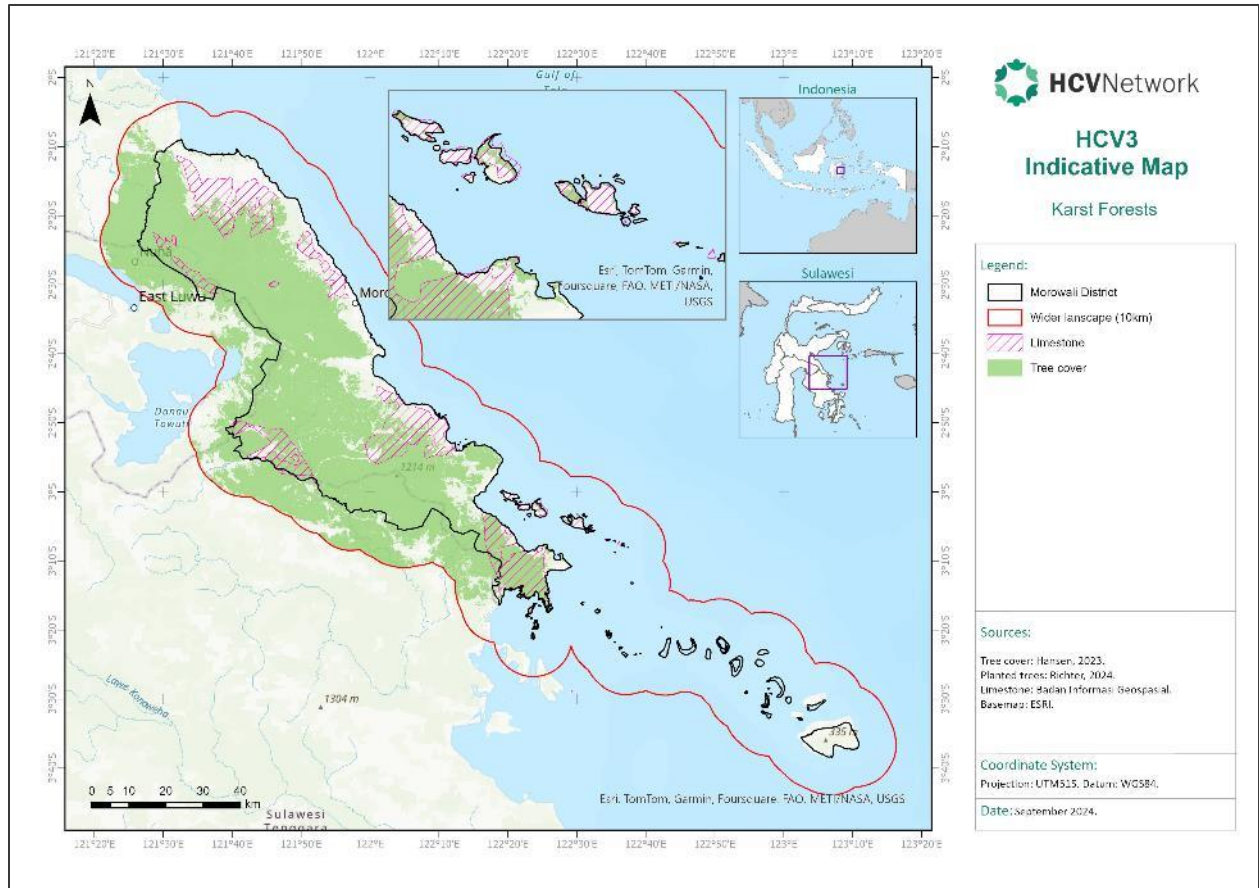


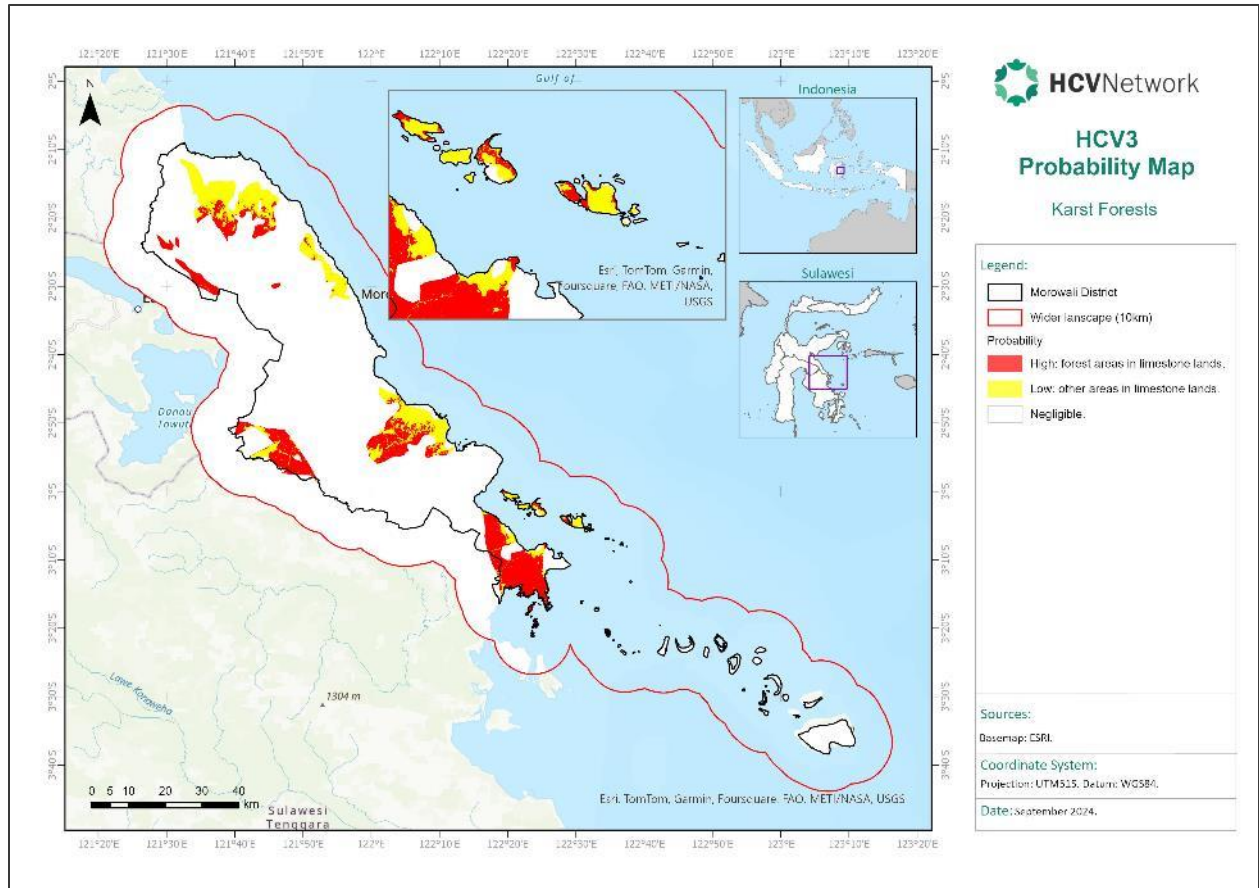
HCV 3: Naturally Rare Ecosystems

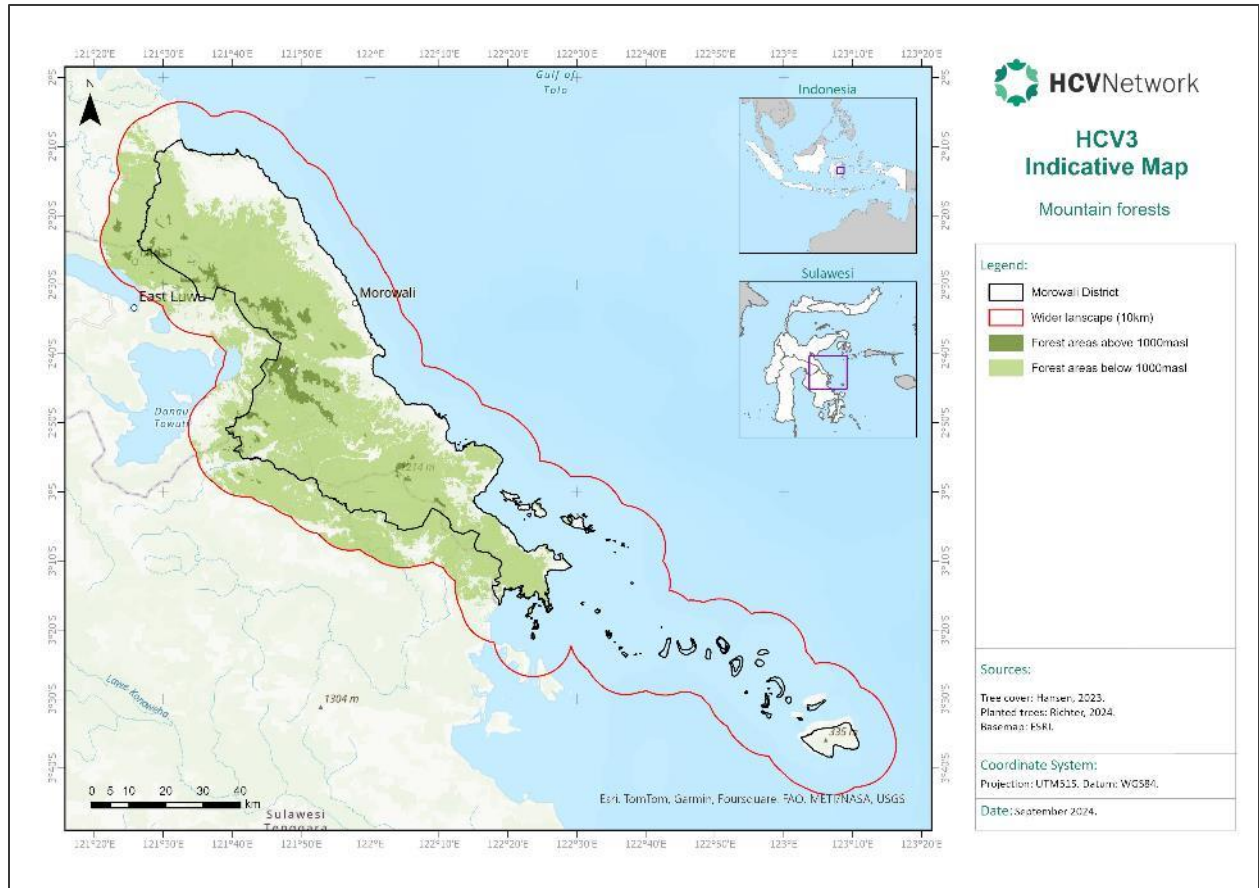
HCV Category	HCV Subcategory Definition	HCV Attribute or Group	Data used for Analysis	Data Threshold Applied for High Indication	Data Threshold Applied for Low Indication	Data Threshold Applied for Negligible Indication	Trustworthy Reference / stakeholder/s
HCV 3 Rare, threatened, or endangered ecosystems, habitats or refugia.	Naturally rare Ecosystems	Aquatic ecosystem	Mangroves	All areas which overlap with those ecosystems.	All other sea areas.	All other areas.	Global Mangrove Watch.
			Coral/Algae				Allen Coral Atlas.
			Microalgal Mats				
			Rock				
			Rubble				
			Sand				
	Seagrass						
	Lakes						
	Karst forests	Tree cover	Forest areas in limestone lands.	Other areas in limestone lands.	All other areas.	Hansen (tree cover); WRI (planted trees). Badan Informasi Geospasial.	
		Limestone lands					
Mountain forest	Tree cover	Forest areas above 1000 masl.	Forest areas below 1000 masl.	All other areas.	Hansen (tree cover); WRI (planted trees). Badan Informasi Geospasial.		
	Elevation						
Lowland forest	Tree cover	Forest areas below 500 masl.	Forest areas above 500 masl.	All other areas.	Hansen (tree cover); WRI (planted trees). Badan Informasi Geospasial.		
	Elevation						
Ecosystems that were once widespread but have become rare due to anthropogenic impacts	Peatlands and swamps	Tree cover	Forest areas in peatlands and swamps.	Other landcovers in peatlands and swamps.	All other areas.	Hansen (tree cover); WRI (planted trees).	
		Peatland				UNEP - Global Peatlands Initiative. GFW.	
		Swamps				Land System (Badan Informasi Geospasial).	

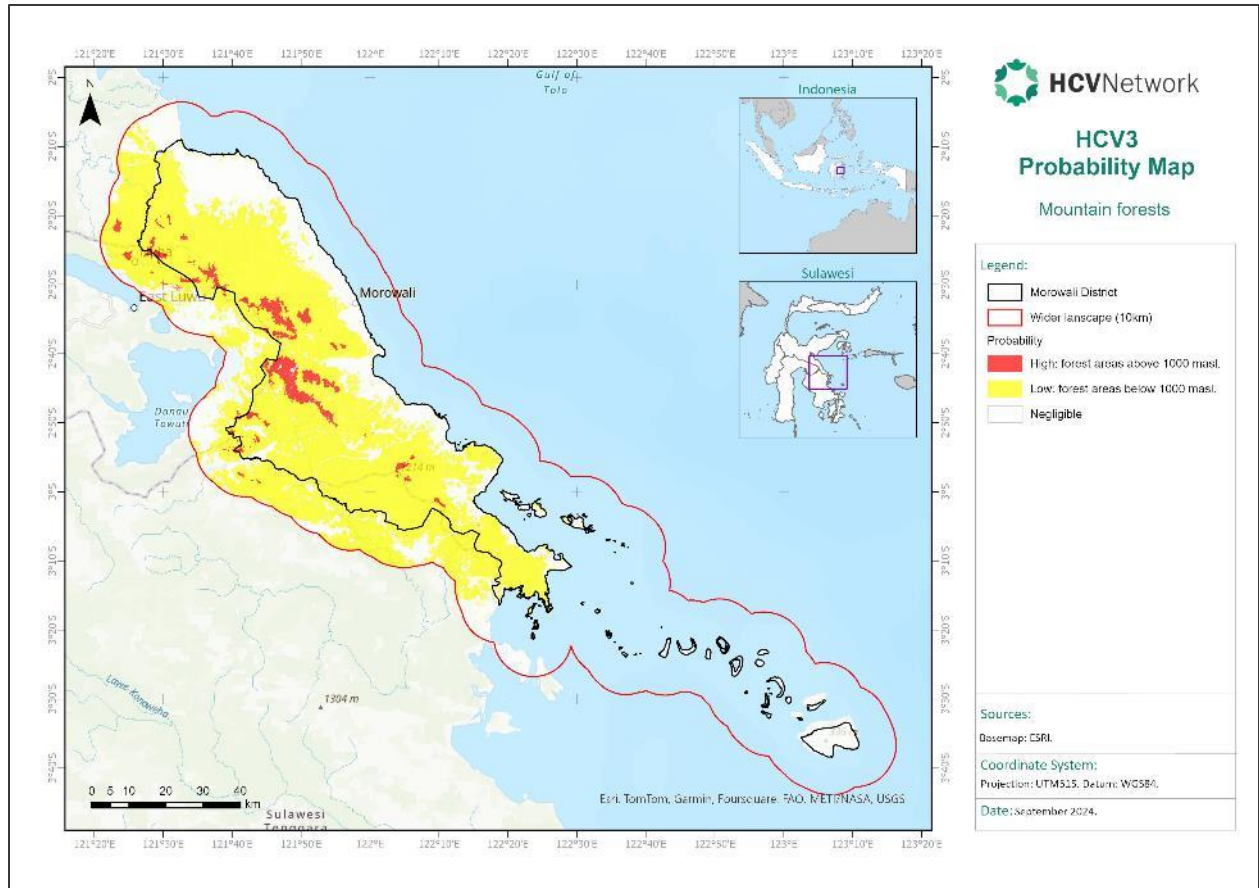




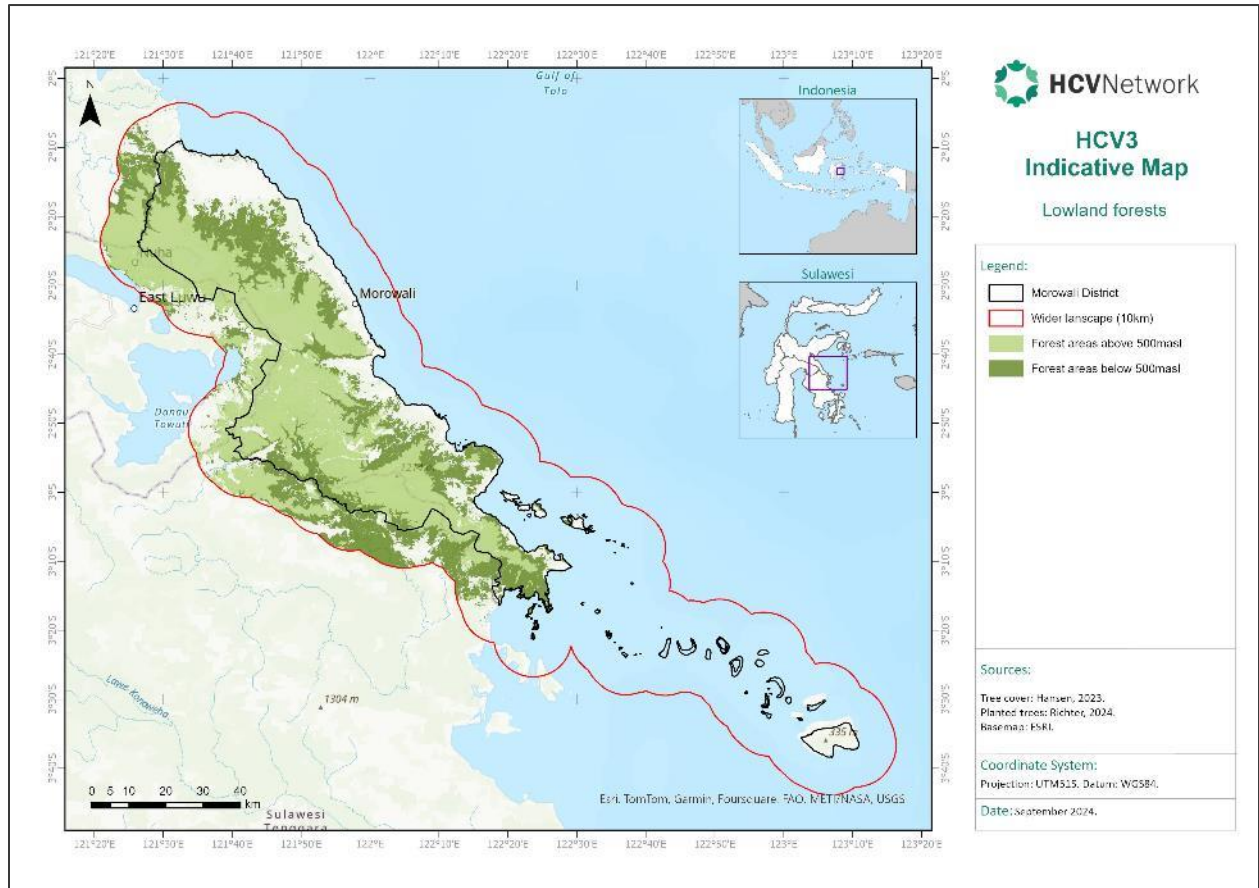


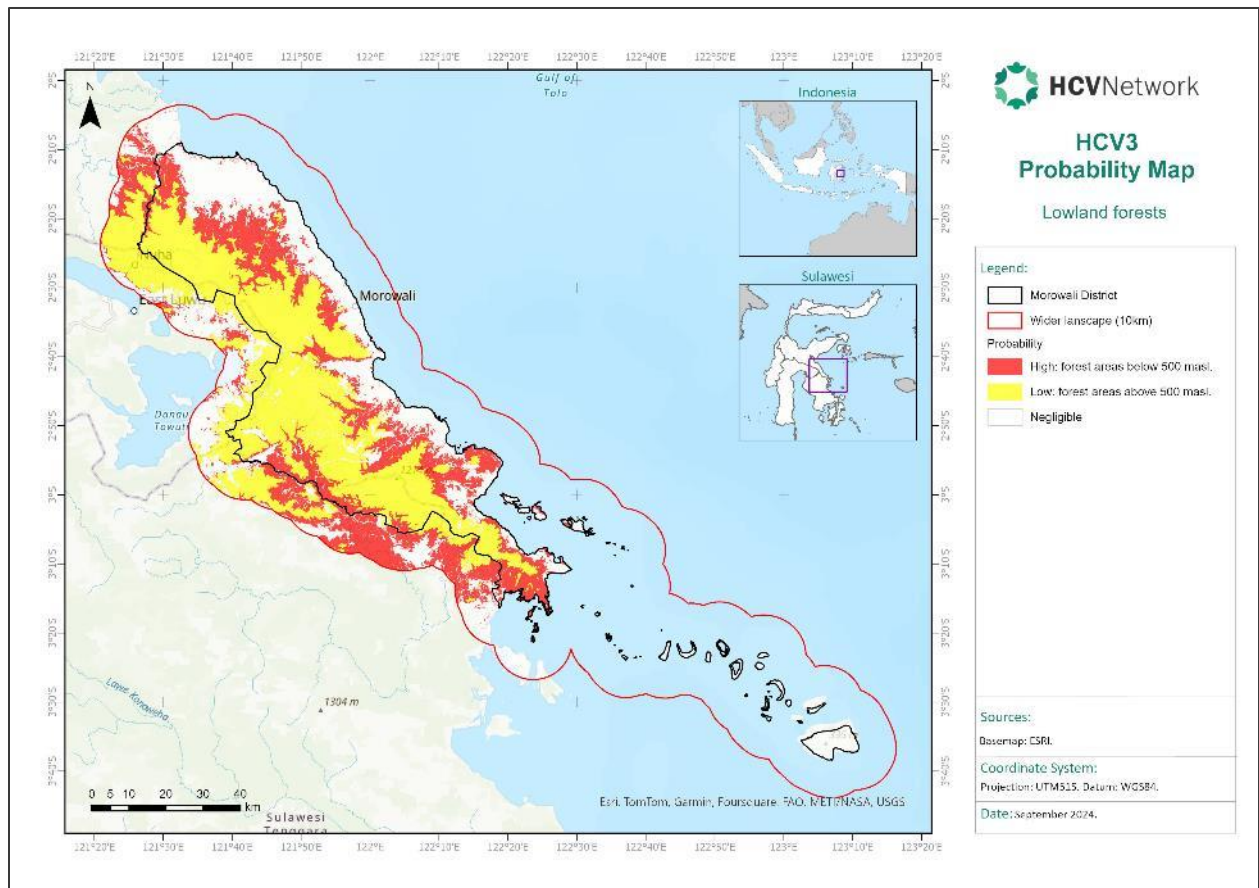


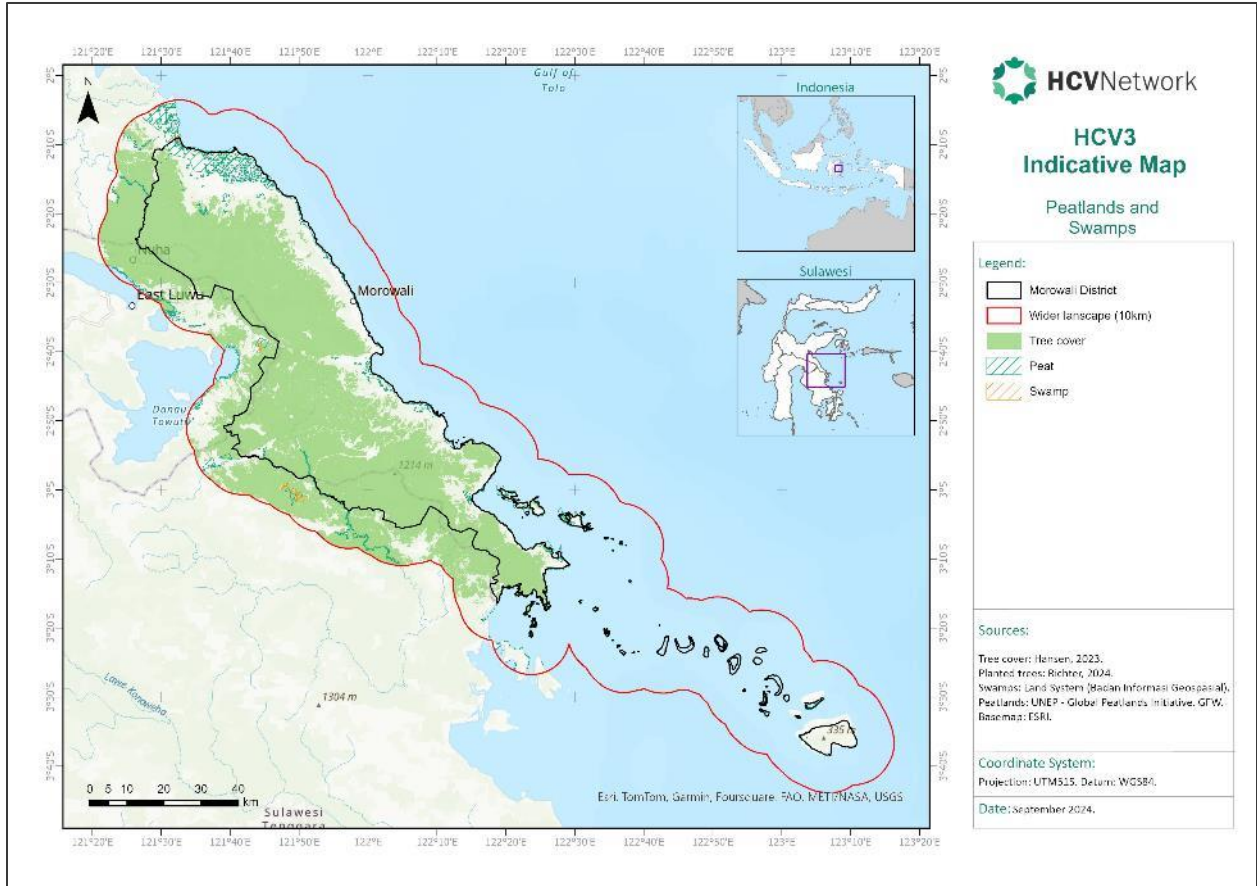


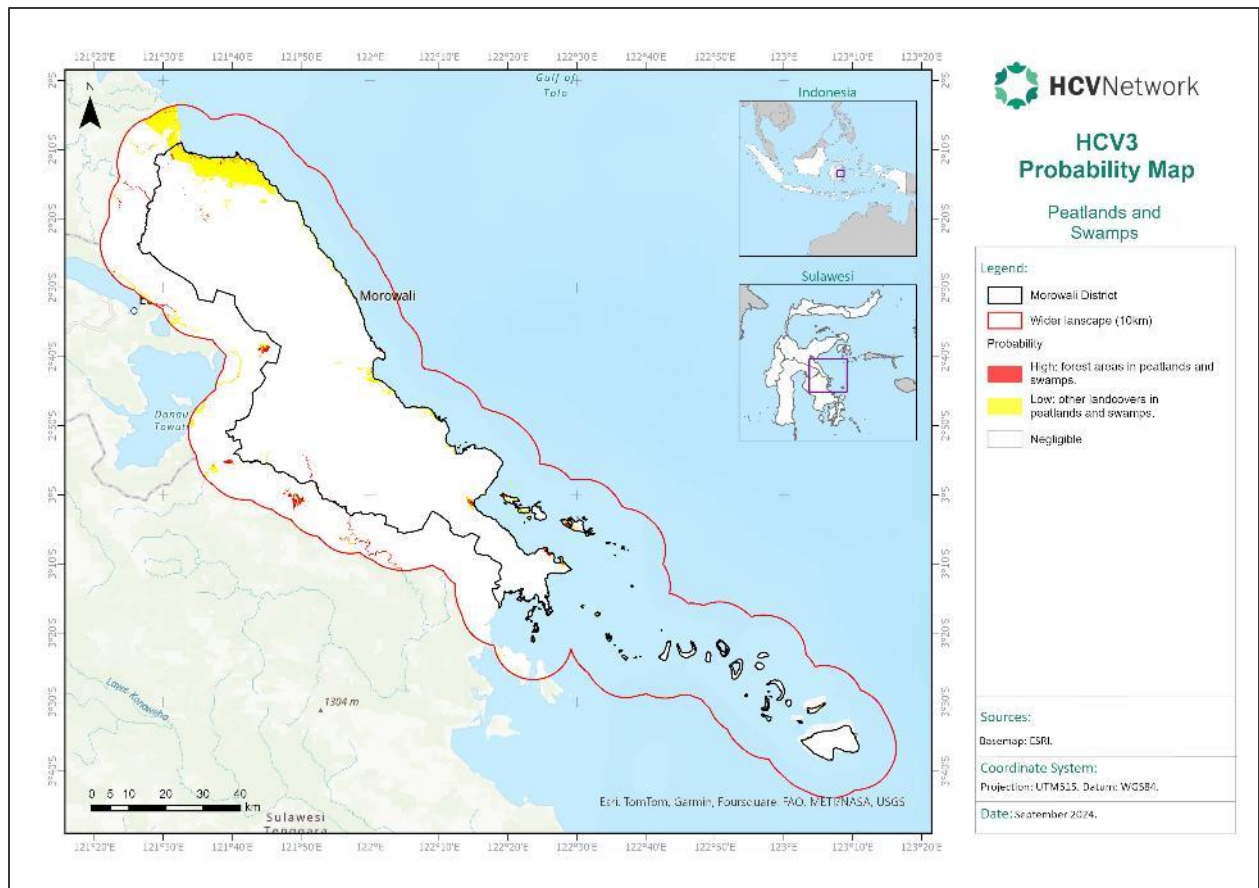


HCV 3: Rare Ecosystems Due to Anthropogenic Impacts



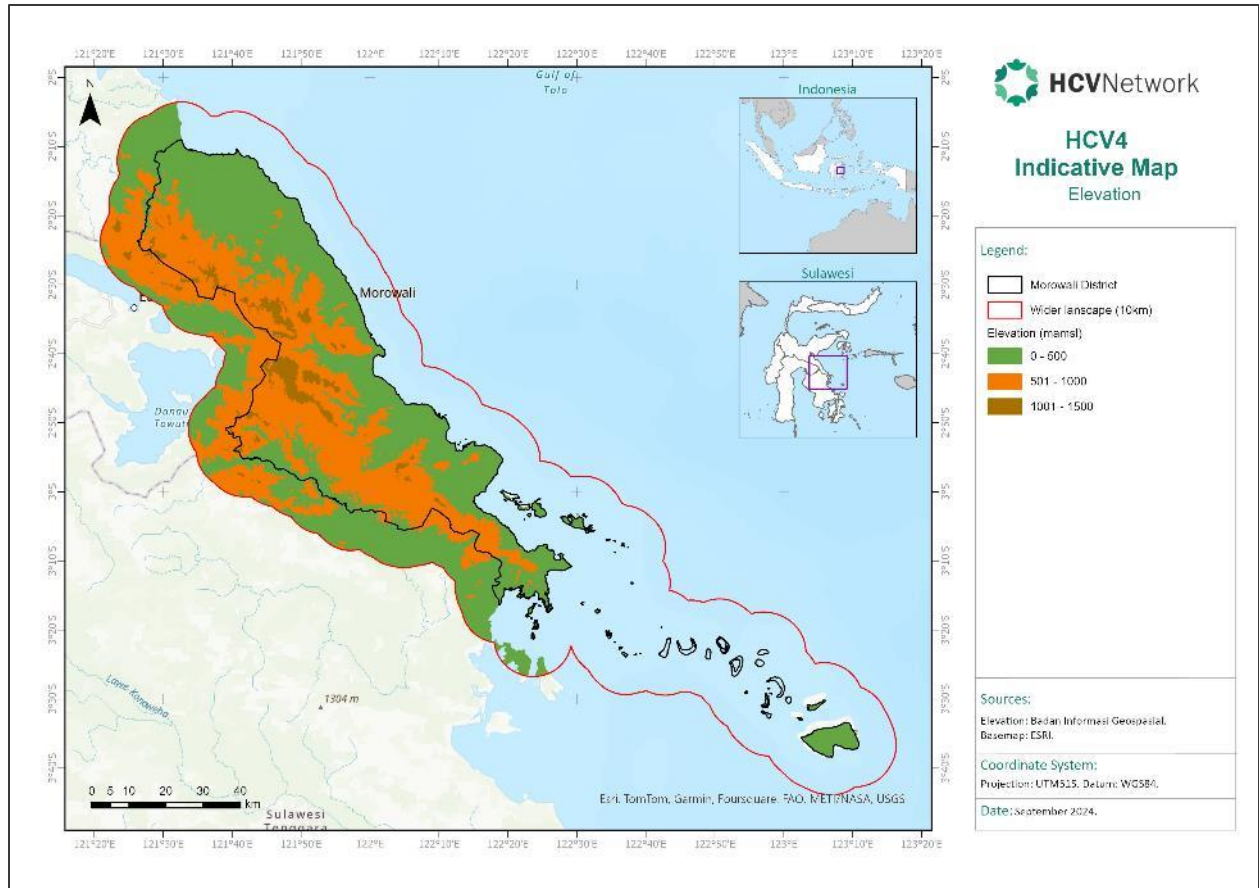


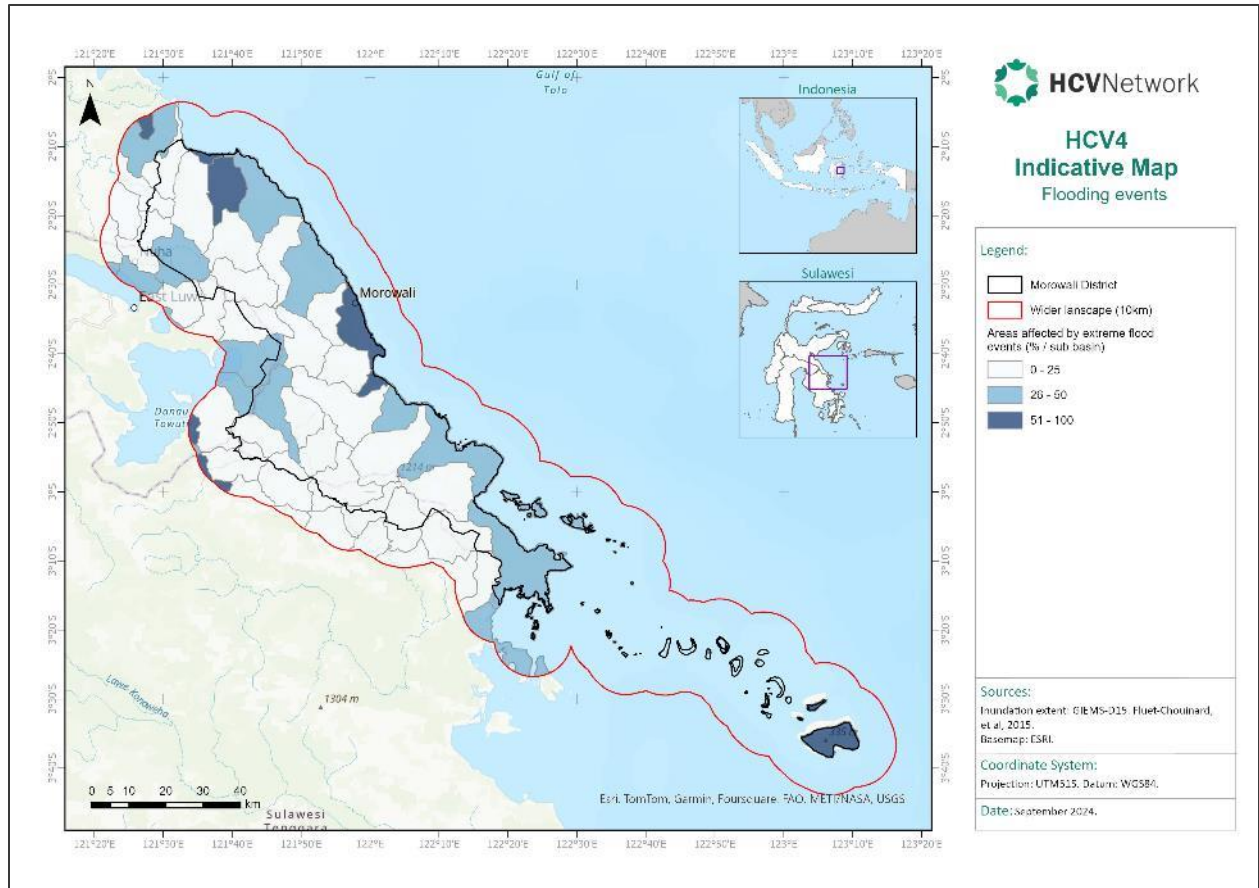


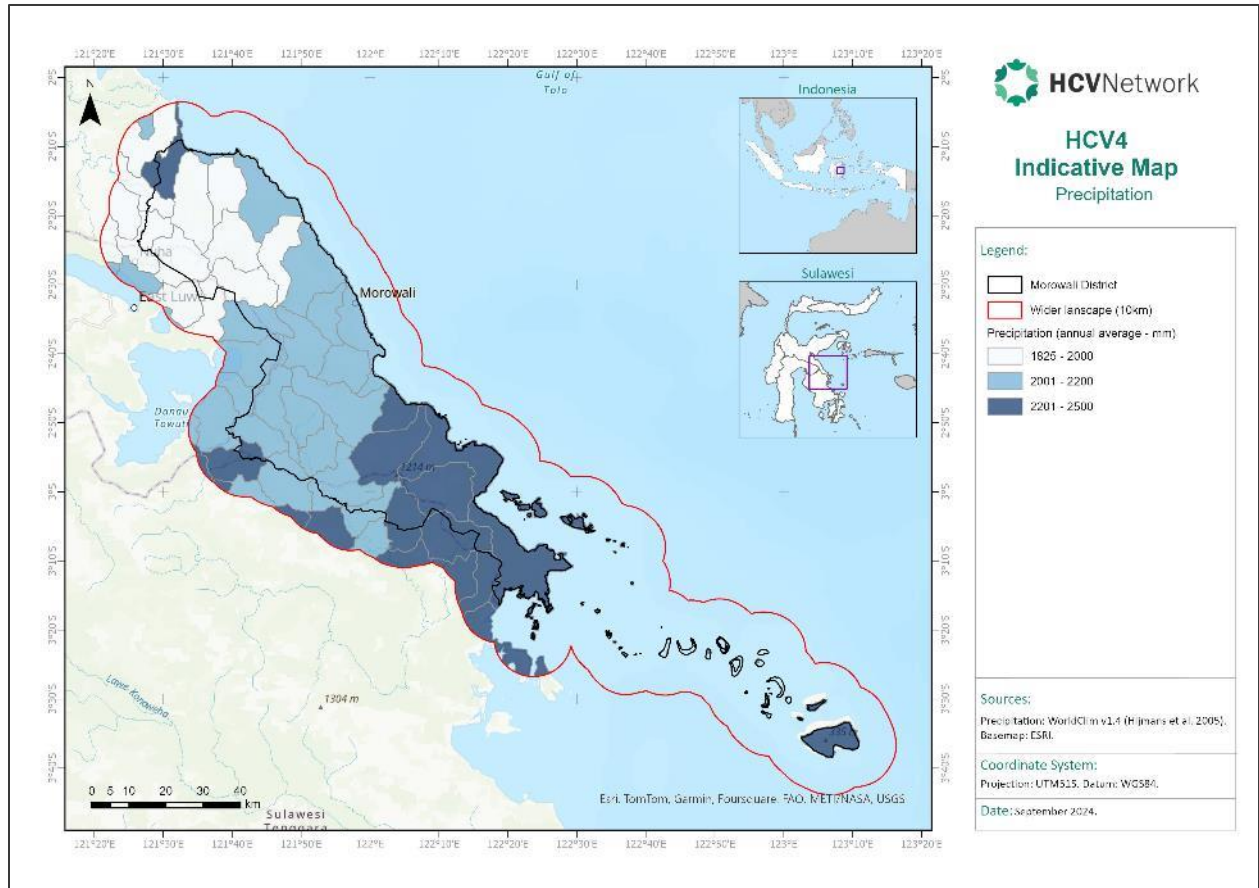


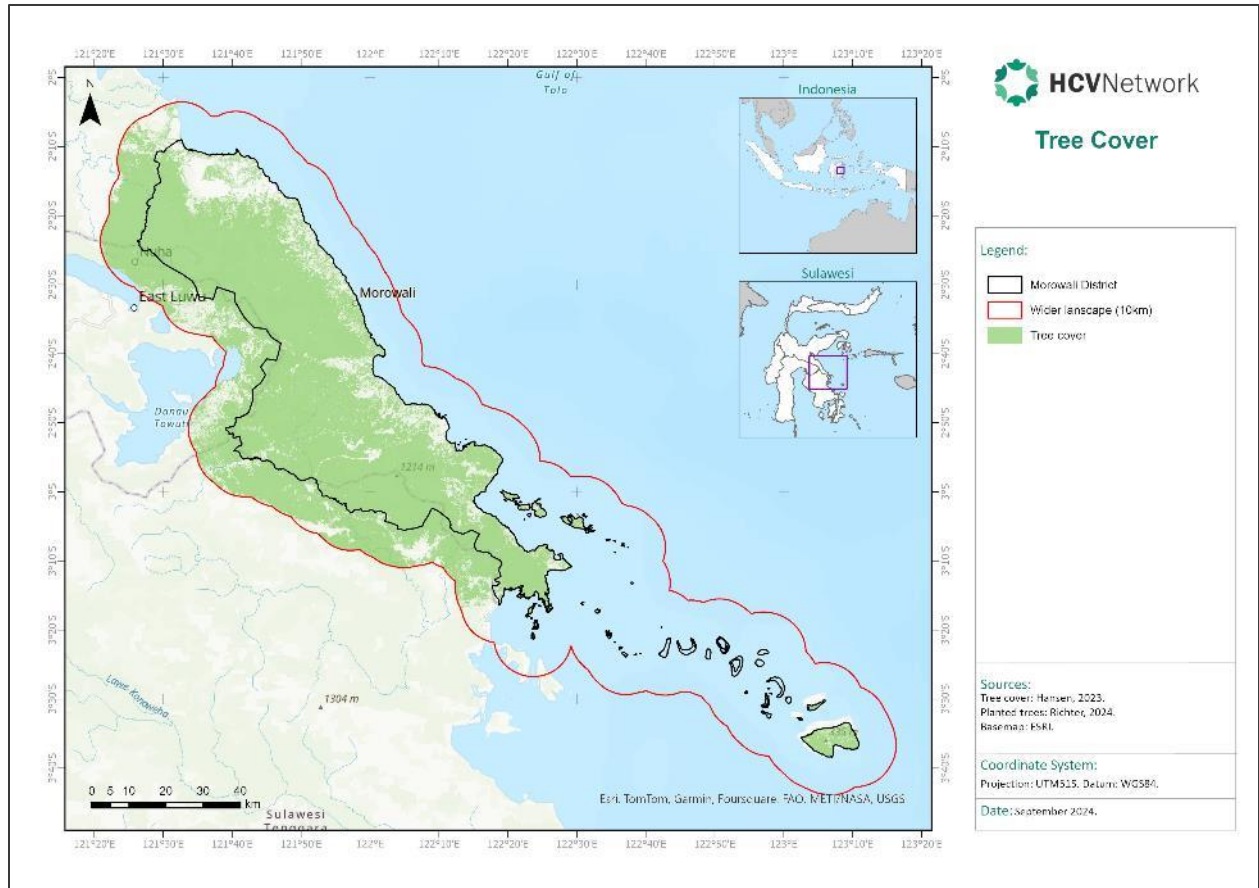
HCV4: Protection Against Flood

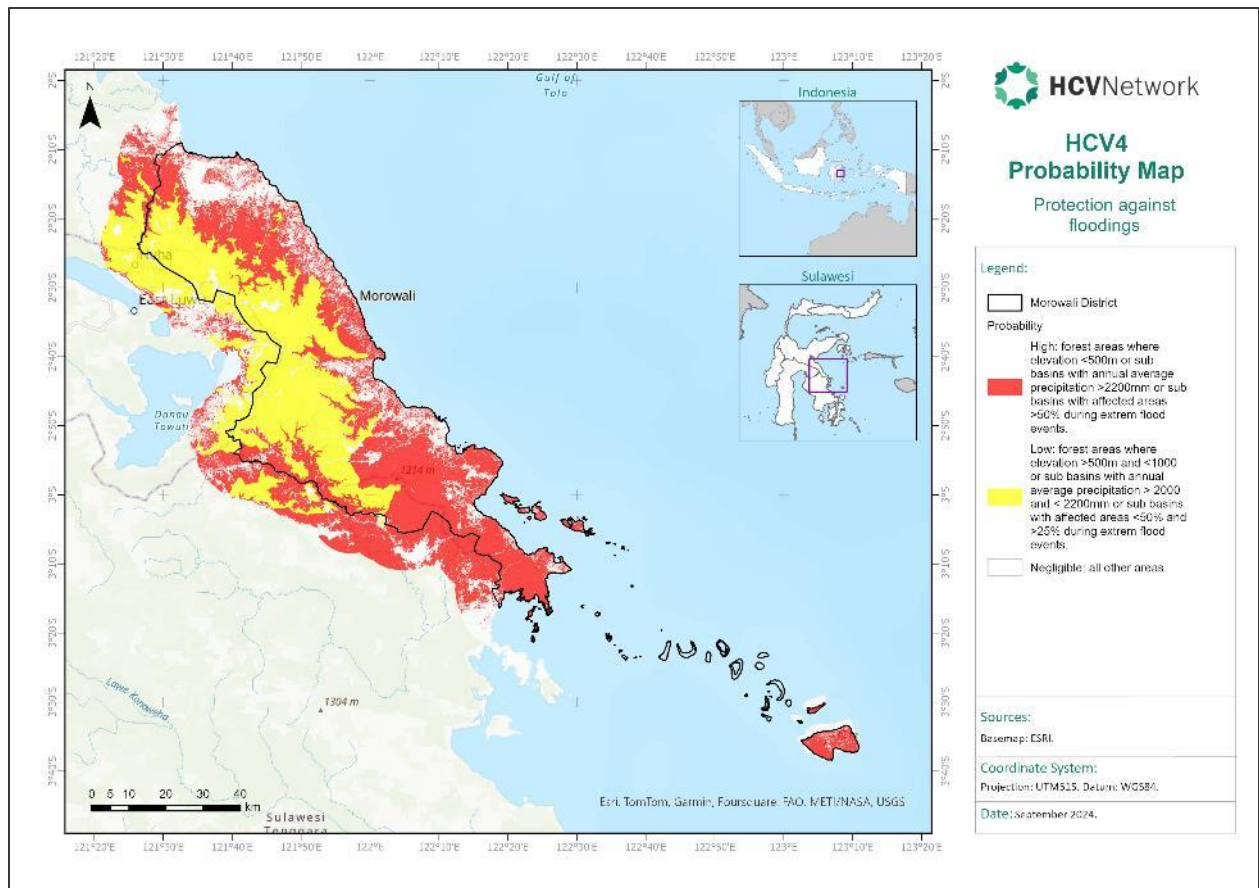
HCV Category	HCV Subcategory Definition	HCV Attribute or Group	Data used for Analysis	Data Threshold Applied for High Indication	Data Threshold Applied for Low Indication	Data Threshold Applied for Negligible Indication	Trustworthy Reference / stakeholder/s
HCV 4 – Basic ecosystem services in critical situations including protection of water catchments and control of erosion of vulnerable soils and slopes.	Regulation of hydrology	Floodings	Elevation	Forest areas where elevation <500m or sub basins with annual average precipitation >2200mm or sub basins with affected areas >50% during extrem flood events.	Forest areas where elevation >500m and <1000 or sub basins with annual average precipitation > 2000 and < 2200mm or sub basins with affected areas <50% and >25% during extrem flood events.	All other areas.	Badan Informasi Geospasial. WorldClim v1.4 (Hijmans et al. 2005). GIEMS-D15. Fluet-Chouinard, et al, 2015. Hansen (tree cover); WRI (planted trees).
			Precipitation				
			Extreme flooding events				
	Riparian areas	Forest cover	Forest areas within riparian areas (50m each side of rivers).	Non forest areas within riparian areas (50m each side of rivers).	All other areas.	Hansen (tree cover); WRI (planted trees). OSM.	
		Rivers					
	Coastal areas	Mangroves	Mangroves or forest areas within 100m from the coast.	Forest areas within 100m and 200m from the coast.	All other areas.	Global Mangrove Watch. Hansen (tree cover); WRI (planted trees). Badan Informasi Geospasial.	
Forest cover							
Coastal line							
Regulation and control of erosion on vulnerable soils and slopes	Steep area	Slope class derived from digital elevation model (DEM)	Forest areas with slopes >45%.	Forest areas with slopes between <45% and >25% or non forest areas with slopes >45%.	All other areas.	Badan Informasi Geospasial. Hansen (tree cover); WRI (planted trees).	
		Forest cover					



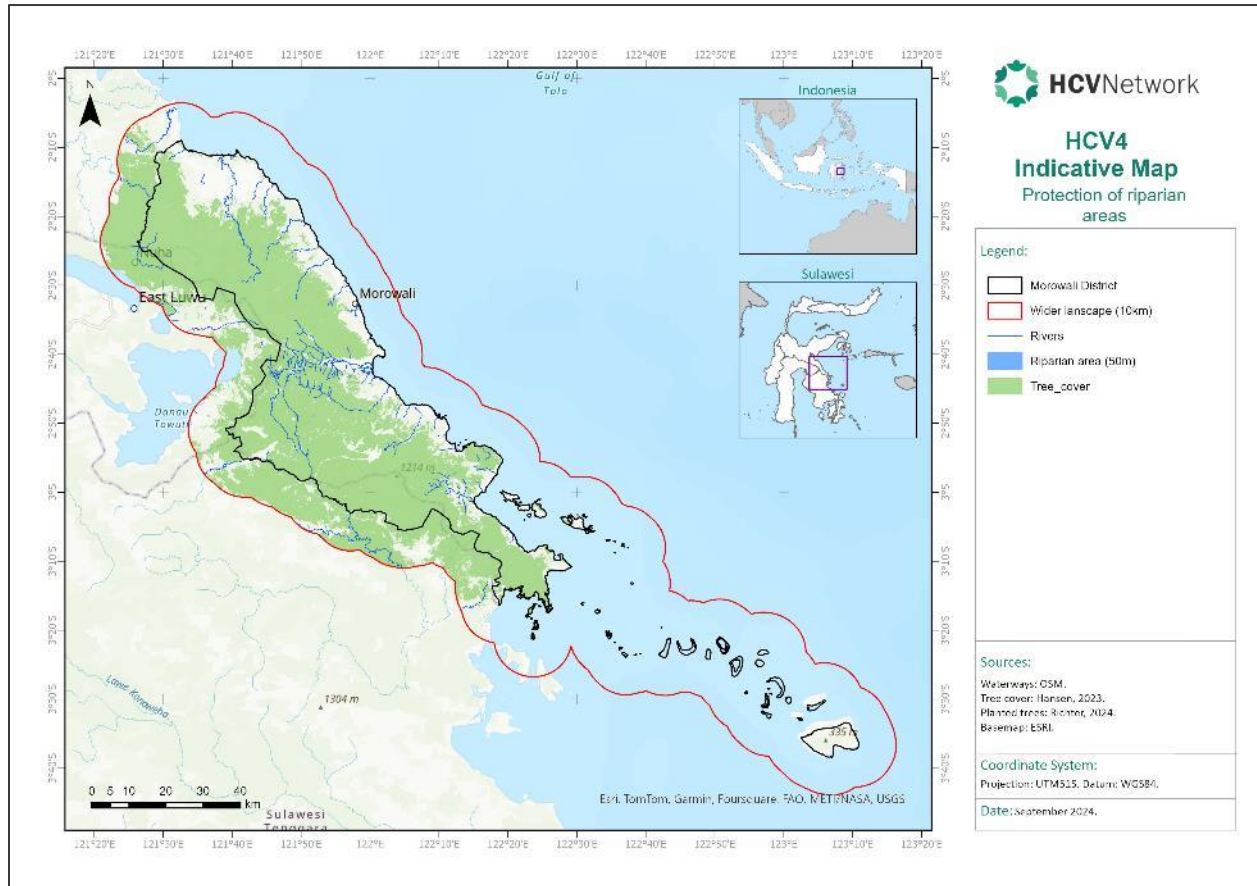


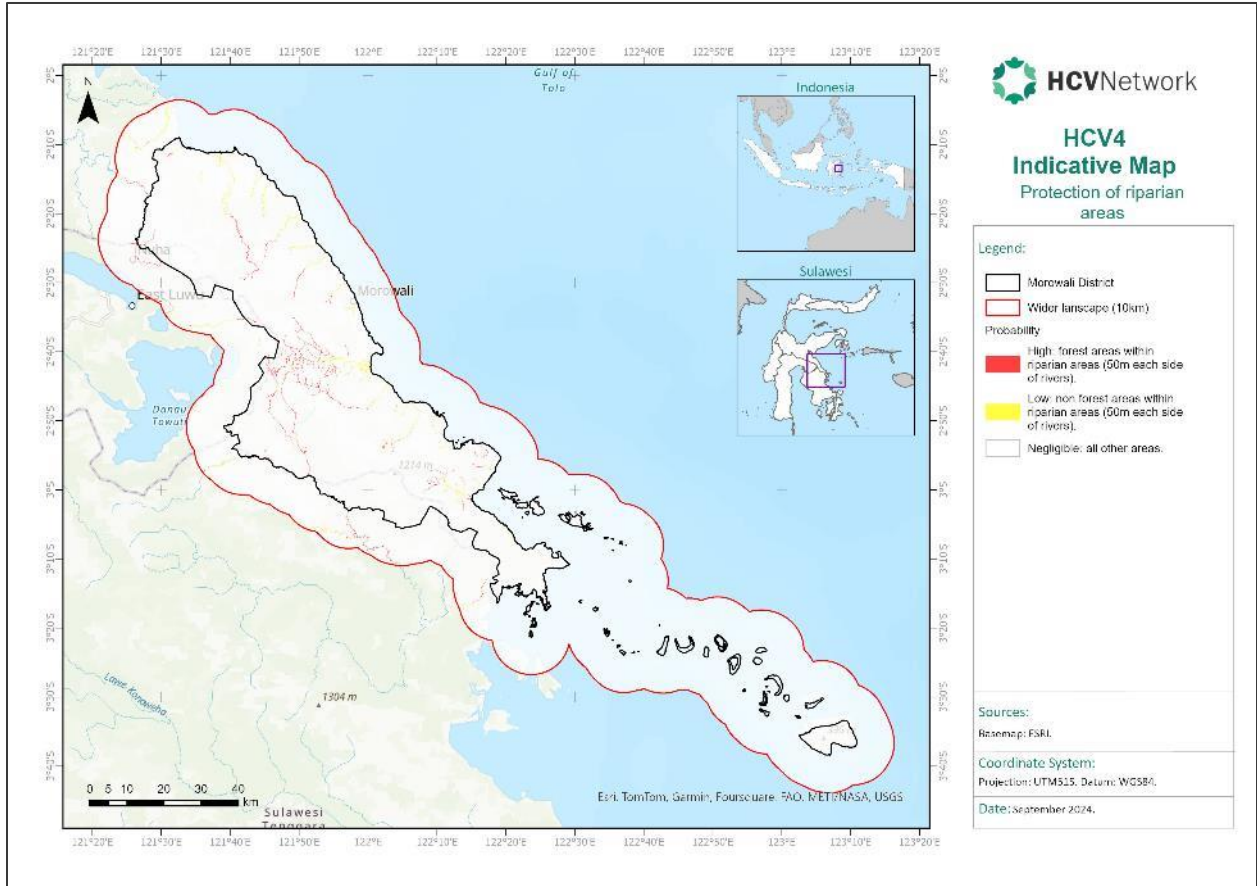




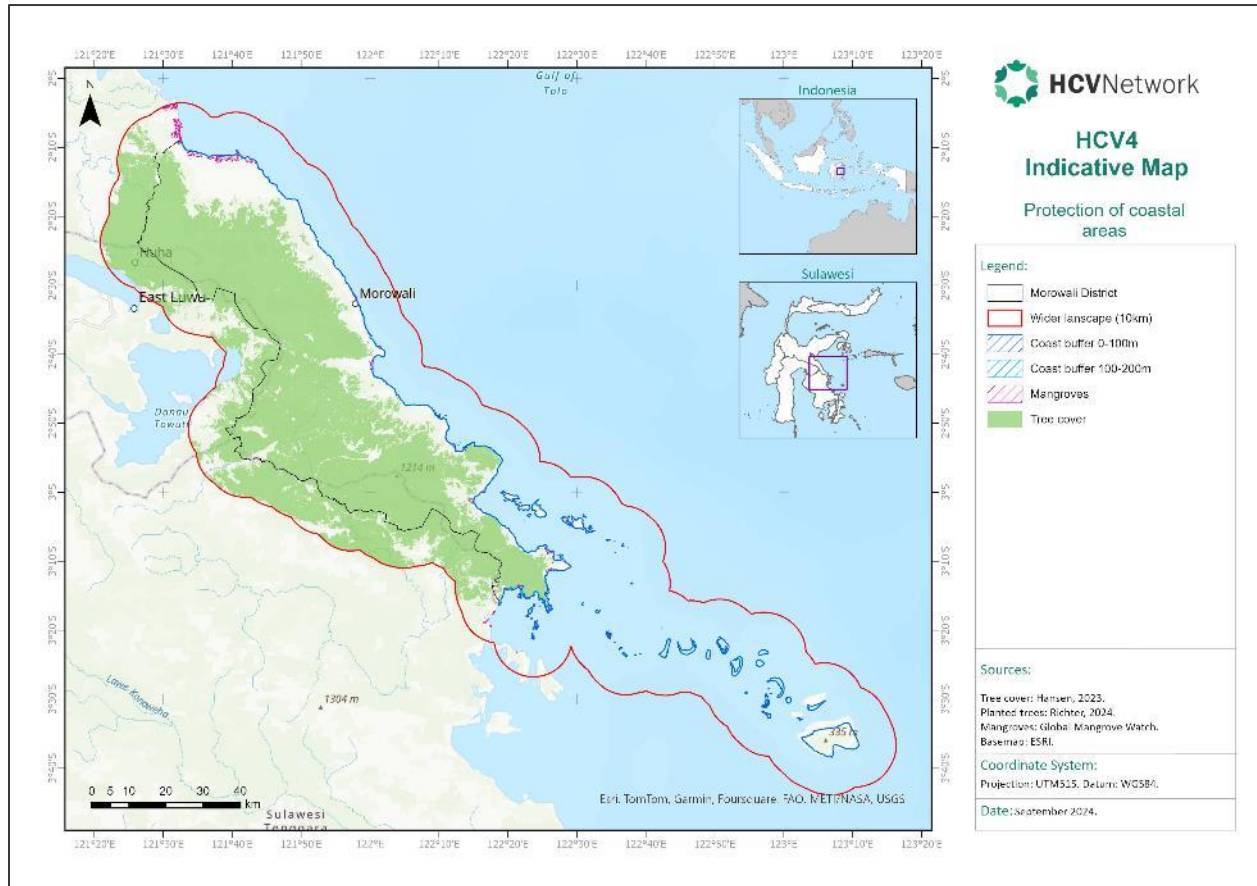


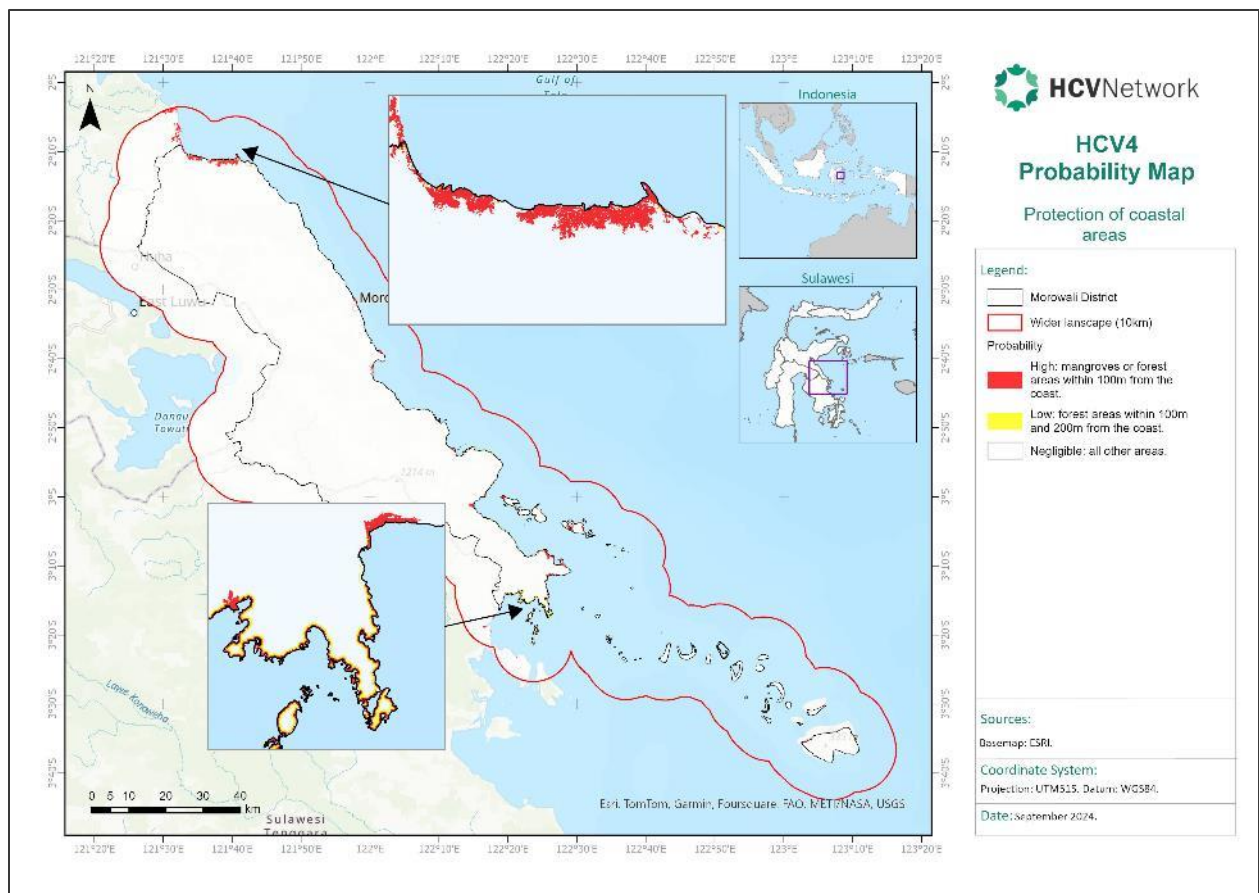
HCV4: Protection of Riparian Areas



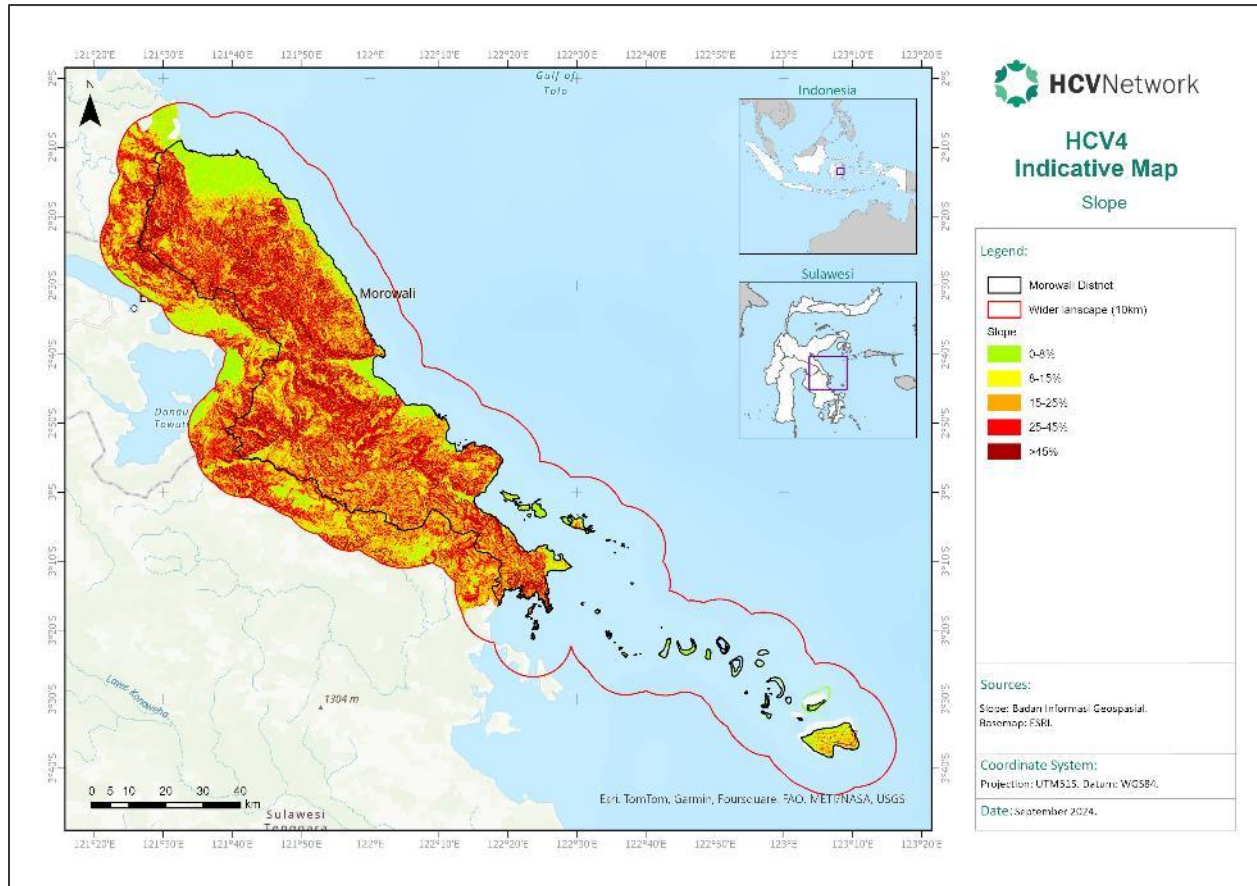


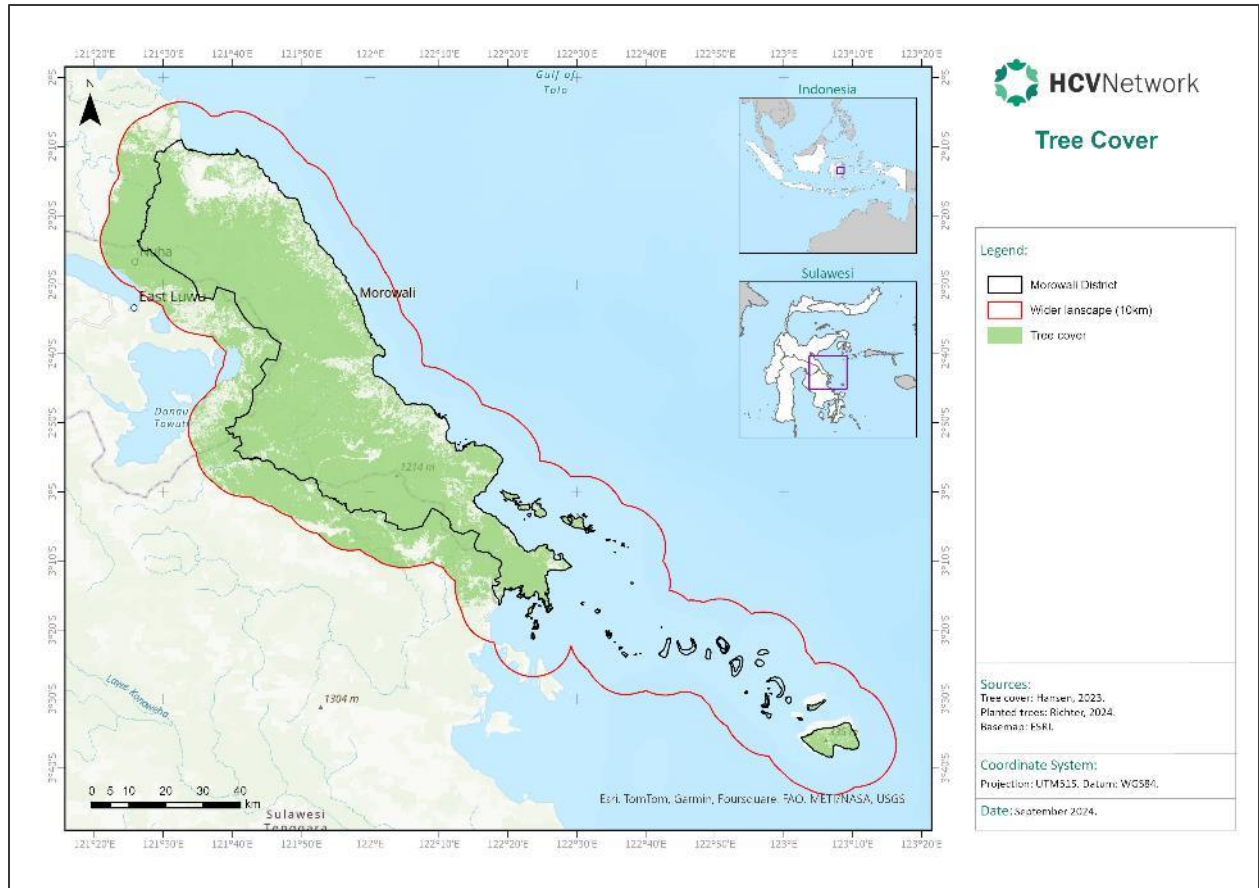
HCV4: Protection of Coral Areas

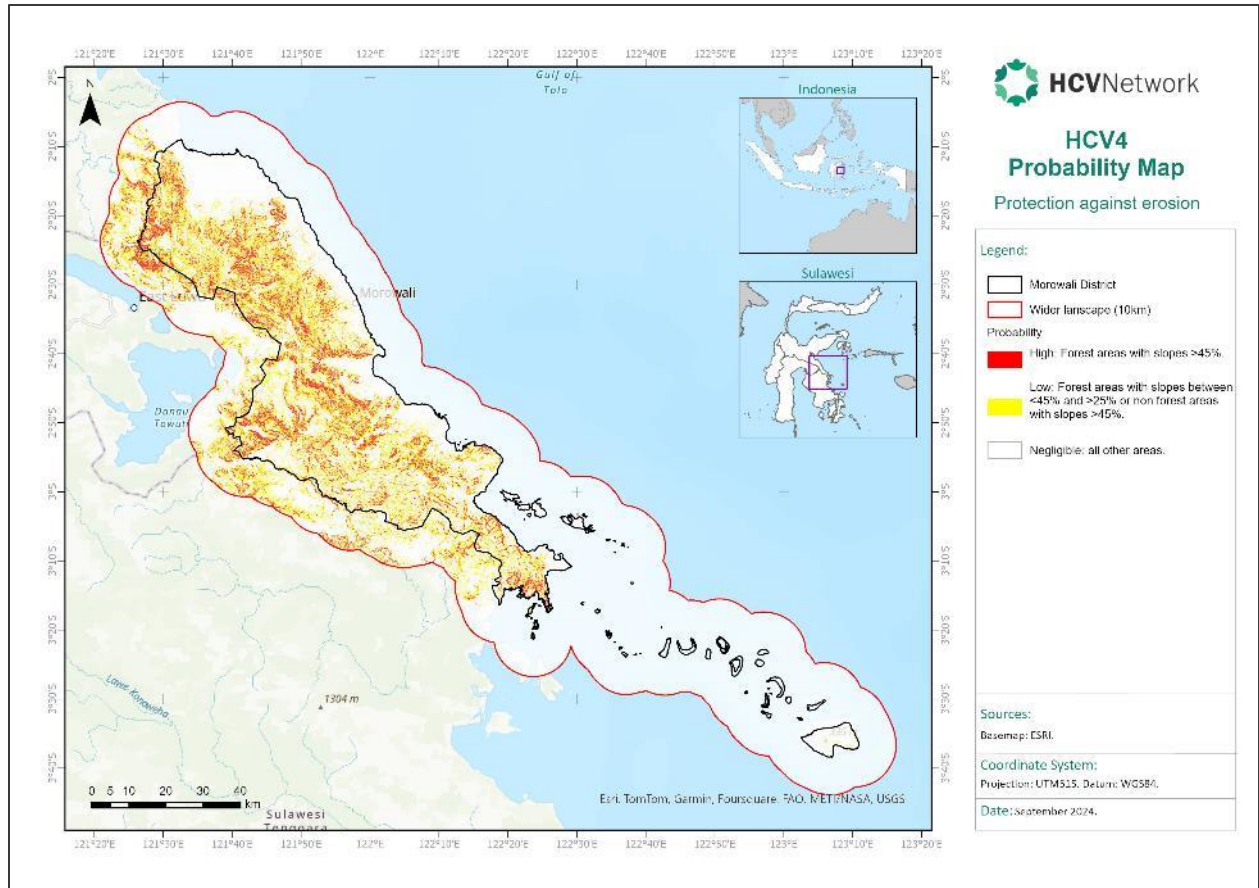




HCV4: Protection Against Erosion

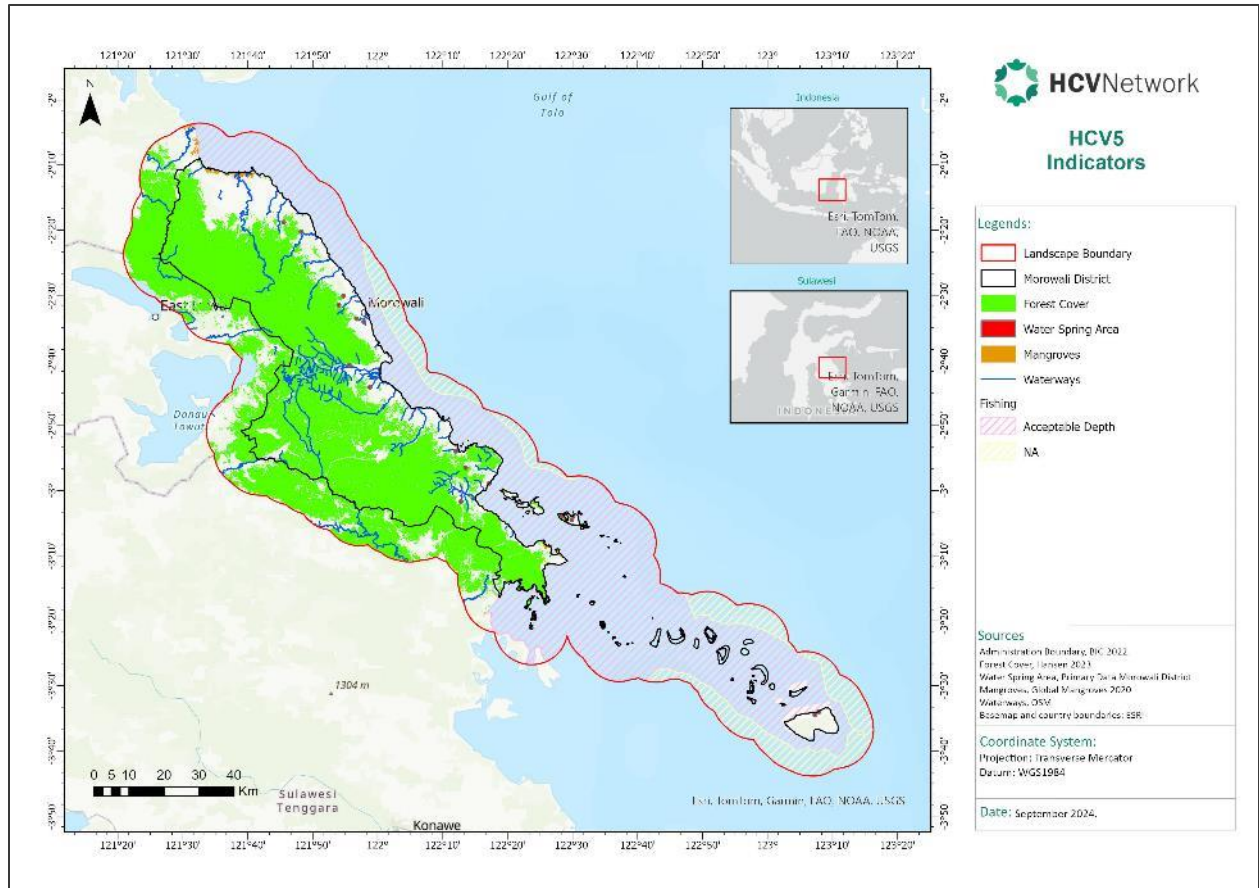


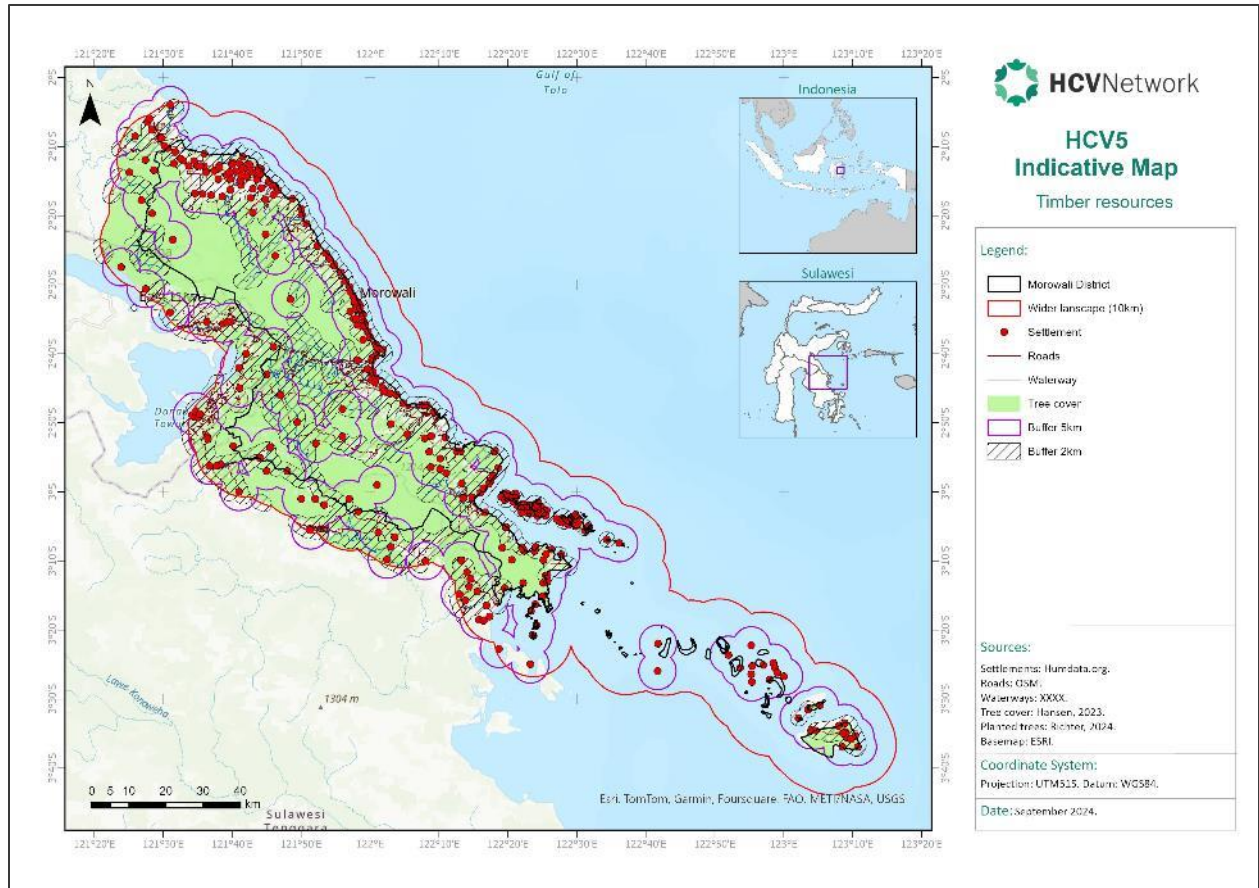


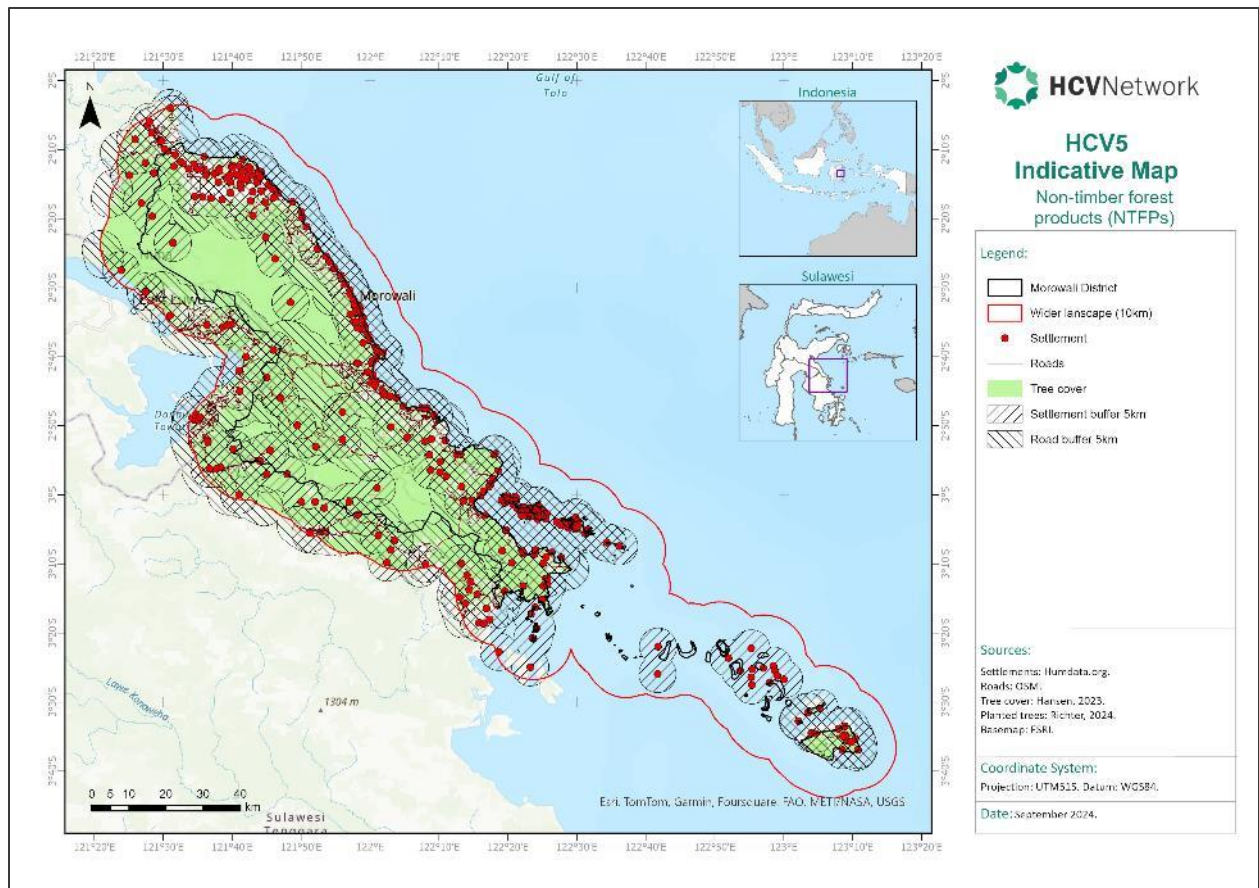


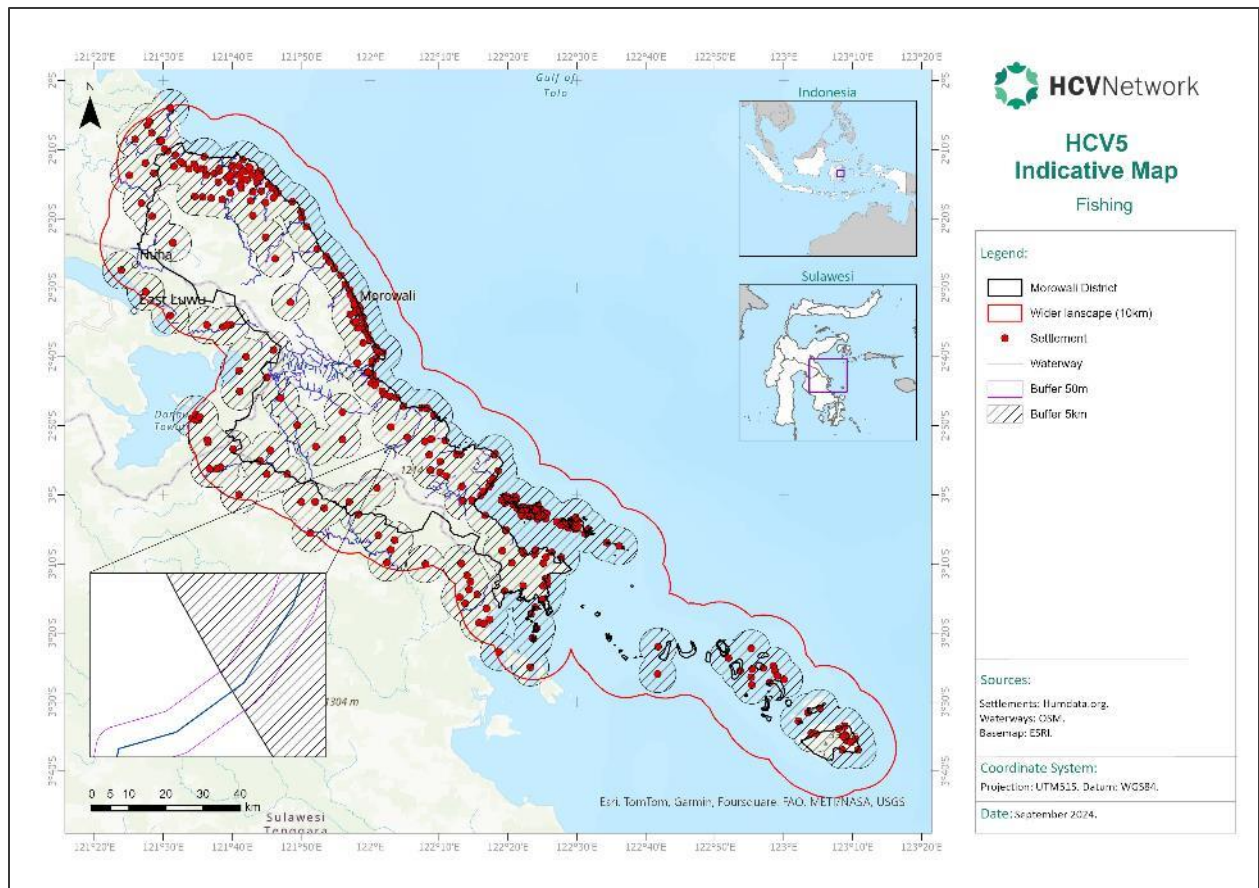
HCV5: Community Needs

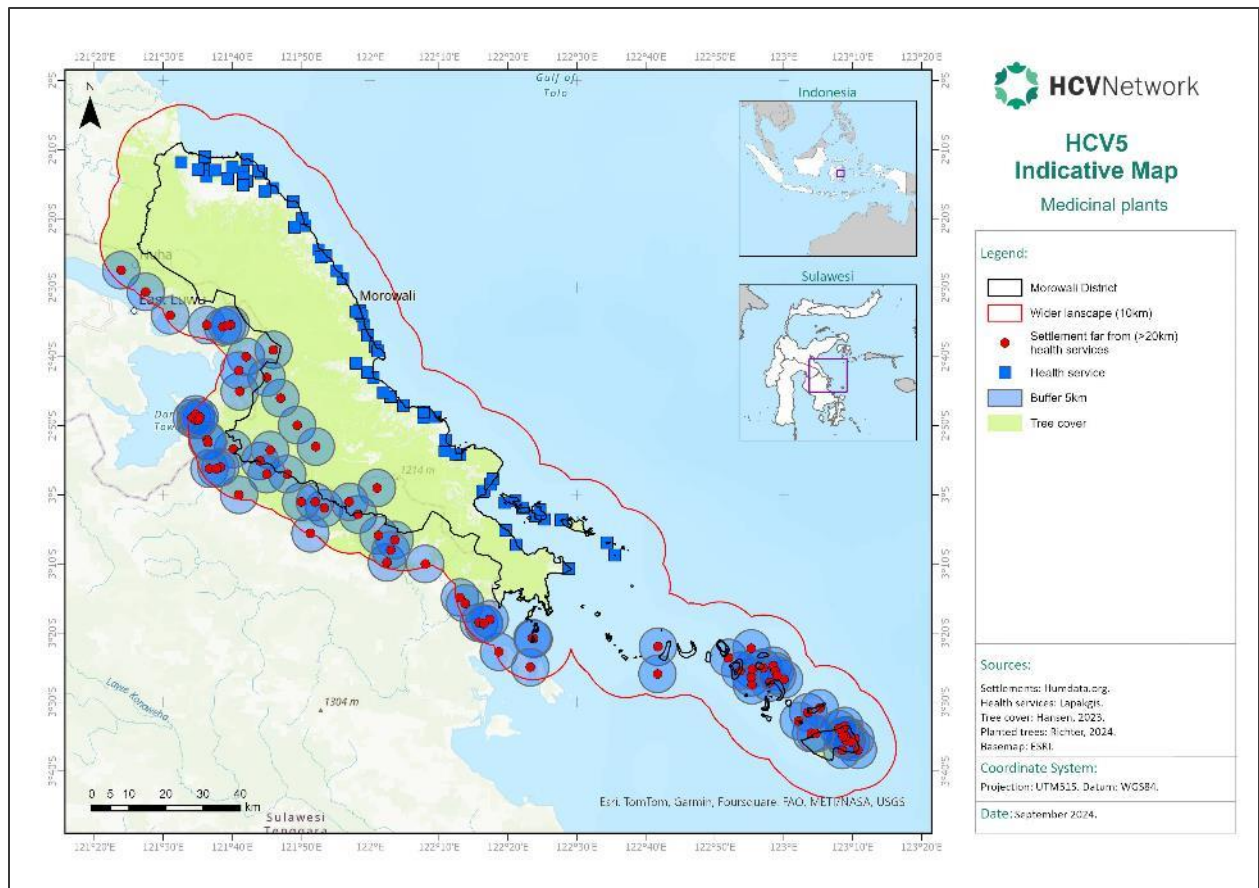
HCV	HCV Attribute or Group	Proxy Applied	Indicator Data or Proxy Data	Data Threshold Applied for High Indication	Data Threshold Applied for Low Indication	Data Threshold Applied for Negligible Indication	Source
HCV 5 - Sites and resources fundamental for satisfying the basic necessities of local communities or indigenous peoples (for example for livelihoods, health, nutrition, water), identified through engagement with these communities or indigenous peoples.	Timber resources	Yes. Proximity to natural forests, settlements, rivers and roads.	Forest cover	Forest areas near rivers and roads (<2km) and no more than 5km far from settlements.	All other areas of forest, regardless their distance to rivers, roads and settlements.	Non forest areas.	Hansen (tree cover); WRI (planted trees).
			Rivers				OSM.
			Settlement location				OSM; Who's On First.
			Roads				OSM.
	NTFPs (bamboo, rattan, foraged food etc.)	Yes. Proximity to natural forests and regenerating forests and distance to roads.	Forest cover	All forest land cover types (including regenerating forests and agroforestry) within a 5 km radius of the village location and far from (>5km) roads.	Areas of forest and regenerating forest within a 5 km radius of the village and closed to roads (<5km).	All other areas (non forest areas and areas of forest and regenerating forest far from a 5 km radius of the village)	Hansen (tree cover); WRI (planted trees).
			Roads				OSM.
			Settlement location				OSM; Who's On First.
	Fishing grounds for protein needs	Yes. Proximity to rivers, settlements, and sea	Rivers	Areas near rivers (50m each side) located near (<5km) settlements and Ocean area with 0-500m depth.	Areas near rivers (50m each side) located far from (>5km) settlements and Ocean area with >500m depth.	All other areas.	OSM
			Settlement location				OSM; Who's On First.
			Coastal area				OSM; Baltimore
	Medicinal plants	Yes. Proximity to natural forests and regenerating forests and distance to health services.	Forest cover	All forest land cover types (including regenerating forests and agroforestry) within a 5 km radius of the village location and far from (>20km) health services.	All other areas of forest and regenerating forest far from a 5 km radius of villages.	Non forest areas.	Hansen (tree cover); WRI (planted trees).
			Health services				Badan Informasi Geospasial.
Settlement location			OSM; Who's On First.				
Water sources necessary for drinking and sanitation	Yes. River area and water spring area		Rivers	River body	NA	NA	OSM
		Water Spring	500 meter around the water spring area	NA	NA	Morowali District Spatial Plan	





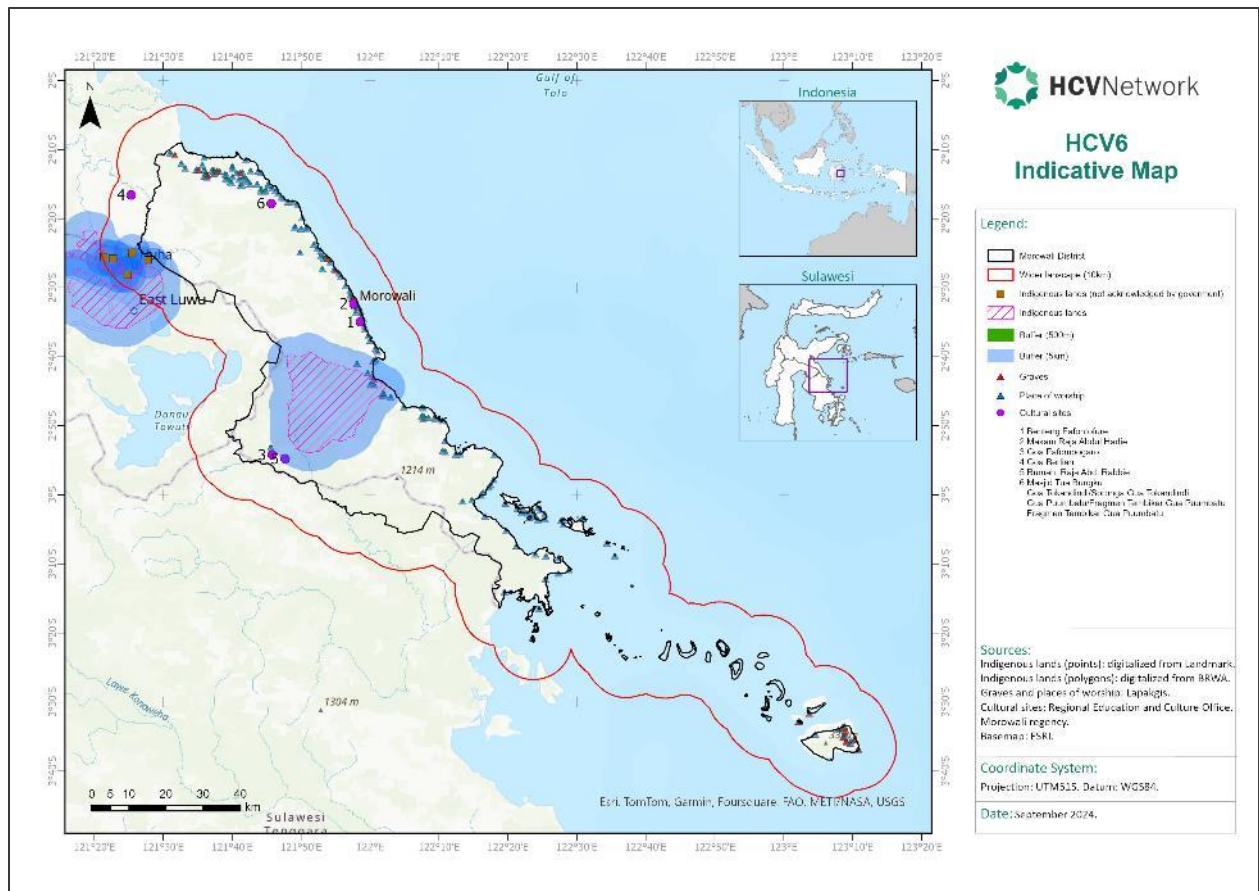






HCV6: Cultural Values

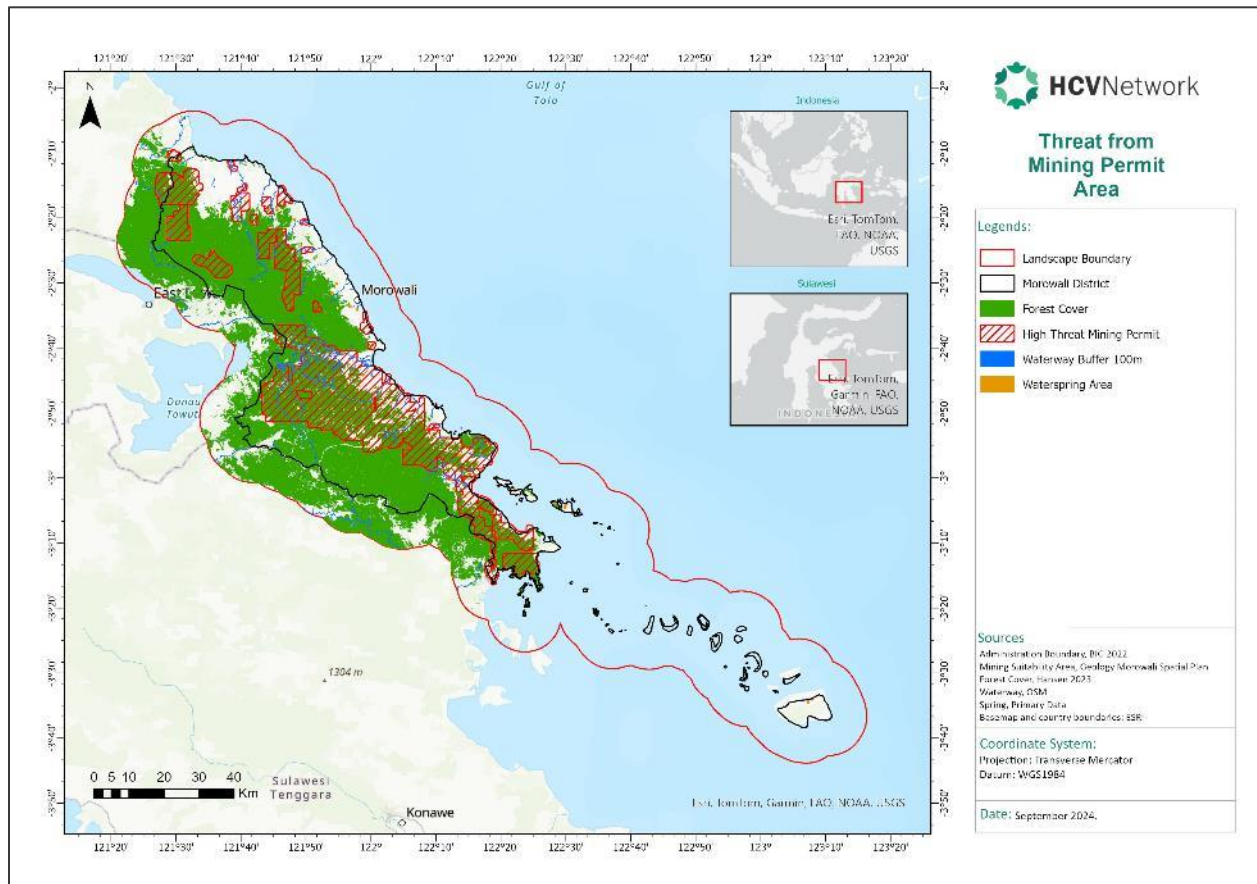
HCV	HCV Attribute or Group	Proxy Applied	Indicator Data or Proxy Data	Buffer applied (Threshold) for High Indication and Justification	Data Threshold for Low Indication	Source
HCV 6: Cultural values	Sacred sites, burial grounds and historical village site	Yes. Proximity to graves, places of worship and cultural sites.	Graves	Areas surrounding buildings or sites of cultural/religious importance with 500m buffer applied (precautionary)	All other areas	Badan Informasi Geospasial.
			Places of worship (temples, churches and mosques)			Regional Education and Culture Office, Morowali Regency.
	Customary rights claims	Yes. Proximity to traditional communities applied.	Indigenous lands (polygon)	5km buffer surrounding polygon.	All other areas	Digitalized from BRWA map viewer.
			Indigenous lands (points)	5km buffer surrounding point.	All other areas	Digitalized from Landmark map viewer. Only indigenous lands not acknowledged by government within AOI.

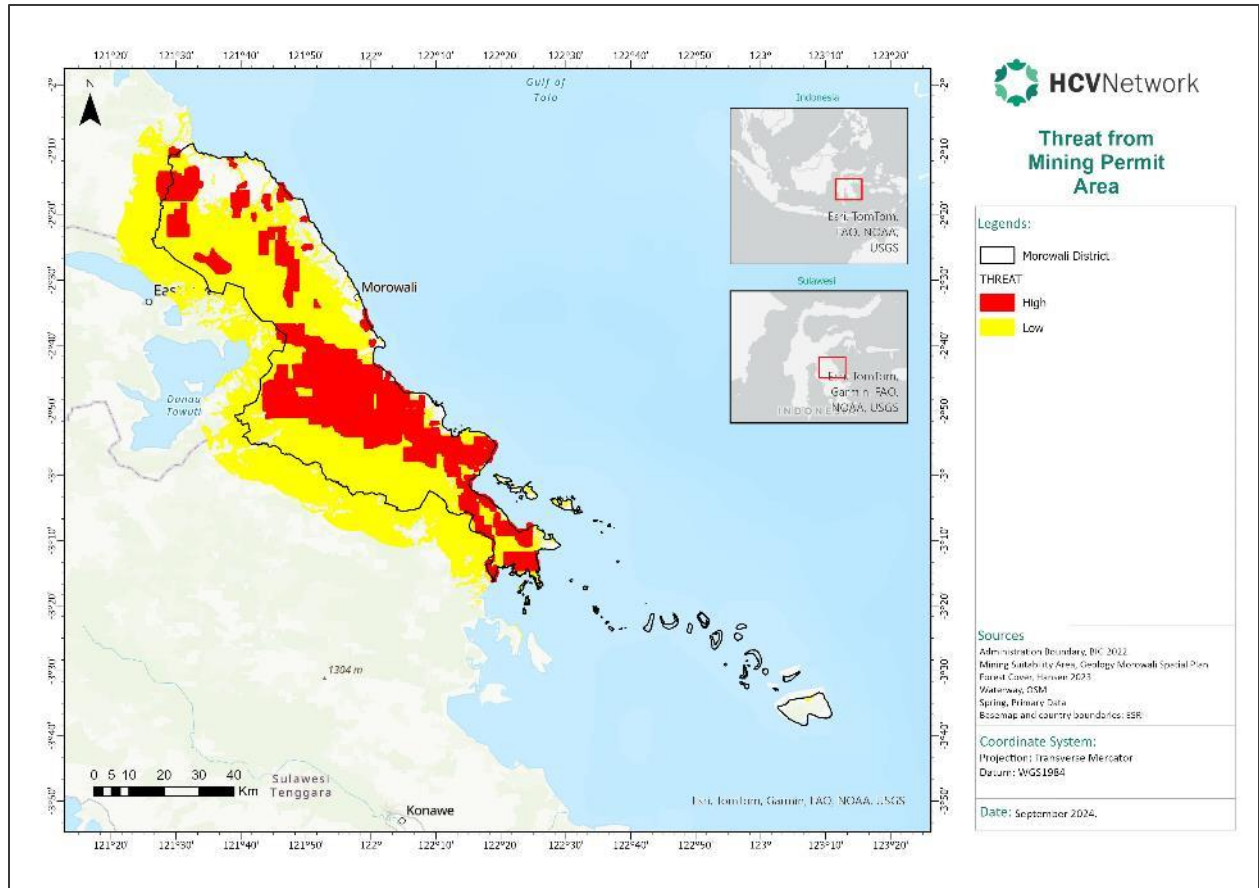


Annex 5: Threats to HCVs Maps

Internal threats from mining operations and infrastructure development

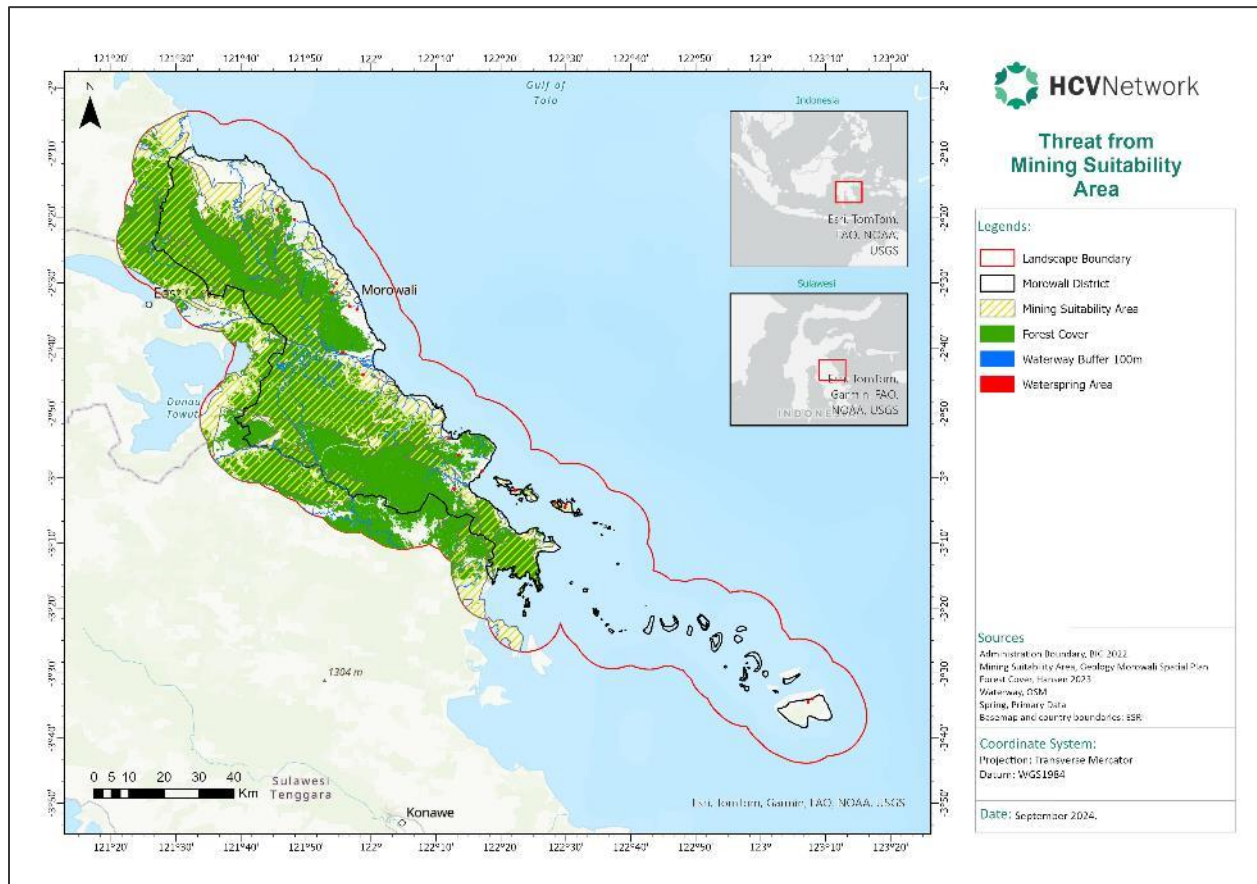
- Areas within designated permits or production zones are automatically considered high risk areas, reflecting the direct threat posed by such activities.
- There is no low threshold outside of these zones, suggesting that any permitted area carries inherent risks to HCVs.

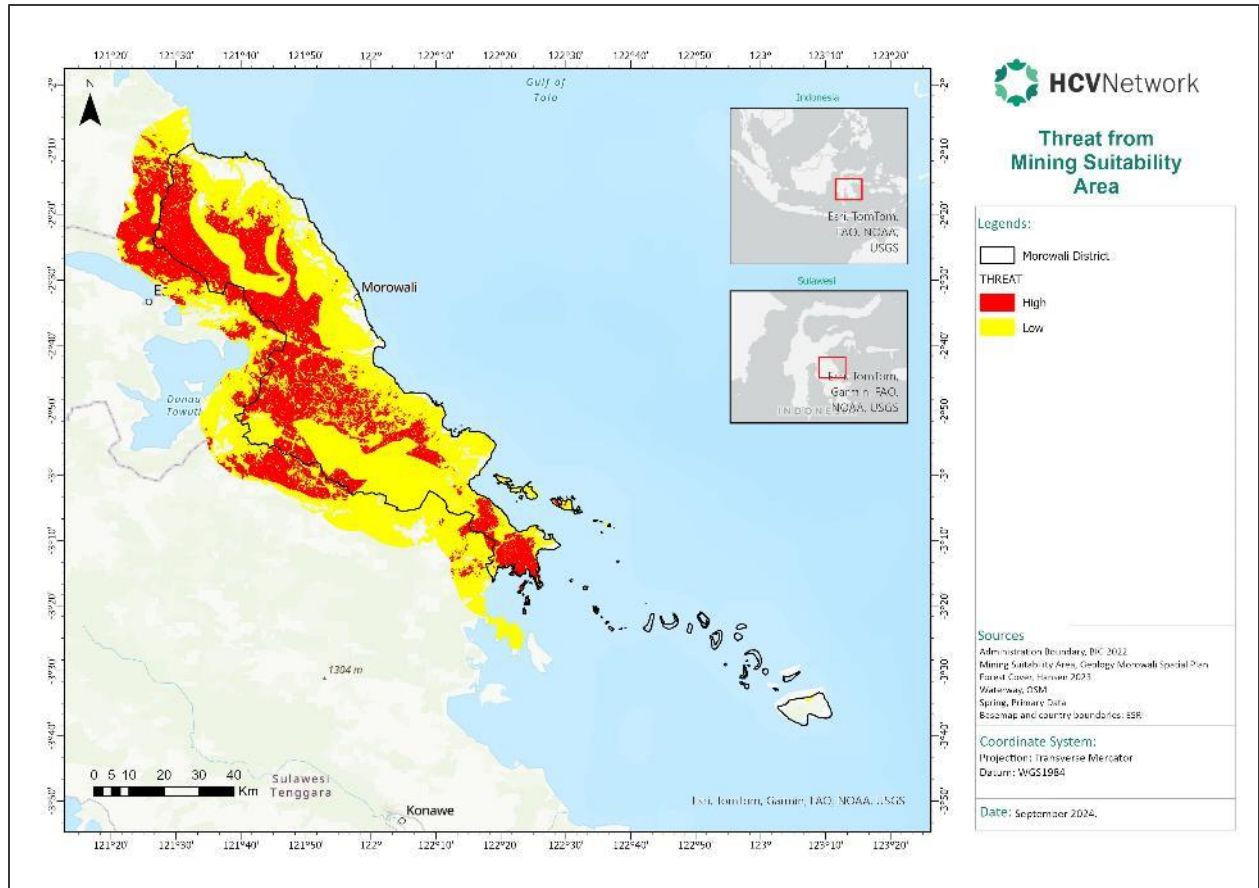




Internal threats from potential open-pit mining (current and future)

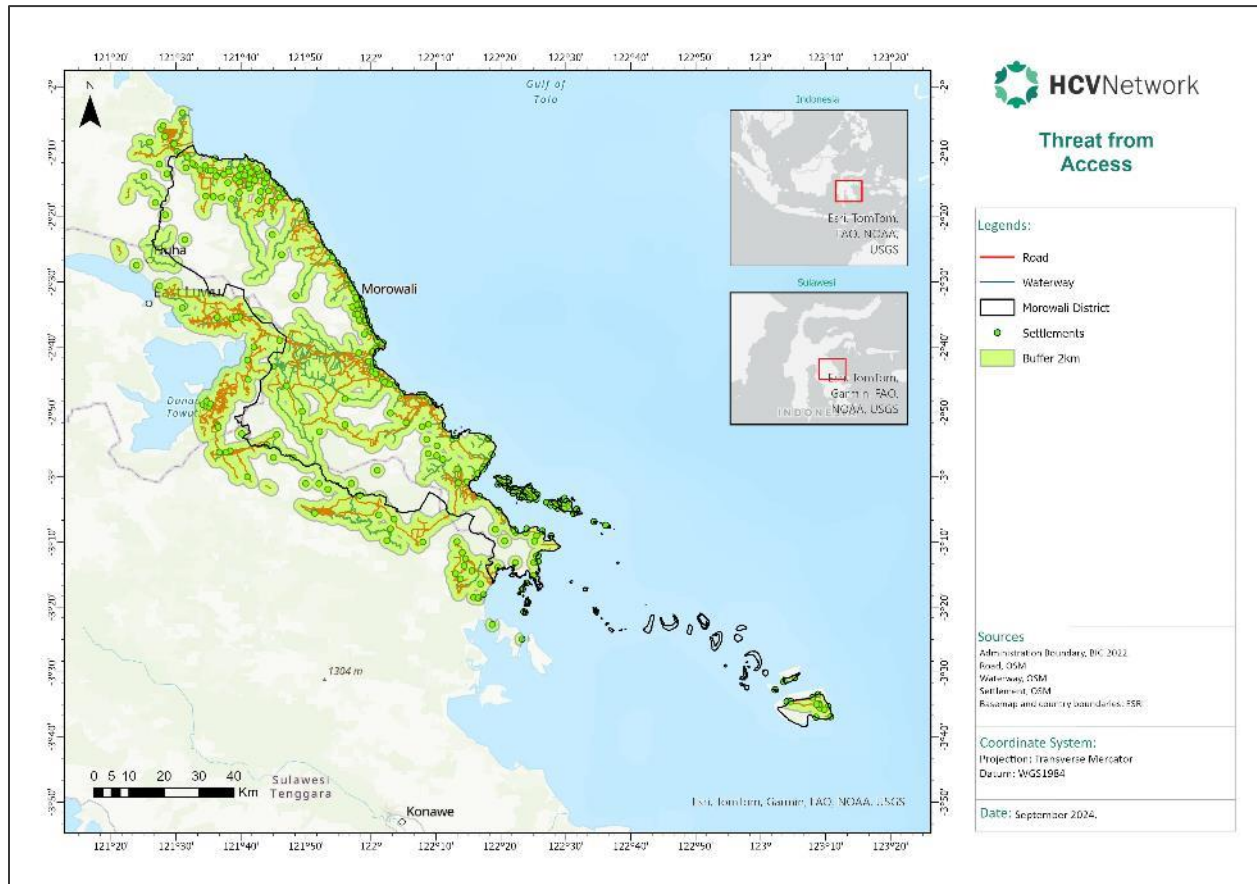
- The threat posed by areas with ultramafic characteristics represents a unique challenge for HCV management due to the specific ecological and geological conditions found in these regions.
- Ultramafic soils are typically high in heavy metals like nickel and magnesium, which create a hostile environment for most plant species, but also support highly specialized flora and fauna, some of which may be endemic or rare (HCVI).
- These ecosystems are often fragile and may host unique biodiversity that has adapted to the extreme soil conditions.

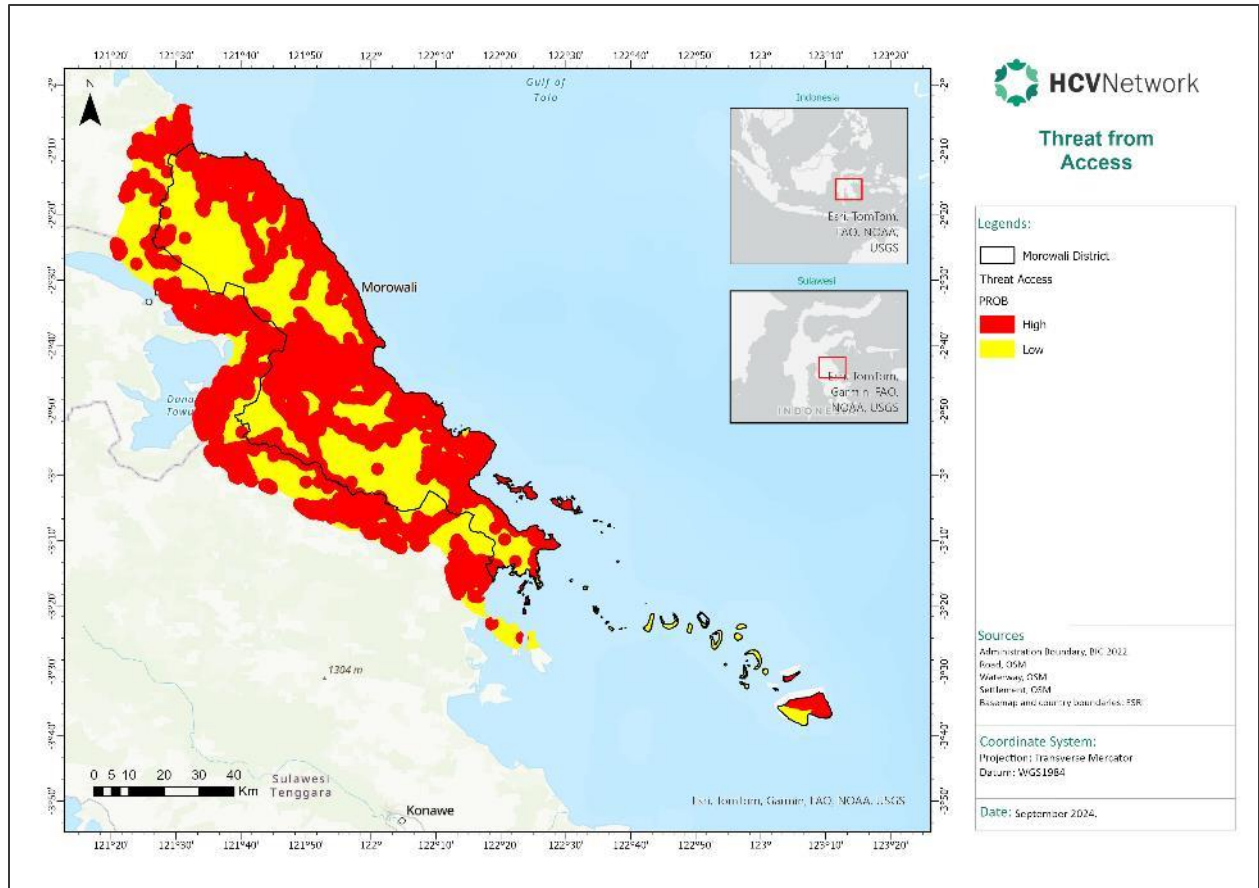




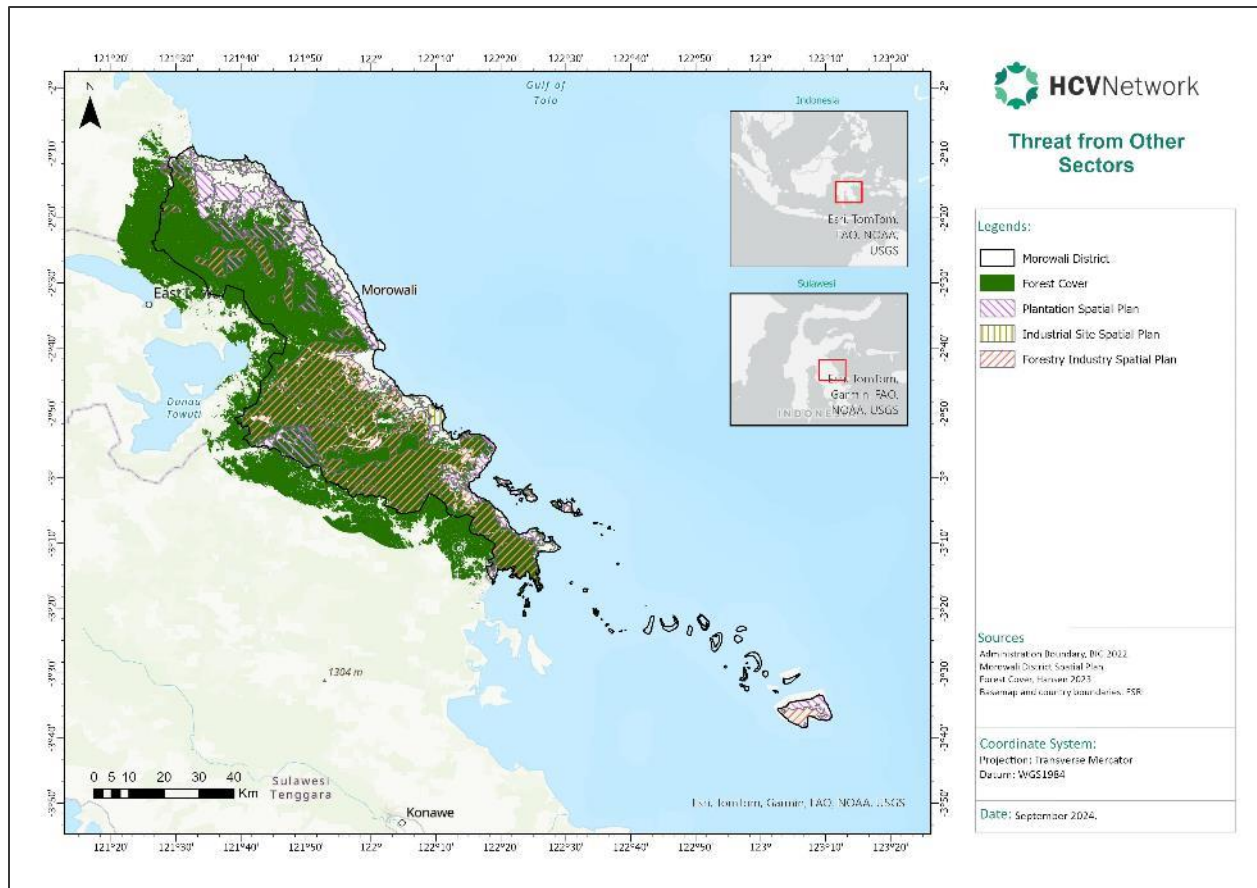
External threats from illegal logging and smallholder agricultural developments

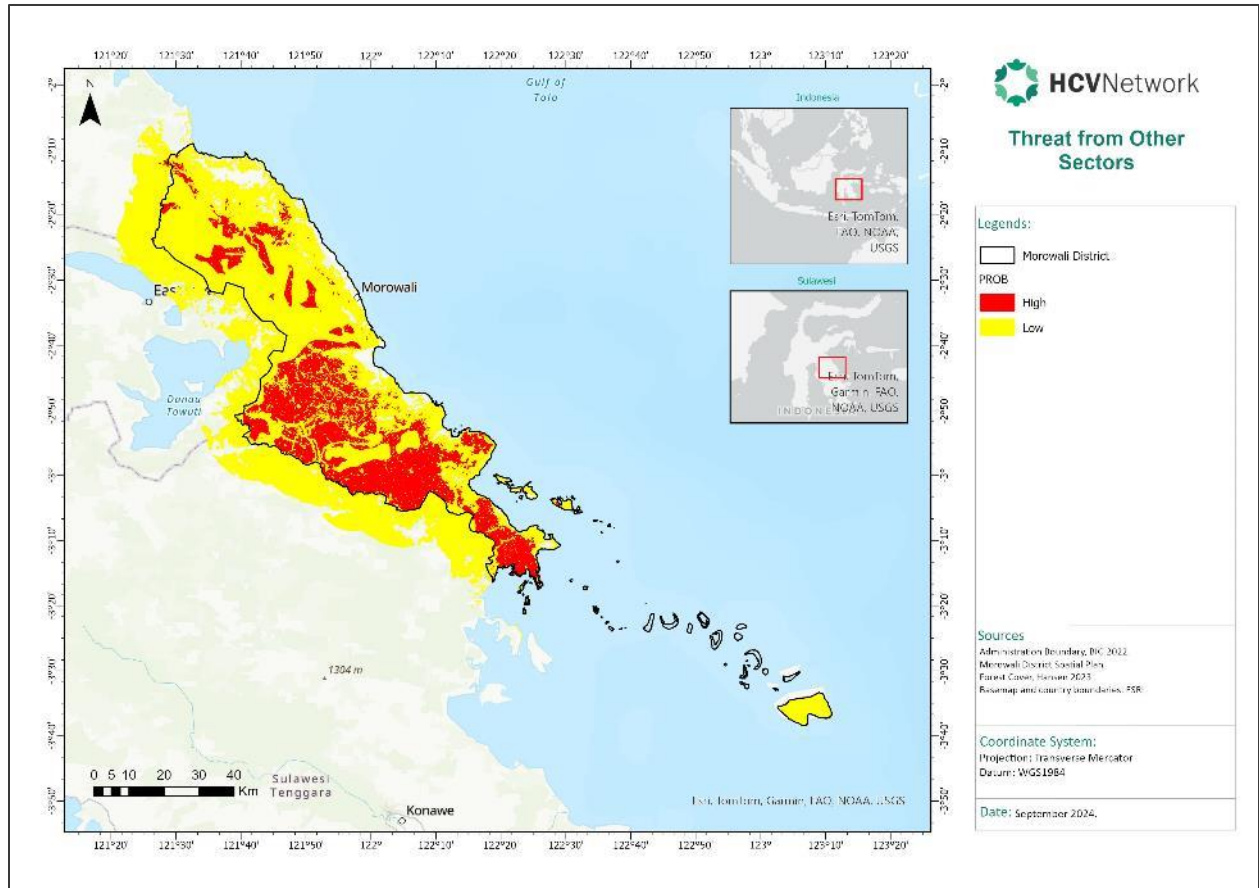
- These threats primarily impact HCVs within a 2km buffer, indicating that proximity to human infrastructure is critical for identifying areas with high conservation value.
- This buffer serves as a precautionary measure to limit potential impacts such as habitat fragmentation, pollution, or human encroachment.





External threats from large-scale land use sector (plantations and timber)





Annex 6: HCV Screening Aligned with Mitigation Hierarchy Interventions

The mining sector commonly uses the ‘mitigation hierarchy’ of interventions to limit environmental impacts from planned projects, informing decisions on land-use, land management, and the conservation of natural resources.

The HCV Approach aims to maintain and enhance HCVs, and the HCV Network’s mission is to protect HCVs. The HCV Approach does not follow the mitigation hierarchy, and the organization does not endorse or advocate for offsets.

However, in this particular scenario, HCV Screening and the different priority areas indicated from the results were used to indicate and map the locations of potential types of conservation interventions by the project that were superficially aligned to the ‘mitigation hierarchy’ approach in terms familiar to the mining sector.

MITIGATION HIERARCHY ALIGNED WITH HCV SCREENING RESULTS AND LOCATIONS IN THE LANDSCAPE

Probability (H/L)	Threat (H/L)	HCV Screening Priority	Threat Type (Internal / External; Direct / Indirect)	Inside / outside concession	Strategy and management
HIGH	HIGH	HIGH Priority	Internal; Direct (Planned open-pit mining areas and Infrastructure)	Inside	AVOID (Set-aside)
HIGH	HIGH	HIGH Priority	Internal; indirect (Sedimentation, Pollution CR(IV))	Inside and outside* (limited to aquatic areas impacted)	MINIMIZE (improved management beyond legal requirements)
LOW	HIGH	MEDIUM Priority	All Threats	Outside	RESTORATION
LOW	LOW	LOW Priority	N/A	Outside	
HIGH	HIGH	HIGH Priority	External (illegal logging, large scale plantation development, hunting, Small scale agricultural development)	Outside	OFFSET** (conservation area managed by third party - support orgs with specific jurisdiction – KPH, PS, Village org)

* Minimization measures can also be applicable outside the concession.

** Stakeholder must prioritize Avoidance, Minimization and Restoration before Offsetting.

POTENTIAL CONSERVATION INTERVENTIONS

- **Avoid:**
 - Measures taken to avoid creating impacts from the outset (including direct, indirect, and cumulative impacts), such as careful spatial or temporal placement of elements of infrastructure, in order to completely avoid impacts on certain components of biodiversity.
 - Examples: Forested habitats near mining sites and key wildlife corridors.
- **Minimize:**
 - When all measures to Avoid impact have been exhausted, minimization measures can be taken to reduce the duration, intensity, and/or extent of impacts (including direct, indirect, and cumulative impacts) that cannot be completely avoided, as far as is practically feasible.
 - Examples: Installing sediment traps and buffer zones in agricultural areas and riparian zones.
- **Restoration:**
 - When all measures to Avoid and Minimize impacts have been exhausted measures can be taken to assist the recovery of ecosystems that have been degraded, damaged, or destroyed.

- Involves altering an area in such a way as to re-establish an ecosystem's composition, structure, and function, usually bringing it back to its original (pre-disturbance) state or to a healthy state close to the original.
- Examples: Forest restoration in Social Forestry Area, wildlife corridors, mangrove replanting, and coral reef rehabilitation.
- Offset:
 - When all measures to Avoid, Minimize and Restore impacts have been exhausted measures could be taken to compensate for residual adverse impacts on biodiversity and ecosystem services (including community needs and cultural values) arising from mining developments.
 - The HCV Network and the HCV Approach do not follow or endorse offsetting. In the context of this project offset areas are candidate areas for investing in off-site conservation interventions, additional to the interventions in the previous steps, which would achieve measurable positive conservation outcomes in the landscape after all the above appropriate prevention and mitigation actions have been taken.
 - The goal of biodiversity offsets must be to ensure no net loss or a net gain of biodiversity and ecosystem services on the ground with respect to species composition, habitat structure, ecosystem function, and people's use and cultural values associated with biodiversity.

AVOID:

Mitigation	Threat Element	Affected HCV
Avoid	Mining (Pit Operations); Mining Infrastructure	<p>HCVs: Lowland Forest Montane Forest Karst Ecosystems</p> <p>HCV4: Riparian Buffers Coastal Buffers Watershed Regulation Erosion Control</p> <p>HCV5: NTFPs Building Materials Freshwater</p> <p>HCV6: Traditional Lands Archeological and Cultural Sites</p>

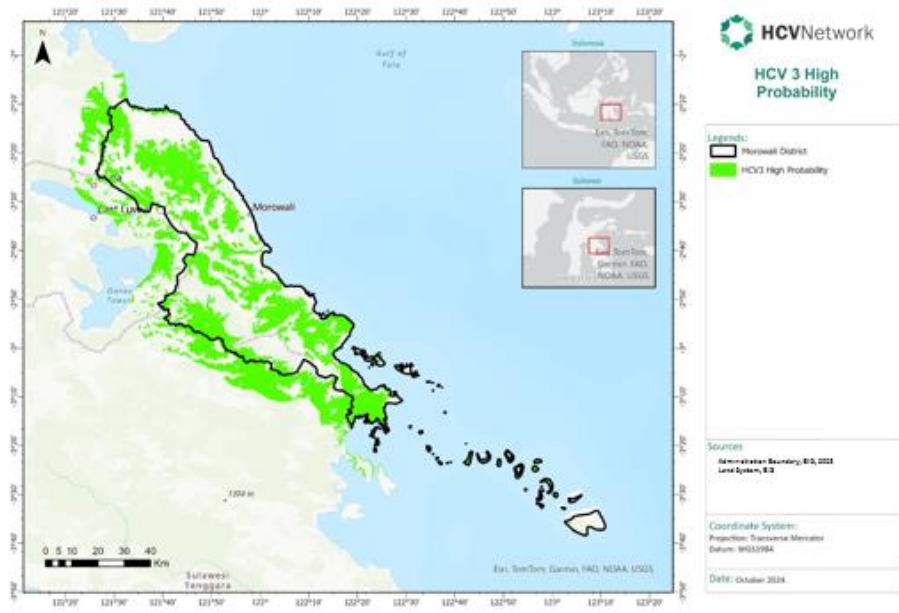


AVOID:

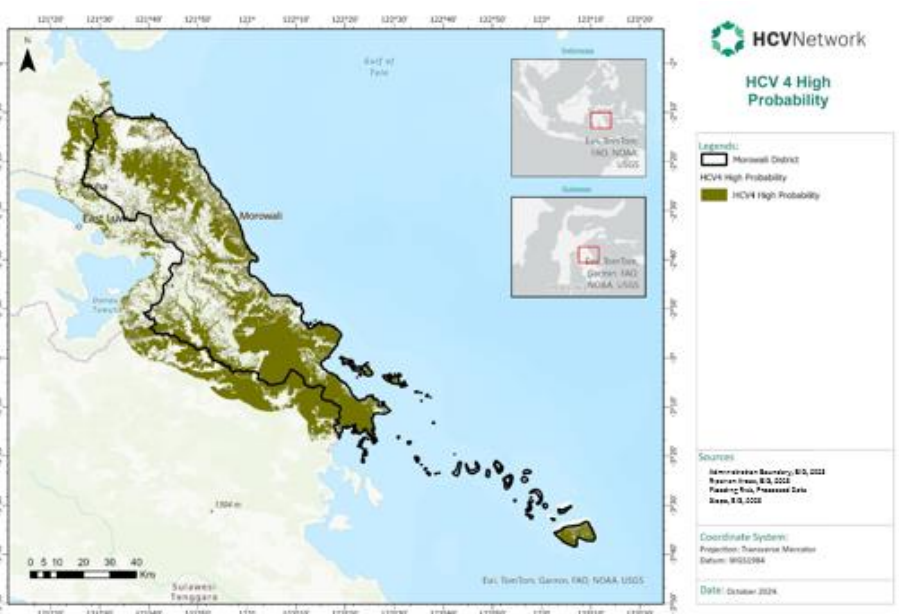
- Mining activities cause land clearance, habitat fragmentation, and pollution, directly affecting ecosystems.
- Affected HCVs:
 - Lowland forests support biodiversity and serve as migration corridors. Montane forests are critical for water regulation. Karst ecosystems are fragile and host endemic species. Mining threatens these ecosystems through fragmentation and degradation.
 - Riparian zones link terrestrial and aquatic ecosystems, supporting biodiversity. Coastal buffers prevent shoreline erosion and protect against storm surges. Mining infrastructure increases erosion risks, threatening both.
 - Communities rely on NTFPs and freshwater for food, medicine, and materials. Mining reduces access to these resources and compromises water quality.
 - Cultural and archaeological sites are often sacred or historically significant. Mining can destroy these areas or displace communities, severing ties with their heritage.



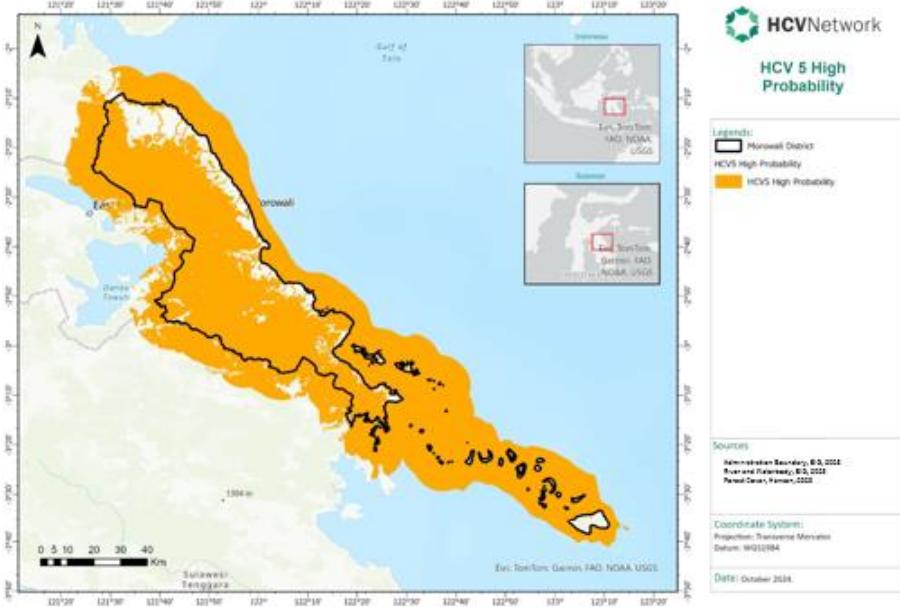
AVOID – HCV 3 Probability Map



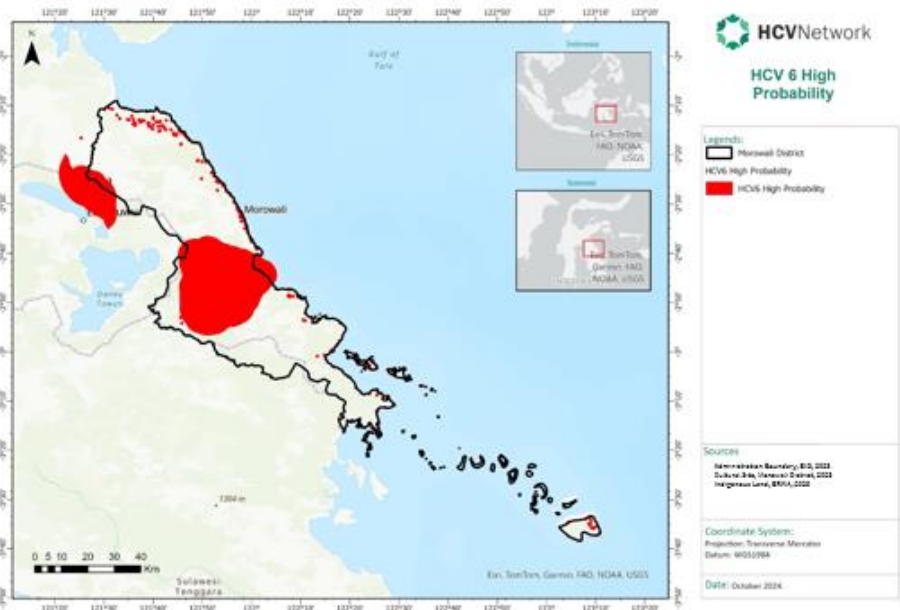
AVOID – HCV 4 Probability Map



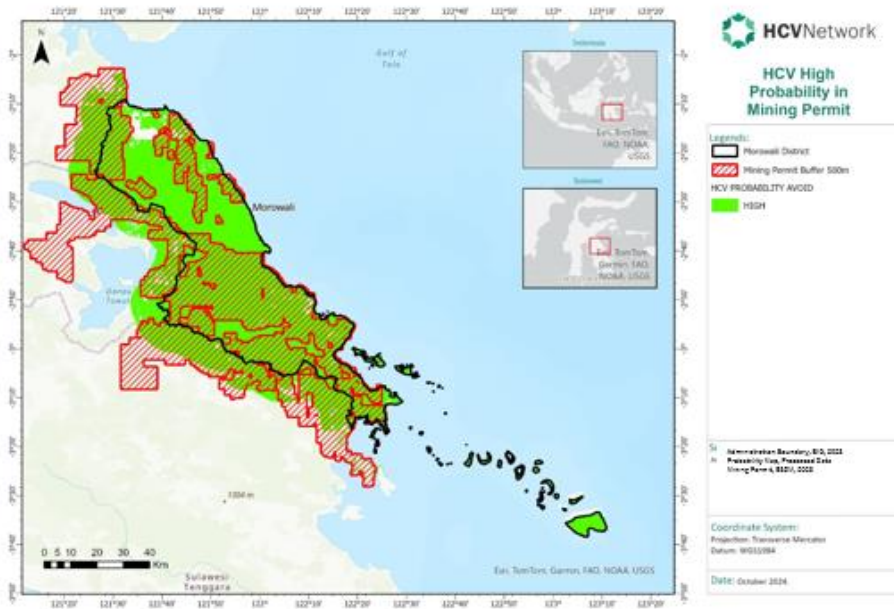
AVOID – HCV 5 Probability Map



AVOID – HCV 6 Probability Map



AVOID – HCV High Probability Map

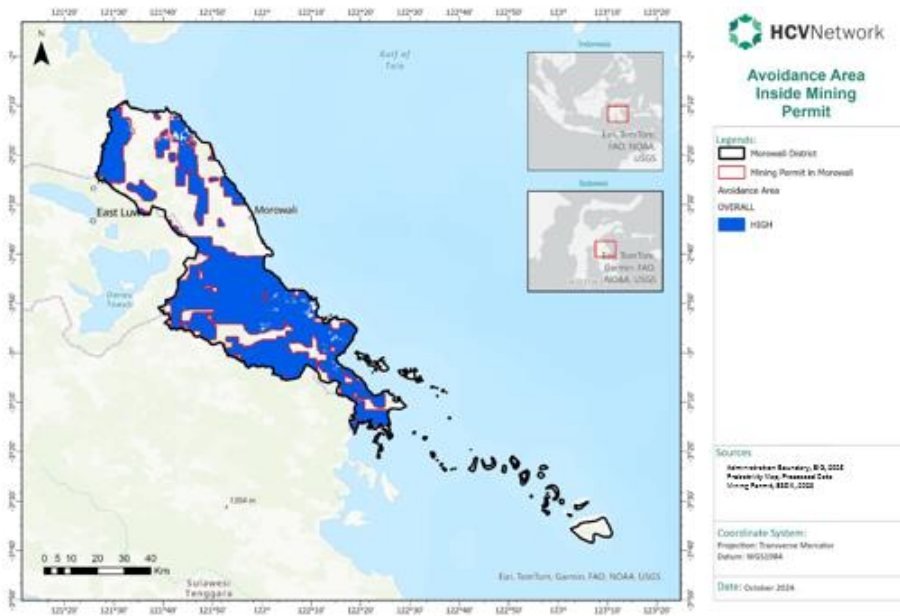


AVOID – IMPACT PATHWAYS

- Habitat loss from land clearing eliminates essential species habitats.
- Pollution from infrastructure operations contaminates freshwater and aquatic ecosystems.
- Erosion from cleared land leads to sedimentation, impacting rivers and watersheds.
- Displacement of communities reduces access to NTFPs and cultural heritage sites.



AVOIDANCE AREA



AVOIDANCE AREA

- This map consolidates all areas identified for avoidance across various HCV categories to ensure no-go zones are maintained for critical values.
- These areas represent the highest conservation priority where impacts must be avoided entirely.
- By protecting key ecosystems and cultural sites, the map ensures critical habitats (HCV 3 and 4), essential resources (HCV 5), and traditional lands (HCV 6) remain intact.
- Once damaged, karst landscapes and forests are difficult to restore, making avoidance the only viable strategy.
- Operational activities (e.g., mining) are suggested to be restricted, ensuring long-term conservation of forests, riparian zones, and community resources.
- This mitigation action presents an opportunity for landscape-level coordination, engaging both community actors and regulators to jointly enforce no-go zones, and private sector commitment.



SUMMARY – AVOID

Strategy Management	Threat Elements	Affected HCVs	Impact Pathways	Potential Prescriptions
Avoid	Mining operations, infrastructure development	<ul style="list-style-type: none"> HCV3: Lowland forests, montane forests, karst ecosystems HCV4: Riparian buffers, coastal buffers, watershed regulation, erosion control HCV5: NTFPs, building materials, freshwater HCV6: Traditional lands, archaeological and cultural sites 	<ul style="list-style-type: none"> Habitat loss from land clearing Pollution contaminating aquatic ecosystems Erosion causing sedimentation in rivers Community displacement reducing access to natural resources and heritage sites 	<ul style="list-style-type: none"> Implement landscape-level exclusion zones based on advanced GIS analysis to ensure biodiversity corridors are intact. Enforce early warning systems using remote sensing (e.g., satellites, drones) to detect encroachments and initiate quick responses. Collaborate with stakeholders to integrate no-go zones into district-level planning and legal frameworks for enforcement and sustainability. Develop conservation agreements with mining companies to ensure high-priority conservation areas remain untouched while financing other conservation initiatives.



MINIMIZATION

Mitigation	Threat Element	Affected HCV
Minimization	Sedimentation; Pollution	<p>HCV1: RTE Marine Species</p> <p>HCV3: Coral Reefs Ecosystem Seagrass Beds Ecosystem Lakes Mangroves</p> <p>HCV4: Freshwater</p> <p>HCV5: Fish (Marine and Freshwater)</p>

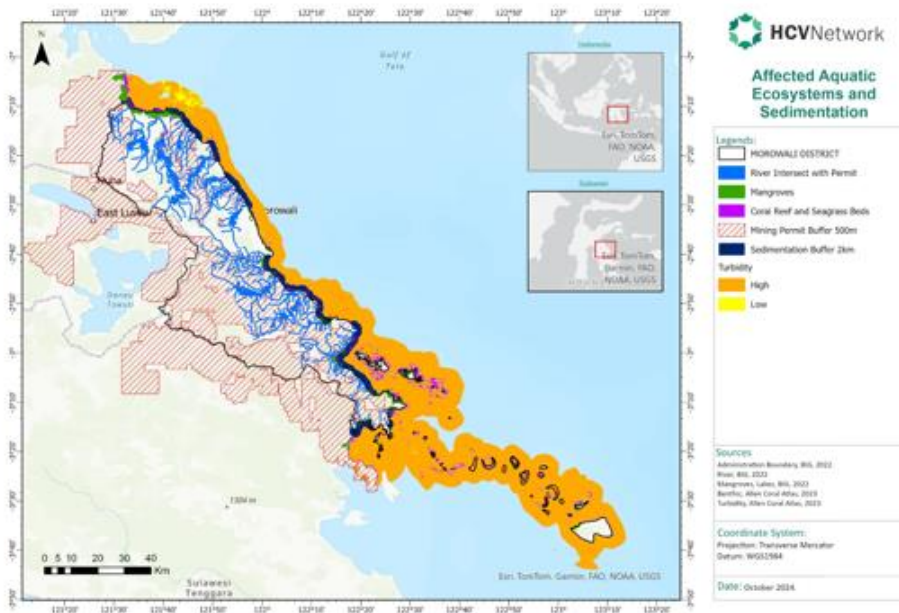


MINIMIZATION

- These impacts occur from operational runoff or unmanaged discharges that enter water systems, especially in areas with mining and infrastructure.
- Affected HCVs:
 - Rare, threatened, and endangered (RTE) marine species are highly sensitive to pollution and habitat degradation. Toxic pollutants disrupt breeding and food availability.
 - Coral reefs and seagrass beds work together to support marine biodiversity and fisheries. Sedimentation disrupts these ecosystems, harming marine life.
 - Polluted freshwater systems affect drinking water supplies and fisheries, threatening community livelihoods.
 - Healthy fish stocks are essential for local fishers. Pollution reduces fish populations, causing economic losses and food insecurity.



AFFECTED HCV AND THREAT MAP

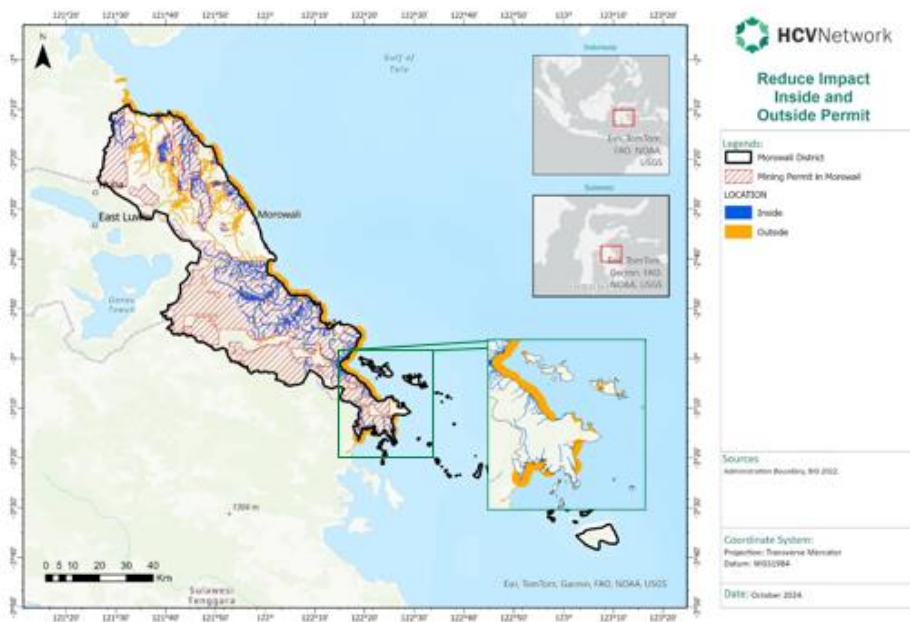


MINIMIZATION – IMPACT PATHWAYS

- Sedimentation can smother coral reefs and seagrass beds, reducing biodiversity.
- Pollution harms marine species and fish stocks, leading to ecosystem imbalance.
- Contaminated water supplies affect fisheries and communities reliant on them.
- Loss of water quality disrupts ecosystems, especially in mangrove and lake systems.



MINIMIZATION – IMPORTANT AREA INSIDE AND OUTSIDE PERMIT



MINIMIZATION – IMPORTANT AREA INSIDE AND OUTSIDE PERMIT

- The map identifies critical areas inside and outside the concession boundary where enhanced management is needed to reduce impacts.
- Threats like sedimentation and pollution do not respect boundaries, so it's essential to manage both on-site and external sources of impact.
- Marine and freshwater ecosystems, including coral reefs, seagrass beds, and mangroves, are particularly vulnerable to waterborne threats.
- Ensuring long-term survival requires stringent pollution control and habitat restoration.
- The map emphasizes the need for improved water management and pollution control across both internal operations and surrounding landscapes.
- It ensures that essential ecological functions (e.g., fisheries and freshwater systems) remain intact through proactive mitigation efforts.



SUMMARY – MINIMIZATION

Strategy Management	Threat Elements	Affected HCVs	Impact Pathways	Potential Prescriptions
Minimization	Pollution, sedimentation from operational runoff	<ul style="list-style-type: none"> • HCV1: RTE marine species • HCV3: Coral reefs, seagrass beds, mangroves • HCV4: Freshwater systems • HCV5: Fish stocks (marine and freshwater) 	<ul style="list-style-type: none"> • Sedimentation disrupting coral and seagrass ecosystems • Pollution reducing fish populations • Contaminated water supplies impacting livelihoods 	<ul style="list-style-type: none"> • Apply nature-based solutions (NBS) like riparian zone restoration with native species to control sedimentation. • Integrate real-time water quality monitoring systems and alert stakeholders to pollution events. • Adopt industry-specific best management practices (BMPs) for water and waste management in high-risk operations. • Promote multi-stakeholder watershed governance platforms involving industries, communities, and regulators to share responsibilities in reducing pollution.



RESTORATION

Mitigation	Threat Element	Affected HCV
Restoration Terrestrial	<p>External (illegal logging, large scale plantation development, hunting, Small scale agricultural development) – Priority 2</p> <p>No threat – Priority 4</p>	<p>HCV1: RTE Terrestrial Species</p> <p>HCV3: Lowland Forest Montane Forest Karst Ecosystems</p> <p>HCV4: Riparian Buffers Coastal Buffers Watershed Regulation Erosion Control</p> <p>HCV5: NTFPs Building Materials Freshwater</p> <p>HCV6: Traditional Lands Archeological and Cultural Sites</p>



RESTORATION

Mitigation	Threat Element	Affected HCV
Restoration Marine	<p>External (Illegal hunting of turtles, bomb fishing, use of poisons, pond) – Priority 2</p> <p>No threat – Priority 4</p>	<p>HCV1: RTE Marine Species</p> <p>HCV3: Coral Reef Ecosystem and Seagrass Beds Mangroves</p> <p>HCV5: Fish (Marine and Freshwater)</p>

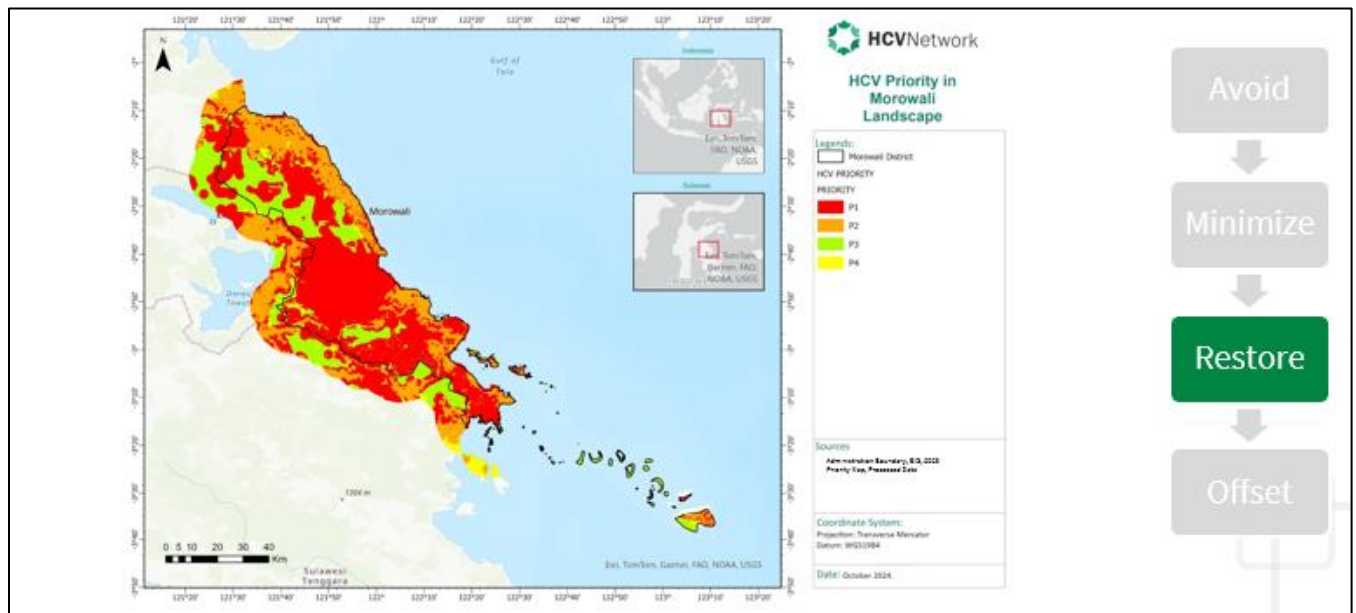


RESTORATION

- Threat activities result in the conversion of forests, mangroves and habitats for economic gain, increasing deforestation and biodiversity loss.
- RTE terrestrial species depend on intact forests for survival. Habitat loss from logging and agricultural expansion pushes them toward extinction.
- RTE marine species depend on healthy ocean ecosystems for survival. Habitat loss from coastal development, overfishing, and pollution pushes them toward extinction.
- Restoring forests and mangroves improves watershed regulation and enhances biodiversity.



HCV PRIORITY AREA



RESTORATION AND OFFSET CRITERIA

- Restoration:
 - Areas where HCVs are likely to be absent (Priority 2/4)
 - Adjacent or connect to wider landscape (Priority 1/3)
 - Undeveloped area
 - Not inside mining permit area
- Offset
 - Areas where HCVs are likely to be present (Priority 1)
 - Undeveloped area
 - Not inside mining permit area
- The analysis will look at the area of authority to ensure effective engagement
 - FMU
 - District Authority

RESTORATION – POTENTIAL AREA

- Partnerships with communities and NGOs will support sustainable land-use practices.
- Restoration efforts will improve biodiversity, ecosystem services, and livelihoods.
- Identified Social Forestry Areas can be a starting point to engage with affected communities to develop a restoration and preservation projects.
- Apart from Social Forestry Areas, the analysis identified the Priority 4 area as a potential restoration and compensation project area that maintain the Priority 3 forest integrity



SUMMARY – RESTORATION

Strategy Management	Threat Elements	Affected HCVs	Impact Pathways	Potential Prescriptions
Restoration	Illegal logging, agricultural expansion, habitat degradation	<ul style="list-style-type: none"> HCV1: RTE terrestrial and marine species HCV3: Forests and mangroves HCV4: Watersheds, coastal buffers HCV5: NTFPs, building materials, fish HCV6: Cultural heritage sites 	<ul style="list-style-type: none"> Habitat degradation reducing biodiversity Depleted watersheds affecting water availability Coastal erosion threatening aquatic ecosystems 	<ul style="list-style-type: none"> Develop reforestation programs using climate-resilient native species and assisted natural regeneration techniques. Establish public-private partnerships for restoration efforts, engaging companies to invest in biodiversity corridors as part of their ESG commitments. Promote livelihood diversification through agroforestry systems, enhancing community resilience while reducing logging pressure.



OFFSET

Mitigation	Threat Element	Affected HCV
Offset Terrestrial	External (illegal logging, large scale plantation development, hunting, Small scale agricultural development)	<p>HCV1: RTE Terrestrial Species</p> <p>HCV3: Lowland Forest Montane Forest Karst Ecosystems</p> <p>HCV4: Riparian Buffers Coastal Buffers Watershed Regulation Erosion Control</p> <p>HCV5: NTFPs Building Materials Freshwater</p> <p>HCV6: Traditional Lands Archeological and Cultural Sites</p>



OFFSET

Mitigation	Threat Element	Affected HCV
Offset Marine	External (Illegal hunting of turtles, bomb fishing, use of poisons, pond)	<p>HCV1: RTE Marine Species</p> <p>HCV3: Coral Reef Ecosystem and Seagrass Beds Mangroves</p> <p>HCV5: Fish (Marine and Freshwater)</p>



OFFSET

- Threat activities degrade ecosystems, fragment habitats, and reduce community access to resources.
- Offsetting impacts through community-based forestry initiatives can restore access to forest products and improve livelihoods.
- Offset projects can include community engagement and cultural preservation programs, fostering local stewardship.
- Coral reefs and mangroves together support biodiversity and stabilize coastlines.
- Maintaining these habitats enhances natural coastal defences and carbon sequestration.



OFFSET – IMPACT PATHWAYS

- Poaching of turtles threatens species survival and disrupts ecosystem dynamics.
- Bomb fishing and poison use decimate coral reefs and other habitats, leading to cascading biodiversity loss.
- Pond construction (for aquaculture) alters natural shorelines and reduces mangrove coverage, weakening coastal resilience and fish nurseries.
- Illegal logging fragments habitats, disrupting wildlife corridors and leading to biodiversity loss.
- Land conversion for agriculture depletes soil nutrients, accelerates erosion, and reduces carbon sequestration potential.
- Overgrazing by livestock degrades grasslands and disrupts natural vegetation, affecting wildlife populations and water cycles.
- Mining activities cause deforestation, soil contamination, and loss of key ecosystem services.



OFFSET – PRIORITY

- The maps identify priority areas where offsets will be implemented to restore ecosystems and mitigate residual impacts.
- HCVs are maintained, supporting both biodiversity and local fisheries.
- Community involvement in marine conservation creates opportunities for eco-tourism and sustainable livelihoods.
- The map serves as a spatial framework for coordinated management, ensuring long-term ecological and social benefits.

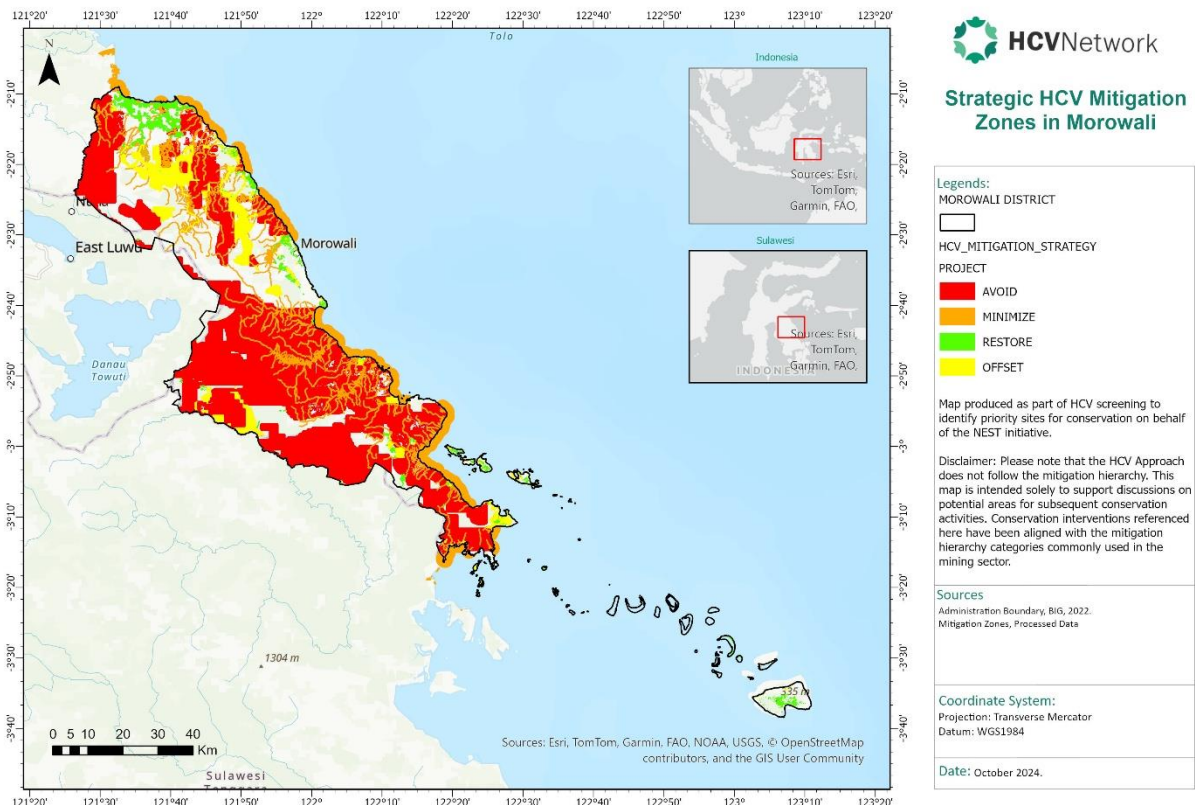


SUMMARY – OFFSET

Strategy Management	Threat Elements	Affected HCVs	Impact Pathways	Potential Prescriptions
Offset	Illegal hunting, overfishing, logging, land conversion	<ul style="list-style-type: none"> HCV1: RTE terrestrial and marine species HCV3: Forest and marine ecosystems HCV4: Coastal protection HCV5: Fish stocks, freshwater HCV6: Traditional lands and cultural sites 	<ul style="list-style-type: none"> Habitat loss from poaching and deforestation Land conversion reducing biodiversity and carbon sequestration Overfishing depleting marine resources 	<ul style="list-style-type: none"> Design community-managed conservation areas with long-term performance incentives, such as Payment for Ecosystem Services (PES). Develop integrated eco-tourism models linking cultural heritage sites and restored ecosystems to generate sustainable income. Introduce carbon credits and biodiversity offsets linked to conservation projects, providing alternative revenue streams. Launch marine co-management agreements with fishing communities to regulate harvests, protect nursery grounds, and combat illegal fishing.



SUMMARY MAP



The map above was produced as part of HCV screening to identify priority sites for conservation on behalf of the NEST initiative.

Disclaimer: Please note that the HCV Approach does not follow the mitigation hierarchy. This map is intended solely to support discussions on potential areas for subsequent conservation activities. Conservation interventions referenced here have been aligned with the mitigation hierarchy categories commonly used in the mining sector.