

# Operations Manual



Geomapping and Governance Unit  
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### **Abbreviations and Acronyms**

ABEMIS	- Agricultural and Biosystems Engineering Management Information System
AGT	- Applied Geo-tagging Technology
BAFE	- Bureau of Agriculture and Fisheries Engineering
BSWM	- Bureau of Soils and Water Management
COA	- Commission on Audit
COVID-19	- CoronaVirus Disease - 2019
DA	- Department of Agriculture
DA-ICTS	- Department of Agriculture - Information and Communication Technology Service
DAR	- Department of Agrarian Reform
DENR	- Department of Environment and Natural Resources
DILG	- Department of Interior and Local Government
DOT	- Department of Tourism
DPWH	- Department of Public Works and Highways
DST	- Decision Support Tool
DSWD	- Department of Social Welfare and Development
DTI	- Department of Trade and Industry
EAT	- Enterprise Assessment Tool
EDMS	- Enterprise Development and Marketing Specialist
EOM	- Enterprise Operation and Maintenance
ESF	- Environmental and Social Framework
eVSA	- Expanded Vulnerability and Suitability Assessment
FDT	- Field Density Test
FGD	- Focus Group Discussion
FMR	- Farm-to-Market Road

FMRDP	- Farm-to-Market Road Development Program
FS	- Feasibility Study
GEMS	- Geo-Enabling Initiatives for Monitoring and Supervision
GGU	- Geo-mapping and Governance Unit
GIS	- Geographic Information System
GPS	- Global Positioning System
ICT	- Information and Communication Technology
IDU	- Institutionalization Development Unit
iPEP-ARS	- Individual Performance Evaluation Profile - Accomplishment Reporting System
I-ROAD	- Integrated Road Network System
iSY	- Information System for Procurement
KII	- Key Informant interview
KML	- Keyhole Markup Language
LGU	- Local Government Unit
MAO	- Municipal Agriculture Office
NIA	- National Irrigation Administration
ODK	- Open Data Kit
OMAS	- Operation and Maintenance Audit System
PCCP	- Portland Cement Concrete Pavement
PCIP	- Provincial Commodity Investment Plan
PRDP	- Philippine Rural Development Project
PSO	- Project Support Office
PWS	- Potable Water System
RAEB	- Rapid Appraisal of Emerging Benefits
RIA	- Road Influence Area
ROMAT	- Regional Operation and Maintenance Audit Team
RPAS	- Remotely Piloted Aircraft System (Drone)
RPCO	- Regional Project Coordination Office
RSBSA	- Registry System for Basic Sectors in Agriculture
SES	- Social and Environmental Safeguards
SP	- Subproject
SPAR	- Subproject Appraisal Report
UAV	- Unmanned Aerial Vehicle (Drone)
VCA	- Value Chain Analysis
VSA	- Vulnerability and Suitability Assessment

## **I. Introduction**

The Geo-mapping and Governance Unit (GGU) has been a key I-SUPPORT unit in the Philippine Rural Development Project (PRDP) since its inception in 2014. The unit's main role is to enhance transparency and accountability for Project stakeholders by utilizing latest ICT innovations, following the principles for digital development. The GGU accomplishes this by creating user-friendly online platforms that enable efficient communication, collaboration, and information sharing among stakeholders. Additionally, GGU contributed to the project's success during the PRDP original by driving digital transformation and leveraging geospatial technologies to improve implementation processes.

In the subproject management level, one of the key contributions of the GGU is the development and implementation of Applied Geotagging Technology (AGT). This technology has significantly improved accountability and transparency within the project by preventing duplication and wastage of resources<sup>1</sup>. The AGT has been widely adopted by various offices under the Department of Agriculture (DA) for monitoring infrastructure and other projects<sup>2</sup>.

Also, infused with digitization and automation the Vulnerability and Suitability Assessment (VSA), developed by the Bureau of Soils and Water Management (BSWM), was expanded through the web-based eVSA. This tool integrates vulnerability, suitability, and socio-economic conditions to enhance the Geographic Information System (GIS)-based targeting of interventions and improve climate resilience into the Planning stage of identification and prioritization.

During the appraisal of subprojects, to address challenges related to overlapping proposals and data misrepresentation in Feasibility Studies of Farm-to-Market Roads, the Economics Unit in collaboration with the GGU established guidelines on Road Influence Area (RIA). By utilizing AGT and GIS tools, the GGU effectively estimates the influence area using a 2.5-kilometer band, thereby ensuring efficient planning and resource allocation<sup>3</sup>.

By utilizing and sharing geospatial technology, the unit accumulated geospatial data from AGT and GIS applications led to the development of the Integrated Road Network System (I-ROAD). This online portal harmonizes data, maps, and relevant information from different implementing agencies, streamlining the implementation of Farm-to-Market Roads.

In the project management level, in response to the COVID-19 outbreak and other calamities, the unit intensified the provision of digital solutions. Teleconferencing and online platforms were introduced to continue activities such as project review, monitoring, and supervision, enabling remote engagement with stakeholders. Various online platforms, including virtual site visits, Planner's Portal, Enterprise Developers' Portal, and digital dashboards, were developed to facilitate efficient data processing, reporting, and visualization to different components and units.

To streamline project management, the unit implemented the web-based Work Management System (iPEP-ARS). This system tracks workforce productivity and streamlines document management, ensuring efficient operations and alignment with management objectives.

In the PRDP scale-up, the unit aims to introduce remote sensing, data analytics, visualizations and use of artificial intelligence to further enhance project implementation and improve decision-making processes.

### **A. Purpose and Objectives of the Operations Manual**

This Operations Manual serves as a comprehensive guide to outlining the objectives, roles, functions, procedures and expected output related to the Geomapping and Governance's day-to-day activity and operations. This manual aims to provide clear instructions, guidelines, and case scenarios to ensure efficient and effective operations of the unit and for the component/units personnel and relevant stakeholders involved or contributory to the units' operations.

The purpose of the GGU Operations Manual is to:

- a. The manual outlines standardized processes and procedures to be followed by GGU and other components/unit staff personnel involved in data acquisition and information use. This ensures consistency, accountability, and transparency in the implementation of the use of digital tools developed and mainstreamed under the unit.
- b. Provides guidelines on how to effectively utilize Applied Geotagging Technology (AGT) including the GeoVideo & Unmanned Aerial Vehicles or Drone for monitoring infrastructure and other projects.
- c. Also, the manual provides clear instructions and guidelines to support GGU staff members in geospatial data acquisition, processing, visualization, and analysis utilizing the use of an established Geomapping Portal and Geographic Information System (GIS).

- d. The manual serves as a valuable resource for training and capacity-building initiatives within the Project. It provides guidance on the utilization of Applied Geotagging Technology (AGT), expanded Vulnerability and Suitability Assessment (VSA), Integrated Road Network System (I-ROAD), digital dashboards, and other tools. It facilitates knowledge sharing and ensures that staff members have access to relevant information.

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1 Philippine Rural Development Project (PRDP) 9th Implementation Support Mission, November 11-28, 2019 -Aide Memoire.

2 Mainstreaming/integration and Institutionalization of Reforms, 15th WB Implementation Support Mission Report, March 15, 2023.

3 The RIA is the area that an FMR is expected to effectively service to ensure that the value of investments in an FMR will be much more beneficial than costly. The Project will be utilizing a 2.5-kilometer band (length of the band to be laid out on geo-mapping tools such as Geographic Information System (GIS) and AGT) from both sides of the road to estimate its area of influence. - PRDP RIA Guidelines.

## **B. Target audience of this Manual**

The target audience of this manual is primarily the GGU personnel including the components and units of the Project and other stakeholders such as planners, policymakers, project implementers, monitoring, and evaluation personnel of projects within the Department of Agriculture (DA) and across the agriculture and fisheries sector.

## **II. Overview of the Geomapping and Governance Unit (GGU)**

### **A. Overall Role of the GGU in the Project**

The primary objective of the Geo-mapping and Governance Unit (GGU) is to enhance transparency and accountability for Project stakeholders by leveraging the latest ICT (Information and Communication Technology) innovations, guided by the principles for digital development. The GGU utilizes tools such as the freely available open-source Applied Geo-tagging Technology (AGT), Geographic Information System (GIS), and other complementary online technologies to make project information readily accessible to the public. This ensures greater visibility and understanding of the investments being proposed and implemented.

As the key provider of ICT solutions and online platforms within the Project, the GGU recognizes the need to adapt to the changing landscape brought about by the new normal. Embracing digital transformation, the GGU develops and implements user-friendly online platforms to facilitate efficient communication, collaboration, and information sharing among stakeholders. These efforts promote transparency, openness, and effective stakeholder engagement, aligning with the principles of digital development.

### **B. Principles of Digital Development**

The principles for digital development<sup>4</sup> serve as a guide or framework for the GGU in navigating the digital landscape and fulfilling its mandate of enhancing transparency, accountability, and efficiency in project implementation. These principles provide a set of guidelines that the GGU can refer to when designing and implementing its digital initiatives, ensuring that they align with best practices and ethical considerations in the digital domain.

***Design with the User.*** The unit prioritizes user needs by involving stakeholders in the design process and conducting user research to create intuitive and accessible digital solutions.

***Understand the Existing Ecosystem.*** The unit assesses the digital landscape, including infrastructure and technologies, to make informed decisions and ensure compatibility with existing systems.

***Build for Sustainability.*** The unit develops scalable solutions that can adapt to future needs and empowers stakeholders through capacity building, ensuring the long-term sustainability of digital initiatives.

***Be Data-Driven.*** The unit utilizes data analytics and visualization to inform decision-making, monitor project progress, and communicate outcomes effectively.

***Use Open Standards, Open Data, Open Source, and Open Innovation.*** The unit promotes transparency and collaboration by leveraging open standards, data, and source technologies, fostering innovation through partnerships and community engagement.

By adhering to these principles, the GGU ensures ethical practices, inclusivity, and effective outcomes in its digital initiatives. These principles provide a framework for the GGU to enhance transparency, accountability, and efficiency in project implementation.

### **C. Specific Activities, Roles, and Functions**

The Geomapping and Governance Unit (GGU) is an essential part of the project, focused on improving transparency and accountability through ICT innovations and digital solutions. GGU will work closely with the DA-Information and Communication Technology Section (ICTS) to integrate these innovations into regular operations. The GGU carries out various activities at both the subproject and project management levels to fulfill its mandate and support the project's objectives.

### ***Support to Subproject Level Activity***

During the planning and identification phase of subprojects, the Geomapping and Governance Unit (GGU) collaborates with IPLAN to integrate eVSA and climate data into the Value Chain Analysis and Commodity Investment Plan. The GGU provides the user-friendly Planners' Portal for easy access to relevant information. Working with the I-PLAN component, the GGU facilitates data collection, management, processing, visualization, and assessment. This empowers planners with science-based Decision Support Tools, enabling them to make informed decisions based on accurate and up-to-date information.

Additionally, the GGU utilizes Applied Geotagging Technology (AGT) during the subproject identification and prioritization stage. AGT involves capturing site information through photos, geovideos, and drone data. This allows for the digital mapping of subproject progress throughout the cycle management. The GGU relies on AGT as a reference for proposal review and approval. Recognized by the World Bank, AGT is an innovative and cost-effective use of ICT applications that enhances transparency.

In implementing Farm-to-Market Road (FMR) subprojects, at the onset of the proposal the GGU together with the LGU will create the Road Influence Area (RIA) using the methodology and guidelines established by the Project through the Economics Unit. These guidelines are crucial in evaluating the economic viability of proposed road projects. The GGU ensures that the guidelines are applied to subproject proposals while considering site-specific factors and exemptions.

The Geomapping and Governance Unit (GGU) plays a critical role as a member of the project's multi-disciplinary team led by the IBUILD component. Their responsibilities include reviewing sub-project appraisals and issuing "No Objection Letters (NOL)" as supporting documents for the Project. During the implementation phase, the GGU actively participates in joint inspections for progress billing of infrastructure subprojects and serves as signatories for issuing "Statement of Work & Accomplishments (SWA)" and "AGT Certificates" as required.

During the Rapid Appraisal of Emerging Benefits (RAEB) led by the MEL unit, the GGU collects geospatial data using the AGT and GIS tools to support the RAEB process. The GGU then analyzes the data and prepares map outputs in a presentation-ready format. These outputs are shared with the RAEB Team before the activity to provide visual presentations. The GGU also forwards the results of the initial farmer profiling household survey to the Economics Unit as an Excel file, making it easier for them to process and merge the data.

During the Operations and Maintenance Audit activity led by IBUILD, the GGU will provide assistance in data collection using the KoBoToolBox and the ODK Collect app for Android phones. The GGU will also support data visualization by utilizing the established reporting and dashboard for the OMAS results of subprojects. This collaboration aims to enhance the efficiency and effectiveness of the audit process, ensuring accurate data collection and meaningful visualization of the audit results.

The GGU also provides support to IREAP operations by assisting in the utilization of the AGT and mapping of proposed enterprises. This includes identifying the source locations of raw materials, animal stocks, and machinery users using the project's geomapping portal. Geotagging is also utilized as a monitoring tool for tracking the delivery of goods or items procured by the implementing proponent. Similarly, IREAP personnel utilize geotagging as a tool when monitoring the enterprise subprojects.

The unit also promotes collaboration and technology sharing by conducting training on the Project's geomapping tools such as Applied Geotagging Technology (AGT), Geographic Information System (GIS), eVSA, and others. These trainings are specifically designed for partner LGUs, contractors, implementing proponents, PRDP personnel and other stakeholders involved in the Project. The primary objective is to equip them with the essential skills and knowledge needed to proficiently utilize these tools for efficient project implementation and informed decision-making processes.

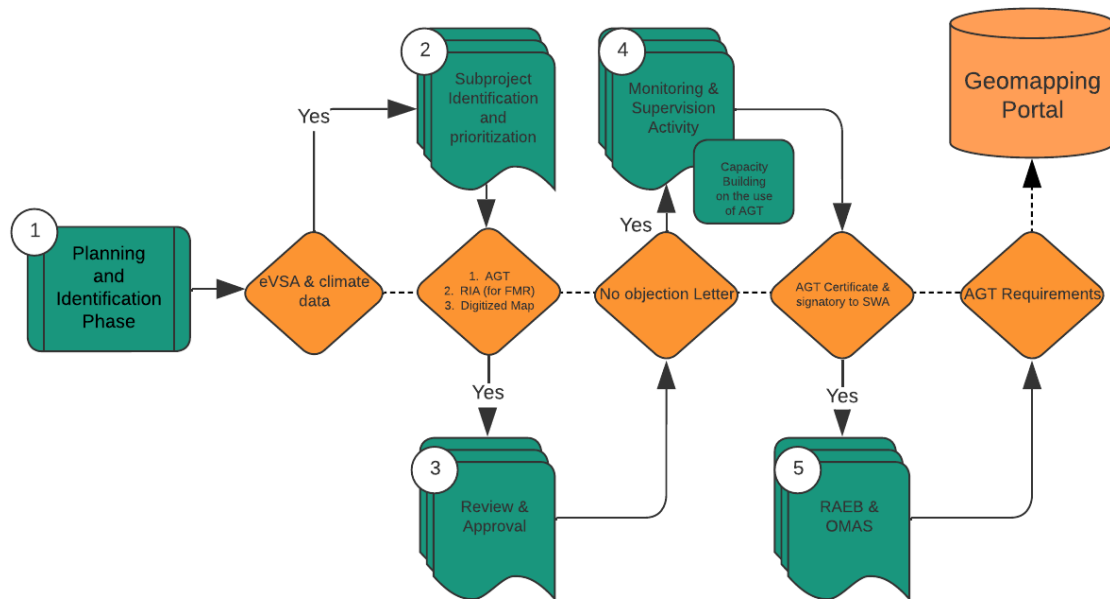


Figure 1: Process Flow of GGU Activities at subproject level

### Support to Project Management Level Activities

The Geomapping and Governance Unit (GGU) of the NPCO plays a vital role in providing support at the Project Management Level through digital solutions and online platform development. The unit is responsible for digitizing and automating individual performance outputs through the IPEP-ARS system. Additionally, established the virtual Implementation Support Mission platform. Currently, the GGU manages these platforms and will eventually hand them over to the intended end-users.

To ensure effective coordination and facilitation, the GGU assigns focal persons in each Project Support Office (PSO) and Regional Project Office (RPCO). These focal persons serve as coordinators, providing technical assistance and updating project statuses in their respective regions. The collaboration between the GGU, PSO, and RPCO promotes seamless communication and implementation of digital platforms.

### III. Standardized Processes and Procedures: Use of Digital Tools Developed and Adapted by the GGU

To effectively perform its functions and activities within the Project, the Geo-mapping and Governance Unit (GGU) utilizes the following tools and technologies:

#### 1. Applied Geotagging Technology (AGT) and GeoVideo & Unmanned Aerial Vehicle (Drone)

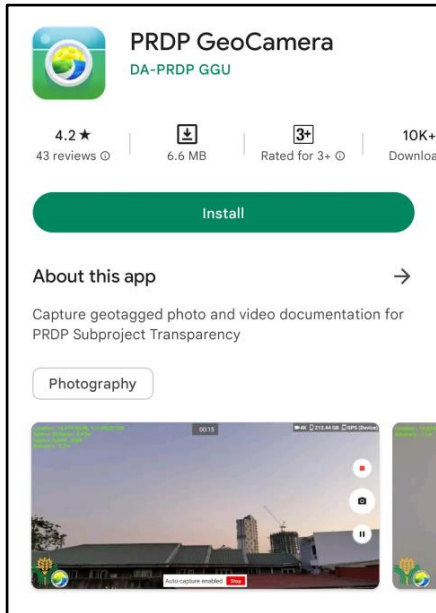
The AGT is a powerful technology that enhances transparency and monitoring of projects. It combines geospatial technologies like GIS, GPS, and Geo-tagging to associate digital resources with specific locations. The AGT allows stakeholders to remotely monitor subproject progress, visualize their impact, and assess the overall developmental impact in terms of access, links, and influence areas.

The GGU has developed a customized geo-tagging camera mobile app that ensures the digital security and veracity of captured information. This app can be downloaded from platforms like Google Play Store or Huawei AppGallery. It incorporates the latest ICT trends and features, such as video tagging and navigational maps, to enhance data collection and monitoring capabilities. See Figure 2: Installation of PRDP GeoCamera App through Google Play Store

Complementing the AGT, GGU has expanded the usability of the geo-mapping system through the utilization of the unmanned aerial vehicle or UAV. The UAV delivers an aerial perspective of understanding the interventions. The facility is maneuvered to fly along the entire stretch or coverage of the subproject to capture an aerial view of the condition, production area, and community during validation and actual implementation. It also previews the actual operations of the subprojects once completed and operational. See Figure 3: Eligibility Requirement for Remotely Piloted Aircraft System (RPAS) Pilot



The ongoing development of the Geomapping Portal provides a centralized platform for accessing detailed features, guidelines, and procedures related to geotagging and project monitoring. The portal serves as a valuable resource for project stakeholders to effectively utilize the tools and technologies employed by the GGU.



Installation Instruction for Android Smartphone:

1. Open the Google Play Store or Huawei App Gallery.
2. Search for "PRDP GeoCamera."
3. Tap on "install" and wait for the installation to finish.
4. Open PRDP GeoCamera.
5. Grant the necessary permissions for camera, location, and storage.

For additional information, refer to *Annex 1: [PRDP GeoCamera Users' Guide](#)*.

Figure 2: Installation of PRDP GeoCamera App through Google Play Store

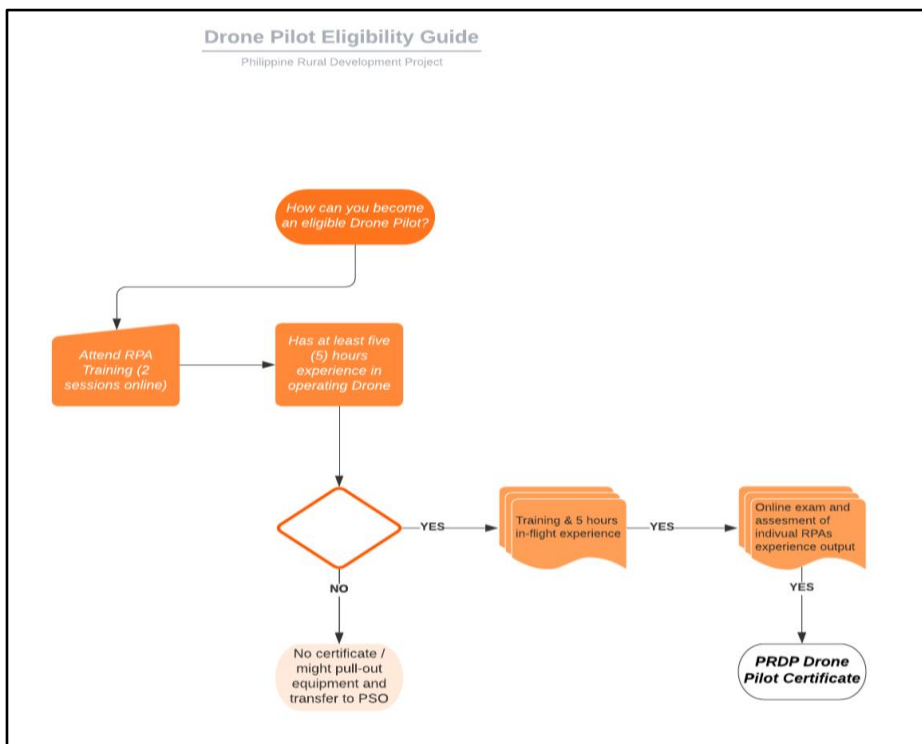


Figure 3: Eligibility Requirement for Remotely Piloted Aircraft System (RPAS) Pilot Guide

For additional information, refer to [Annex 2: Drone Pilot Eligibility Guide](#)

## 2. Expanded Vulnerability and Suitability Assessment

The Vulnerability and Suitability Assessment (VSA) is a scientific tool developed by the Department of Agriculture - Bureau of Soils and Water Management (DA-BSWM). It serves as a guide to evaluating the vulnerability and suitability of specific areas, which can significantly impact the production of particular agricultural commodities. By employing the VSA, municipalities can be ranked, and optimal locations for cultivating specific crops can be identified.

The Expanded VSA (eVSA) takes the VSA a step further. It is a Geographic Information System (GIS)-based tool that considers the combined analysis of vulnerability, suitability, and socio-economic conditions of a given area. The integration of these factors enables a more comprehensive assessment, aiding in the targeted deployment of interventions and the formulation of strategies that enhance climate resilience in agricultural production and investments. eVSA plays a crucial role in the Value Chain Analysis (VCA) within the Philippine Rural Development Project (PRDP). VCA helps determine whether priority agricultural commodities are part of a viable value chain suitable for investment.

One of the key techniques employed in conjunction with eVSA is geo-mapping. Geomapping is a spatial mapping method that translates geographic data, such as agricultural patterns, crop production, and land suitability, into an interactive visual map accessible online. This tool assists in the identification, targeting, and prioritization of development interventions. By leveraging geo-mapping capabilities, decision-makers gain valuable insights into the geographical distribution of agricultural resources and can effectively allocate resources to areas with the highest potential for development and productivity.

eVSA, with its analytical capabilities and integration of spatial mapping techniques, empowers agricultural planners and stakeholders to make informed decisions and optimize resource allocation for sustainable agricultural development. By accurately assessing vulnerability, suitability, and socio-economic factors, eVSA facilitates resilient agricultural practices and enhances the overall productivity and competitiveness of the agricultural sector.

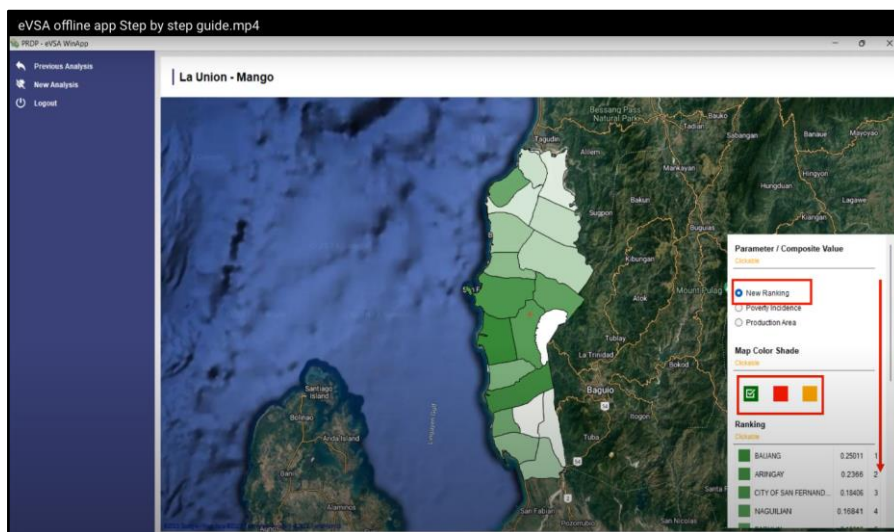


Figure 4: eVSA Offline Interface

For additional information, refer to [Annex 3: eVSA Users' Guide](#)

## 3. Planners' Portal

The Development of the Planners' Portal has emerged as a significant advancement in the realm of plan formulation and updating processes, driven by the utilization of technology. This innovative platform has been collaboratively developed in partnership with the I-PLAN, aiming to enhance the efficiency of IPLAN's enhanced operations manual roll-out processes.

At its core, the Planners' Portal serves as a comprehensive hub for data storage, visualization, and report generation, catering specifically to the needs of planners. It consolidates and presents crucial information such as the results and maps derived from Decision Support Tools (DSTs), climate data, and other relevant datasets. By providing planners with easy access to these resources, the portal facilitates informed decision-making and fosters efficient planning strategies.

Additionally, the Planners' Portal exhibits potential as an e-learning platform, specifically focusing on commodity investment planning. This web-based platform is designed to support planners in their endeavors by offering a wide range of valuable features. These include access to diverse datasets encompassing climate information, poverty statistics, soil types, suitability indices, and more. Furthermore, the portal provides ready-to-use templates and additional information to aid in the preparation or updating of PCIPs (Provincial Commodity Investment Plans).

The Planners can be accessible at <https://www.daprdp-plannersportal.net/>, see Figure 5.



Figure 5: Planners Portal Users' Interface

For additional information, refer to *Annex 4: [Planners' Portal User Guide](#)*

#### 4. Road Influence Area

The Road Influence Area (RIA), also referred to as the zone of influence, represents the geographical area that is expected to be impacted by a new or rehabilitated road project. It serves as a boundary that defines the location of beneficiaries and outlines the direct and indirect effects of the project. The RIA analysis also identifies potential spillover effects that may occur beyond the immediate project area (citations: World Bank, 2005; Van de Walle, 2008; Morgan, 2013; Jerve, 2013).

Performing an RIA analysis offers several advantages, including

1. **Rich information generation.** The analysis provides a comprehensive data set that includes socio-demographic profiles of the population in the area, geographical features like topography, and existing road networks. This information helps in understanding the context and characteristics of the project area.
2. **Support for project planning and policy-making.** The RIA analysis assists in making informed decisions during project planning and policy formulation. By identifying the areas influenced by the road project, stakeholders can better allocate resources, prioritize development initiatives, and design appropriate interventions.
3. **Ex-ante economic analysis.** The RIA analysis enables an economic evaluation of the road project before its implementation. It helps assess the potential benefits and costs associated with the project, including the anticipated impacts on the local



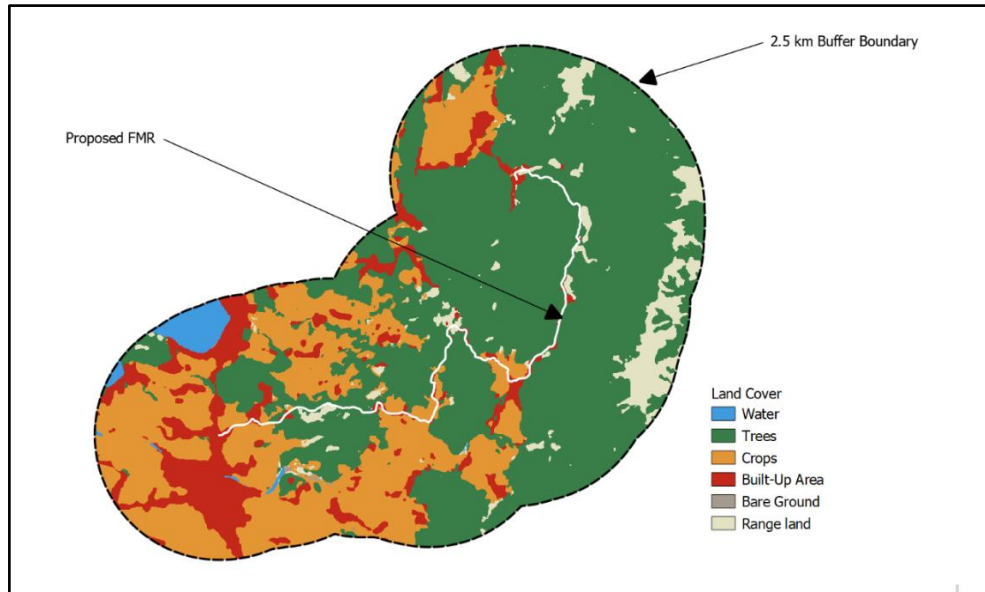


Figure 7. The generated output of one of the FMRs subjected to Remote Sensing Technology

For additional information, refer to *Annex 6: [Remote Sensing Users' Guide](#)*

## 6. Rapid Appraisal of Emerging Benefits (RAEB)

During the Rapid Appraisal of Emerging Benefits (RAEB) activity led by the Monitoring & Evaluation (MEL) Unit for completed subprojects, the Applied Geotagging Tool (AGT) will be used to ensure that the targeted respondents are within the Road Influence Area (RIA) for Farm-to-Market Roads. Geospatial data collected will support the integrity of Household survey data obtained during the RAEB.

For field validation and geospatial data collection, a group of spatial enumerators from the Geomapping and Governance Unit will be deployed. They will use the Applied Geotagging Android Camera App developed by the PRDP. The enumerators will assign a team leader to consolidate and post-process the collected geospatial data from Household Surveys, Key Informant Interviews (KII), and Focus Group Discussions (FGD).

For Farm-to-Market Roads, the PRDP evaluates outcomes such as increased agricultural area, road usage, and travel time. Geospatial enumerators ensure respondents are within the RIA, and they geotag and GPS-track respondent households, and commodity areas, and note any positive or negative observations.

The maps generated from the RAEB will provide a visual perspective on how respondents utilize PRDP interventions from their households, farms, and accessibility to markets or enterprise interventions. Additionally, geographical data collected from KIIs and FGDs will be used for comparison mapping, and analyzing the planning stage data against data after the subproject's establishment.



Figure 8. Application of AGT to RAEB



For additional information, refer to *Annex 7: [Application of AGT to RAEB](#)*

## 7. KoboToolBox and ODK Collect for Android Phone

The World Bank's Geo-Enabling Initiative for Monitoring and Supervision (GEMS) has been implemented to improve monitoring and evaluation (M&E) of project implementation, progress, and challenges, including tracking environmental and social risks through the Environmental and Social Framework (ESF). This system is rolled out globally through training provided to government counterparts, focusing on using field-appropriate, cost-effective, and open-source technology for real-time data collection and analysis.

Following successful training conducted by the World Bank for the DA-PRDP and other National Government Agencies, the PRDP has adopted the use of KoBoToolBox and the ODK Collect app for Android phones, led by the GGU. These tools are utilized in various data collection activities, including the Operations and Maintenance Audit System (OMAS), Enterprise Assessment Tool (EAT), Social and Environmental Safeguards (SES) checklist compliance, and the recent PSO-Mindanao RAEB activity.

The GGU has embraced the Open Data Kit (ODK) tools, particularly Kobo Collect, for data collection, enabling a smooth transition from traditional pen-and-paper methods to digital data acquisition. This innovative approach has revolutionized the data collection process, ensuring accuracy, timeliness, and standardization. The integration of data dashboards and analytics has further enhanced data analysis and visualization, empowering stakeholders with actionable insights.

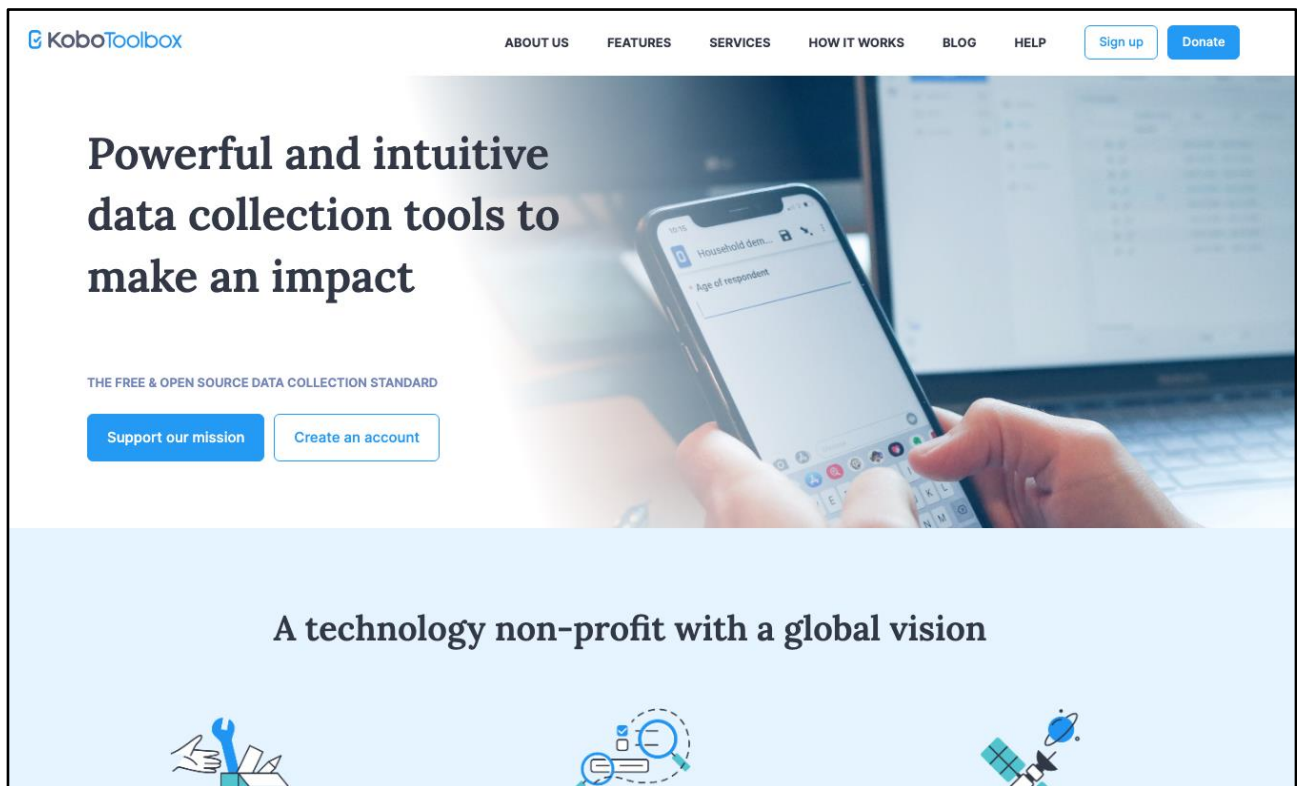


Figure 9. KoboToolBox Users' Interface

For additional information, refer to *Annex 8: [KoboToolBox Users' Guide](#)*

## 8. Big Data and Data Analytics

The Geomapping and Governance Unit is engaged in processing and analyzing large volumes of data related to geotagging, barangay and municipal boundaries, land suitability, and other geospatial information. This includes data specific to the agriculture sector, such as Farm-to-Market Road (FMR) infrastructure and enterprise support. The unit has established data management practices to handle this vast amount of data effectively.

To meet the project's requirements, the unit has customized data processing and visualization methods. Dashboards and visualization tools are utilized to present the information in a meaningful and easily understandable format. For example, the unit has developed Farm-to-Market Road Dashboards and results of remote sensing classification output for visualization purposes.

In addition to the existing datasets, the unit is collaborating with the Department of Agriculture's Information and Communication Technology Service (DA-ICTS), other DA operating units and stakeholders to potentially access data from the Registry System for Basic Sectors in Agriculture (RSBSA). This additional dataset will help determine the extent of subproject reach in terms of registered farmers and fisherfolk within the sector.

By utilizing big data and analytics techniques through ICT tools, the Geo-mapping and Governance Unit aims to transform the massive datasets they possess into actionable insights. These insights will support decision-making processes within the management of the project.

### 9. Individual Performance Evaluation Profile and Accomplishment Reporting System (iPEP-ARS)

The DA-PRDP iPEP-ARS (Individual Performance Evaluation Profile and Accomplishment Reporting System) is an in-house developed web-based work management system designed to streamline the management of PEP documents and track workforce productivity in line with management objectives. This system aims to digitize and automate various processes involved in PEP preparation, target and timeline setting, submission, monitoring, evaluation, and accomplishment reporting.

The primary objective of the DA-PRDP iPEP-ARS is to digitize and automate the management of PEP documents and accomplish accurate tracking of workforce productivity. By doing so, it ensures that the management objectives are met effectively and efficiently. The system provides functionality for the following:

1. The iPEP-ARS enables users to create, manage, and update PEP documents. It digitizes the process, eliminating the need for manual paperwork and facilitating efficient document management.
2. Users can set specific targets and timelines for deliverables within the PEP. This feature ensures clear expectations and facilitates effective tracking of progress.
3. The system provides a platform for users to submit completed PEP documents. It streamlines the submission process, making it convenient and eliminating the need for physical copies.
4. The iPEP-ARS enables monitoring and evaluation of individual outputs and performance. It provides tools and features for principals to review progress, provide feedback, and assess performance against targets.
5. The system links accomplishment reporting to the approved PEP. It automates scoring based on predefined criteria and generates reports, providing a comprehensive view of individual achievements.

The DA-PRDP iPEP-ARS aligns with Clockify's definition of a good work management system. It provides principals with valuable insights into the workforce, allowing them to have a comprehensive understanding of individual performance and make informed decisions to improve overall productivity. With the iPEP-ARS, principals can effectively plan work by utilizing tools to set targets, define timelines, and allocate resources in an efficient and aligned manner. The system also supports principals in managing employee time through a centralized platform for tracking and monitoring individual activities, enabling optimized schedules and resource utilization. By automating processes, eliminating paperwork, and reducing manual effort, the system enhances efficiency and enables users to focus on value-added activities, leading to increased productivity.

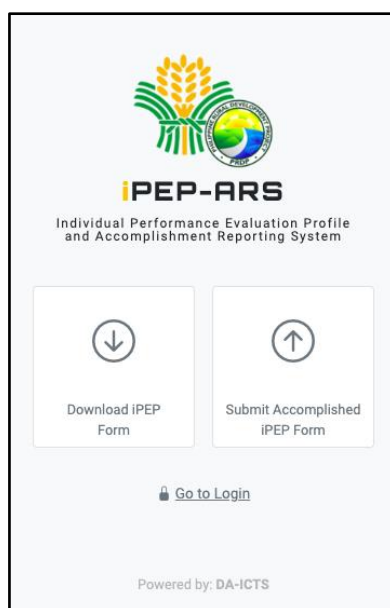


Figure 10. IPEP-ARS Log-in Interface

For additional information, refer to *Annex 9: [iPEP-ARS User's Manual](#)*

## 10. Virtual Field Visits

The restrictions on physical visits and the inability to travel posed a major challenge to conducting on-site inspections and assessments during the challenging time of pandemic. However, the project adapted swiftly and turned to virtual site visits as a crucial ICT solution.

The PRDP virtual site visit, implemented by the Geo Mapping and Governance Unit (GGU), offers key features that enhance user experience and provide valuable information. It is designed to be interactive and easy to navigate, allowing users to explore project sites effortlessly. The system is responsive across different ICT devices, ensuring accessibility without requiring high-performance hardware. With its compact visual information, including satellite imagery, georeferenced photos, videos, and drone footage, the virtual site visit replicates the experience of a walkthrough, drive-through, and aerial view. It also meets specific requirements for the enhanced Geo-mapping System, enabling virtual site visits, geotagged photos, geo videos, drone footages/mapping, creating polygons for commodity areas, and adding layers of information from various sources. The system's sustainability is ensured through easy maintenance, customization, and potential handover to the DA-ICTS for long-term support. Overall, the PRDP virtual site visit system offers a comprehensive and user-friendly platform for remotely exploring project sites and accessing relevant geospatial data.

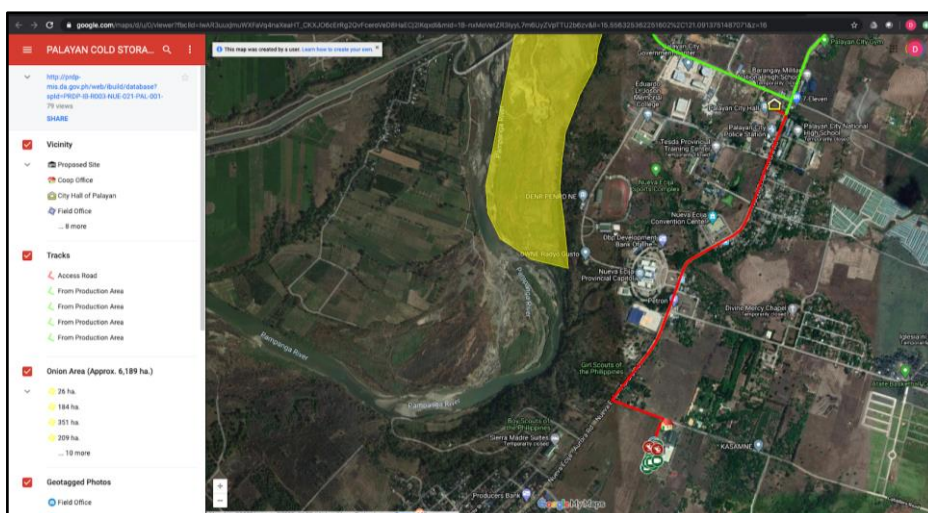


Figure 11. Virtual Site Visit Platform

For additional information, refer to *Annex 10: [Guidelines in preparation Virtual Field Visits](#)*

## 11. Potential use of Artificial Intelligence (AI) in the Project.

The unit has also been exploring the use of machine learning and artificial intelligence as a potential project management tool. This involves leveraging advanced technologies to enhance project management capabilities at a higher level. By utilizing machine learning and artificial intelligence, the unit aims to improve decision-making processes, automate repetitive tasks, analyze complex data, and optimize resource allocation. This exploration reflects the unit's commitment to adopting innovative solutions to further enhance the effectiveness and efficiency of project management within the organization.

## IV. Guidelines for Effective Use of Applied Geotagging Technology

During the identification and implementation of subprojects in the PRDP, the GGU, and stakeholders utilize the Applied Geotagging Technology (AGT) as a monitoring and supervision tool. To enhance its functionality, the unit has developed a GeoCamera App with video tagging and offline maps. This app keeps up with the latest ICT trends and facilitates the capturing of detailed specifications of subprojects. Additionally, the GGU is currently working on the development of the Geomapping Portal. This portal allows stakeholders involved in data acquisition to contribute to the spatial information database and create customized maps of subprojects.



This section of the manual outlines important guidelines for geotagging activities within the PRDP. It specifies who should be responsible for performing geotagging, what items should be geotagged, and the recommended frequency of geotagging activities. These guidelines play a crucial role in supporting the monitoring and supervision of subprojects in the I-BUILD and I-REAP components of the PRDP. By following these guidelines, project stakeholders can ensure accurate and timely capturing of geospatial information, enabling effective project monitoring and supervision.

### A. Rural Infrastructure Subproject: Geotagging Activity

#### Enabling Guidelines

PRDP Invitation to Bid, Section 5, paragraph 3 - “The DA, however, requires that all potential contractors who will be awarded contract under the project shall have undergone geotagging training provided by the PRDP Project Support Office.”.

Section V. Special Conditions of Contract - GCC Clause 41.5 - “The Contractor is obliged to submit to the Procuring Entity’s Representatives the geotagged photos taken before, during and after construction of each item of work especially the embedded items at the time that the claim for payment is made and the Statement of Work Accomplished (SWA) is executed.”

**Table 1:** Matrix of geotagging activities of the different subproject types by implementation stage

SP Type	Implementation Stage			
	Subproject Identification and Prioritization	Appraisal Review, and Approval	Subproject Implementation / Completion	Operations and Maintenance
Farm to Market Road (FMR)	<p><b>Responsible Personnel:</b> Local Government Unit (LGU) with the assistance of GGU, IBUILD, ECON, and SES</p> <p><b>Frequency:</b> only once</p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <ol style="list-style-type: none"> <li>1. Geotag Photos of Municipal Hall and Surroundings               <ol style="list-style-type: none"> <li>a. Stand in front of the Municipal Hall or desired location to capture a photo.</li> <li>b. Use the PRDP-Geocamera app on your device to take a photo of the Municipal Hall or surroundings.</li> <li>c. Label the activity with an appropriate name for easy identification.</li> <li>d. The app will automatically geotag the photo with the location information.</li> </ol> </li> <li>2. Geotag Photos of FMR               <ol style="list-style-type: none"> <li>a. Before traveling the FMR route, open the PRDPGeocamera app on your device.</li> </ol> </li> </ol>	<p><b>Responsible Personnel:</b> SPAR (Sub-Project Appraisal and Review) Team members</p> <p><b>Frequency:</b> only once</p> <p><b>Data Visualization:</b> Virtual Site Visits</p> <ol style="list-style-type: none"> <li>1. Access the Geo-mapping Portal:               <ol style="list-style-type: none"> <li>a. Prior to the SP appraisal activity, the appraisal team members are encouraged to access their respective accounts on the Geo-mapping Portal.</li> <li>b. Use the provided credentials to log in to the Geo-mapping Portal.</li> </ol> </li> <li>2. View and Inspect the Proposed FMR:               <ol style="list-style-type: none"> <li>a. Once logged in, navigate to the relevant Sub-Project (SP) associated with the proposed FMR.</li> <li>b. Utilize the available tools and features within the Geomapping Portal to view and inspect the proposed FMR.</li> <li>c. Zoom in/out, pan, and virtually explore the FMR route and its surroundings.</li> </ol> </li> </ol>	<p><b>Responsible Personnel:</b> Contractor (based on Special Condition of Contract 41.5) &amp; LGU</p> <p><b>Frequency:</b> Geotag every construction or installation activity for each item specified in the contract.</p> <p><i>Note: All potential contractors who will be awarded contracts under the project must have completed geotagging training conducted by the PRDP Project Support Office. This requirement ensures that contractors possess the necessary skills and knowledge in geotagging, aligning with the project's standards and objectives. - Section 1 Invitation to Bid</i></p> <p><b>Data Acquisition:</b> What items should be geotagged?</p>	<p><b>Responsible Personnel:</b> ROMAT Team</p> <p><b>Frequency:</b> Once a year after completion for 10 years</p> <p><i>Note: All ROMAT members will undergo training and workshop on OMAS to be conducted by the PRDP.</i></p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <ul style="list-style-type: none"> <li>• Geotag photos of FMR segments at intervals of 100 meters to document their condition and track any changes or</li> </ul>

SP Type	Implementation Stage			
	Subproject Identification and Prioritization	Appraisal Review, and Approval	Subproject Implementation / Completion	Operations and Maintenance
	<ul style="list-style-type: none"> <li>b. Label the activity with an appropriate name for easy identification.</li> <li>c. Set the interval for capturing photos to 50 meters within the app's settings.</li> <li>d. The app will automatically capture photos at the specified interval along the FMR route.</li> <li>e. Each photo captured by the PRDP Geocamera app will be automatically geotagged.</li> <li>f. The app will save the geotagged photos in the internal or external folder of the mobile phone.</li> </ul> <p>3. Geotag Photos of existing FMR structures and Social &amp; Environmental Safeguards</p> <ul style="list-style-type: none"> <li>a. After capturing photos at a 50-meter interval along the FMR route, go back to the route to manually capture photos of the existing structures such as cross drains, line canals, slope protection, and others.</li> <li>b. While conducting the geotagging of existing structures also capture photos of households and other human-made structures that will be affected during the construction of the FMR.</li> <li>c. Additionally, capture photos of the natural environment that will be affected by the FMR, such as rivers, trees, and other relevant features.</li> </ul> <p>4. Geotag Photos of Commodity Locations and Production Areas</p> <ul style="list-style-type: none"> <li>a. Identify the commodity locations and production areas you wish to capture.</li> </ul>	<ul style="list-style-type: none"> <li>d. Take note of any observations, comments, or initial reviews regarding the proposed FMR.</li> </ul> <p>3. Comment and Provide Feedback:</p> <ul style="list-style-type: none"> <li>a. Within the Geo-mapping Portal, the appraisal team members can engage in discussions and exchange comments and provide feedback regarding the proposed FMR.</li> <li>b. Use the communication features of the Geomapping Platform to share comments and feedback within the appraisal team members or involve the LGU if required.</li> <li>c. Respectfully discuss and address any concerns, suggestions, or improvements related to the proposed FMR.</li> <li>d. Collaborate with other appraisal team members and stakeholders to ensure comprehensive and constructive feedback.</li> </ul> <p>4. Document and Record:</p> <ul style="list-style-type: none"> <li>a. Appraisal team members should document their observations, comments, and reviews regarding the proposed FMR.</li> <li>b. Maintain a record of the discussions and exchanges on the Geo-mapping Platform for future reference and documentation purposes.</li> <li>c. Consolidate the feedback and comments received during the virtual site visits to facilitate further analysis and decision-making.</li> </ul> <p><i>Note: Virtual site visits through the Geomapping Portal provide the appraisal team members with the opportunity to remotely inspect and review the proposed FMR. By leveraging the communication features of the platform, the team can collaborate and provide valuable feedback, ensuring a comprehensive appraisal process.</i></p> <p><b>Data Acquisition:</b> What items should be geotagged?</p>	<ul style="list-style-type: none"> <li>1. Geotag photos of contracted activities as specified in the contract, including but not limited to earthwork, subbase &amp; course, surface course, and <u>others</u>.</li> <li>2. Geotag photos of quarry sites associated with the project. This can include the extraction areas, stockpiles, machinery, equipment, access roads, and any other significant elements that contribute to the overall quarry operations.</li> <li>3. Geotagging photos of quality testing activities such as the Field Density Test (FDT), and cylindrical and flexural moldings conducted <ul style="list-style-type: none"> <li>a. Capture photos that showcase the testing equipment, including the FDT apparatus, cylindrical molds, flexural molds, and any other relevant equipment used in the testing process.</li> <li>b. Capture photos of the testing procedures being carried out. This can involve capturing photos of the sample preparation, placement of molds, compaction process, equipment calibration, and any other essential steps involved in the testing activities.</li> </ul> </li> </ul>	<p>improvements over time.</p> <ul style="list-style-type: none"> <li>● Geotag photos of special structures such as cross drains, PCCP (Portland Cement Concrete Pavement), box culverts, line canals, slope protection structures, etc. This provides a detailed location reference for these structures and aids in monitoring their condition and maintenance needs.</li> <li>● Geotag photos related to any OMAS concerns, such as the physical &amp; functionality status of facilities and structures. This helps in documenting and monitoring any repairs or improvements conducted on the identified elements.</li> </ul>

SP Type	Implementation Stage			
	Subproject Identification and Prioritization	Appraisal Review, and Approval	Subproject Implementation / Completion	Operations and Maintenance
	<ul style="list-style-type: none"> <li>b. Open the PRDPGeocamera app on your device.</li> <li>c. Label the activity with an appropriate name for easy identification.</li> <li>d. Start walking or moving within the chosen areas.</li> <li>e. At regular intervals, manually capture photos of the commodity locations and production areas using the PRDPGeocamera app.</li> <li>f. Each time you capture a photo, the app will automatically geotag it with the location information.</li> </ul> <p>5. GeoVideo Capture using <i>DAPRDP Geocamera App</i></p> <ul style="list-style-type: none"> <li>a. Utilize the GeoVideo feature of the DAPRDP Geocamera App to capture a drive-thru video of the FMR (Farm-to-Market Road).</li> <li>b. While driving along the FMR route, open the DAPRDP Geocamera App and access the GeoVideo feature.</li> <li>c. Start recording the video as you drive through the FMR, ensuring the camera captures the road condition, surroundings, and any notable features.</li> <li>d. Continue recording until you have covered the desired length of the FMR route.</li> <li>e. Save the GeoVideo file within the app for further analysis and documentation.</li> </ul> <p><i>Remember to adhere to local regulations, respect private property, and ensure your safety while carrying out these activities.</i></p> <p><b>Post Processing</b></p>	<ul style="list-style-type: none"> <li>a. During the site visits, appraisal team members will use the PRDP-Geocamera app to take photos or videos to document their concern/s for the proposed FMR</li> </ul> <p><i>Drone Capture for FMR and Commodity Areas (For the GGU)</i></p> <ul style="list-style-type: none"> <li>b. Employ a drone to capture aerial footage of a segment of the proposed FMR and commodity areas.</li> <li>c. Plan the drone flight by considering safety regulations, weather conditions, and obtaining necessary permits or permissions.</li> <li>d. Fly the drone along the designated segment of the proposed FMR, capturing high-resolution video or photos to showcase the road alignment, existing structures, and surrounding terrain.</li> <li>e. Similarly, fly the drone over the commodity areas to capture detailed footage of the production areas, natural environment, and any relevant features.</li> <li>f. Ensure the captured footage provides a comprehensive view and supports the information gathered from the geotag photos.</li> <li>g. Safely land the drone and secure the captured footage for further processing and analysis.</li> </ul> <p><b>Post Processing</b></p> <ul style="list-style-type: none"> <li>a. Upload Geotag Photos or Videos to the Geomapping Portal of the DA-PRDP using the respective account of each appraisal team member or request the GGU to upload it to the Portal.</li> </ul>	<ul style="list-style-type: none"> <li>c. If possible, geotag photos that display the results of the tests, such as field density measurements, cylindrical or flexural strength values, and any notable observations made during the testing process.</li> </ul> <p><b>Post Processing</b></p> <p>The submission process for the geotagged photos is as follows:</p> <ul style="list-style-type: none"> <li>a. The Contractor is required to submit the geotagged photos in a digital format.</li> <li>b. The Contractor should submit the photos through the online Geo-mapping Portal using their credentials or submit to the proponent LGU responsible for overseeing the subproject.</li> <li>c. It is crucial to ensure that the geotagged photos are clear and provide a comprehensive visual representation of the equipment, progress, and activities at the project site. This enables effective documentation and monitoring of the project's status</li> </ul>	

SP Type	Implementation Stage			
	Subproject Identification and Prioritization	Appraisal Review, and Approval	Subproject Implementation / Completion	Operations and Maintenance
	<p>1. Upload Geotag Photos or Videos to the Geomapping Portal of the DA-PRDP</p> <ol style="list-style-type: none"> <li>a. Access the Geomapping Portal of the DA-PRDP using your respective account credentials.</li> <li>b. Select the specific Sub-Project (SP) assigned to you or create a new SP corresponding to your geographical area of responsibility.</li> <li>c. Upload geotag photos or videos into respective folders: Geotag Photos of Municipal Hall and Surroundings, Geotag Photos of FMR (50 meters interval), Geotag Photos of existing FMR structures and Social &amp; Environmental Safeguards, Geotag Photos of Commodity Locations and Production Areas.</li> <li>d. You may include a label or annotation of geotag photos or videos for additional information.</li> </ol> <p>2. Create a Polyline of the FMR</p> <ol style="list-style-type: none"> <li>a. Use the Geo-mapping tools available in the Geomapping Portal of the DA-PRDP.</li> <li>b. Utilize the available tools in the portal to create a polyline that represents the proposed road.</li> <li>c. Start from the starting point of the road and continue drawing the polyline until reaching the endpoint.</li> <li>d. Ensure the polyline accurately reflects the route and alignment of the proposed road.</li> <li>e. You may also opt to upload polyline in kml file format for the proposed road.</li> </ol>		<p>and accomplishments.</p> <p>By adhering to this submission process, the Contractor contributes to efficient documentation and monitoring of the project's progress, allowing for better transparency, accountability, and decision-making throughout the subproject lifecycle.</p> <p><b>For PRDP JIT Visits:</b></p> <p><i>Data Acquisition:</i> What items should be geotagged?</p> <ol style="list-style-type: none"> <li>a. During the site visits, JIT members will use the PRDP-Geocamera app to take photos or videos to document their concern/s for the proposed FMR</li> <li>b. The GGU is a signatory for the SWA document and will provide an AGT certificate to support billing requests.</li> </ol> <p><b>For completion of SP the contractor shall submit either to the geomapping portal or LGU:</b></p> <ul style="list-style-type: none"> <li>• Geotag Photos at 50-meter interval along the completed FMR subproject including constructed or installed structures such as cross drains, line canals, slope protection, and others</li> </ul> <p><i>For GGU</i></p>	

SP Type	Implementation Stage			
	Subproject Identification and Prioritization	Appraisal Review, and Approval	Subproject Implementation / Completion	Operations and Maintenance
	<p>f. Save file once accomplished</p> <p>3. Create the RIA (Rural Infrastructure Component) using PRDP guidelines</p> <p>a. Refer to the established guidelines of the PRDP for creating the RIA.</p> <p>b. Within the Geo-mapping Portal, navigate to the SP related to the project.</p> <p>c. Create polygons representing the area of crops/ commodity, built-up areas, water tributaries, potential expansion areas, and among others.</p> <p>d. Ensure the polygons are correctly placed and labeled, adhering to their respective categories.</p> <p>e. You may also opt to upload polyline in kml file format for the proposed road.</p> <p>f. Save file once accomplished</p>		<ul style="list-style-type: none"> <li>● Capture a drive-thru geo-video of the completed FMR (Farm-to-Market Road)</li> <li>● Drone Capture for FMR and Commodity Areas (refer appraisal requirement)</li> <li>● The Unit is a signatory for the SWA document and will provide an AGT certificate to support billing requests.</li> </ul>	
Bridge	<p><b>Responsible Personnel:</b> Local Government Unit (LGU) with the assistance of GGU</p> <p><b>Frequency:</b> only once</p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <p>1. Geotag Photos of Municipal Hall and Surroundings (<i>refer procedure to FMR</i>)</p> <p>2. Geotag Photos of proposed location of bridge including the following:</p> <ul style="list-style-type: none"> <li>● Beginning approaches</li> <li>● Beginning pier</li> <li>● End pier</li> <li>● End approaches</li> </ul> <p>3. Geotag Photos of households and other human-made structures that will be potentially affected during the construction of the bridge.</p>	<p><b>Responsible Personnel:</b> SPAR Team</p> <p><b>Frequency:</b> only once</p> <p><b>Data Visualization:</b> Virtual Site Visits (<i>refer detailed procedure to FMR</i>)</p> <p>1. Access the Geomapping Portal to view and inspect the Proposed bridge. Take note of any observations, comments, or initial reviews regarding the proposed subproject.</p> <p>2. Comment and Provide Feedback</p> <p>3. Document and Record Findings</p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <p>1. During the site visits, appraisal team members use the PRDP-Geocamera app to take photos and videos to document their concern/s for the proposed bridge.</p> <p>2. Drone Capture of Bridge and Commodity Areas (<i>for the GGU-</i></p>	<p><b>Responsible Personnel:</b> Contractor (based on Special Condition of Contract 41.5) &amp; LGU</p> <p><b>Frequency:</b> Geotag every construction or installation activity for each item specified in the contract.</p> <p><i>Note: All potential contractors who will be awarded contracts under the project must have completed geotagging training conducted by the PRDP Project Support Office. This requirement ensures that contractors possess the necessary skills and knowledge in geotagging, aligning with the project's standards and objectives. - Section 1 Invitation to Bid</i></p>	<p><b>Responsible Personnel:</b> ROMAT Team</p> <p><b>Frequency:</b> Once a year after completion for 10 years</p> <p><i>Note: All ROMAT members will undergo training and workshop on OMAS to be conducted by the PRDP.</i></p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <ul style="list-style-type: none"> <li>● Geotag photos related to any OMAS concerns, such</li> </ul>

SP Type	Implementation Stage			
	Subproject Identification and Prioritization	Appraisal Review, and Approval	Subproject Implementation / Completion	Operations and Maintenance
	<p>4. Geotag Photos of the natural environment that will be affected by the bridge, such as rivers, trees, and other relevant features.</p> <p>5. Geotag Photos of Commodity Locations and Production Areas at least a sample of two hectares</p> <p><b>Post Processing</b></p> <p>Upload Geotag Photos to the Geomapping Portal of the DA-PRDP</p> <ol style="list-style-type: none"> <li>Access the Geomapping Portal of the DA-PRDP using your respective account credentials.</li> <li>Select the specific Sub-Project (SP) assigned to you or create a new SP corresponding to your geographical area of responsibility.</li> <li>Upload geotag photos into respective folders: Geotag Photos of Municipal Hall and Surroundings, Geotag Photos of Bridge, Geotag Photos of Social &amp; Environmental Safeguards, Geotag Photos of Commodity Locations and Production Areas.</li> <li>You may include a label or annotation of geotag photos or videos for additional information.</li> </ol>	<p><i>refer to FMR procedure)</i></p> <p><b>Post Processing</b></p> <ol style="list-style-type: none"> <li>Upload Geotag Photos or Videos to the Geomapping Portal of the DA-PRDP using the respective account of each appraisal team member or request the GGU to upload it to the Portal.</li> </ol>	<p><b>Data Acquisition:</b> What items should be geotagged?</p> <ol style="list-style-type: none"> <li>Geotag photos of contracted activities mentioned in the contract, including tasks like spreading, compaction, pouring, and more. Also, capture photos of upstream and downstream areas within a 200-meter range, along with bridge signage.</li> <li>Geotag photos of quarry sites associated with the project. This can include the extraction areas, stockpiles, machinery, equipment, access roads, and any other significant elements that contribute to the overall quarry operations.</li> <li>Geotagging photos of quality testing activities such as the Field Density Test (FDT), and cylindrical and flexural moldings conducted</li> </ol> <p><b>Post Processing (refer procedure of FMR)</b></p> <p><b>For PRDP JIT Visits:</b></p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <ol style="list-style-type: none"> <li>During the site visits, JIT members will use the PRDP-Geocamera app to take photos or videos to document their concern/s for the proposed FMR</li> <li>The GGU is a signatory for the SWA document and will provide an AGT certificate to support billing requests.</li> </ol>	<p>as the physical &amp; functionality status of facilities and structures. This helps in documenting and monitoring any repairs or improvements conducted on the identified elements.</p>

SP Type	Implementation Stage			
	Subproject Identification and Prioritization	Appraisal Review, and Approval	Subproject Implementation / Completion	Operations and Maintenance
			<p><b>For completion of SP the contractor shall submit either in the geomapping portal or to LGU:</b></p> <p>Geotag Photos of the constructed bridge specifically the following:</p> <ol style="list-style-type: none"> <li>1. Beginning approaches</li> <li>2. Beginning pier</li> <li>3. End pier</li> <li>4. End approaches</li> <li>5. Upstream and downstream at least 200 meters and bridge signage.</li> </ol> <p><i>For GGU</i></p> <ul style="list-style-type: none"> <li>• Capture a walk-thru geo-video of the completed bridge</li> <li>• Drone Capture for completed bridge and Commodity Areas (refer appraisal requirement)</li> </ul>	
Irrigation	<p><b>Responsible Personnel:</b> Local Government Unit (LGU) with the assistance of GGU</p> <p><b>Frequency:</b> <i>only once</i></p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <ol style="list-style-type: none"> <li>1. Geotag Photos of Municipal Hall and Surroundings (<i>refer procedure to FMR</i>)</li> <li>2. Geotag photos of the DAM and its structures.</li> <li>3. Geotag photos of main diversion canal, laterals, and sub-laterals including special structures for rehabilitation or construction.</li> <li>4. Geotag Photos of households and other human-made structures that will be potentially affected</li> </ol>	<p><b>Responsible Personnel:</b> SPAR Team</p> <p><b>Frequency:</b> <i>only once</i></p> <p><b>Data Visualization:</b> <i>Virtual Site Visits (refer detailed procedure to FMR)</i></p> <ol style="list-style-type: none"> <li>1. Access the Geomapping Portal to view and inspect the Proposed subproject. Take note of any observations, comments, or initial reviews regarding the proposed subproject.</li> <li>2. Comment and Provide Feedback</li> <li>3. Document and Record Findings</li> </ol> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <ol style="list-style-type: none"> <li>4. During the site visits, appraisal team</li> </ol>	<p><b>Responsible Personnel:</b> Contractor (based on Special Condition of Contract 41.5) &amp; LGU</p> <p><b>Frequency:</b> <i>Geotag every construction or installation activity for each item specified in the contract.</i></p> <p><i>Note: All potential contractors who will be awarded contracts under the project must have completed geotagging training conducted by the PRDP Project Support Office. This requirement ensures that contractors possess the necessary skills and knowledge in</i></p>	<p><b>Responsible Personnel:</b> ROMAT Team</p> <p><b>Frequency:</b> <i>Once a year after completion for 10 years</i></p> <p><i>Note: All ROMAT members will undergo training and workshop on OMAS to be conducted by the PRDP.</i></p> <p><b>Data Acquisition:</b> What items should be geotagged?</p>

SP Type	Implementation Stage			
	Subproject Identification and Prioritization	Appraisal Review, and Approval	Subproject Implementation / Completion	Operations and Maintenance
	<p>during the construction/ rehabilitation of the SP.</p> <p>5. Geotag Photos of the natural environment that will be affected by the SP, such as rivers, trees, and other relevant features.</p> <p>6. Geotag Photos of Commodity Locations and Production Areas at least a sample of two hectares</p> <p><b>Post Processing</b></p> <p>Upload Geotag Photos to the Geomapping Portal of the DA-PRDP</p> <ol style="list-style-type: none"> <li>Access the Geomapping Portal of the DA-PRDP using your respective account credentials.</li> <li>Select the specific Sub-Project (SP) assigned to you or create a new SP corresponding to your geographical area of responsibility.</li> <li>Upload geotag photos into respective folders: Geotag Photos of Municipal Hall and Surroundings, Geotag Photos of Irrigation, Geotag Photos of Social &amp; Environmental Safeguards, Geotag Photos of Commodity Locations and Production Areas.</li> <li>You may include a label or annotation of geotag photos or videos for additional information.</li> </ol>	<p>members use the PRDP-Geocamera app to take photos and videos to document their concern/s for the proposed irrigation.</p> <p>5. Drone Capture for Irrigation (select sample segment) and Commodity Areas (<i>procedure applies for GGU</i>)</p> <p><b>Post Processing</b></p> <ol style="list-style-type: none"> <li>Upload Geotag Photos or Videos to the Geomapping Portal of the DA-PRDP using the respective account of each appraisal team member or request the GGU to upload it to the Portal.</li> </ol>	<p><i>geotagging, aligning with the project's standards and objectives. - Section 1 Invitation to Bid</i></p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <ol style="list-style-type: none"> <li>Geotag photos of contracted activities mentioned in the contract, including tasks like spreading, compaction, pouring, and more. Additionally, capture photos of the construction of line canal, diversion works and Dam if applicable.</li> <li>Geotagging photos of quality testing activities such as the Field Density Test (FDT), and cylindrical and flexural moldings conducted.</li> </ol> <p><b>Post Processing (refer procedure of FMR)</b></p> <p><b>For PRDP JIT Visits:</b></p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <ol style="list-style-type: none"> <li>During the site visits, JIT members will use the PRDP-Geocamera app to take photos or videos to document their concern/s for the proposed FMR</li> <li>The GGU is a signatory for the SWA document and will provide an AGT certificate to support billing requests.</li> </ol> <p><b>For completion of SP the contractor shall submit either in the geomapping portal or to LGU:</b></p> <p>Geotag Photos of the constructed irrigation</p>	<p>Geotag photos related to any OMAS concerns, such as the physical &amp; functionality status of facilities and structures. This helps in documenting and monitoring any repairs or improvements conducted on the identified elements.</p>



SP Type	Implementation Stage			
	Subproject Identification and Prioritization	Appraisal Review, and Approval	Subproject Implementation / Completion	Operations and Maintenance
			specifically the following if applicable: <ul style="list-style-type: none"> <li>a. Dam</li> <li>b. Main Diversion Canal</li> <li>c. Geotag Photos of Commodity Locations and Production Areas at least a sample of two hectares</li> </ul>	
Potable Water Systems	<p><b>Responsible Personnel:</b> Local Government Unit (LGU) with the assistance of GGU</p> <p><b>Frequency:</b> only once</p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <ol style="list-style-type: none"> <li>1. Geotag Photos of Municipal Hall and Surroundings (<i>refer procedure to FMR</i>)</li> <li>2. Geotag photos of the PWS and its structures such as main source, spring box, intake box, main reservoir, main and secondary transmission line/pipe.</li> <li>3. Geotag Photos of households and other human-made structures that will be potentially affected during the construction/ rehabilitation of the SP.</li> <li>4. Geotag Photos of the natural environment that will be affected by the SP, such as rivers, trees, and other relevant features.</li> </ol>	<p><b>Responsible Personnel:</b> SPAR Team</p> <p><b>Frequency:</b> only once</p> <p><b>Data Visualization:</b> Virtual Site Visits (<i>refer detailed procedure to FMR</i>)</p> <ol style="list-style-type: none"> <li>1. Access the Geomapping Portal to view and inspect the Proposed subproject. Take note of any observations, comments, or initial reviews regarding the proposed subproject.</li> <li>2. Comment and Provide Feedback</li> <li>3. Document and Record Findings</li> </ol> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <ol style="list-style-type: none"> <li>a. During the site visits, appraisal team members use the PRDP-Geocamera app to take photos and videos to document their concern/s for the proposed irrigation.</li> <li>b. Drone Capture for PWS (select sample segments)</li> </ol> <p><b>Post Processing</b></p> <ol style="list-style-type: none"> <li>c. Upload Geotag Photos or Videos to the Geomapping Portal of the DA-PRDP using the respective account of each appraisal team member or request the GGU to upload it to the Portal.</li> </ol>	<p><b>Responsible Personnel:</b> Contractor (based on Special Condition of Contract 41.5) &amp; LGU</p> <p><b>Frequency:</b> Geotag every construction or installation activity for each item specified in the contract. <i>Note: All potential contractors who will be awarded contracts under the project must have completed geotagging training conducted by the PRDP Project Support Office. This requirement ensures that contractors possess the necessary skills and knowledge in geotagging, aligning with the project's standards and objectives. - Section 1 Invitation to Bid</i></p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <ol style="list-style-type: none"> <li>1. Geotag photos of contracted activities mentioned in the contract, including tasks like spreading, compaction, pouring, and more. Additionally, capture photos of the construction of catch basin, intake box, reservoir, communal water faucet &amp; more if applicable.</li> </ol>	<p><b>Responsible Personnel:</b> ROMAT Team</p> <p><b>Frequency:</b> Once a year after completion for 10 years</p> <p><i>Note: All ROMAT members will undergo training and workshop on OMAS to be conducted by the PRDP.</i></p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <p>Geotag photos related to any OMAS concerns, such as the physical &amp; functionality status of facilities and structures.</p> <p>This helps in documenting and monitoring any repairs or improvements conducted on the identified elements.</p>

SP Type	Implementation Stage			
	Subproject Identification and Prioritization	Appraisal Review, and Approval	Subproject Implementation / Completion	Operations and Maintenance
			<p>2. Geotag photos of delivered supplies and equipment.</p> <p><b>Post Processing (refer procedure of FMR)</b></p> <p><b>For PRDP JIT Visits:</b></p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <p>a. During the site visits, JIT members will use the PRDP-Geocamera app to take photos or videos to document their concern/s for the proposed FMR</p> <p>b. The GGU is a signatory for the SWA document and will provide an AGT certificate to support billing requests.</p> <p><b>For completion of SP the contractor shall submit either in the geomapping portal or to LGU:</b></p> <p>Geotag Photos of the constructed water system specifically the following if applicable:</p> <p>d. Main source, spring box, intake box</p> <p>e. Main reservoir</p> <p>f. Every tapstand</p>	
Value Chain Infrastructure	<ol style="list-style-type: none"> <li>1. Geotag Photos of Municipal Hall and Surroundings (<i>refer procedure to FMR</i>)</li> <li>2. Geotag photos of the subproject site including existing structures or other features.</li> <li>3. Geotag Photos of the natural environment that will be affected by the SP, such as rivers, trees, and other relevant features.</li> <li>4. Geotag Photos of Commodity Locations and Production Areas at least a sample of two hectares</li> </ol>	<p><b>Responsible Personnel:</b> SPAR Team</p> <p><b>Frequency:</b> <i>only once</i></p> <p><b>Data Visualization:</b> <i>Virtual Site Visits (refer detailed procedure to FMR)</i></p> <ol style="list-style-type: none"> <li>1. Access the Geomapping Portal to view and inspect the Proposed subproject Take note of any observations, comments, or initial reviews regarding the proposed subproject.</li> <li>2. Comment and Provide Feedback</li> </ol>	<p><b>Responsible Personnel:</b> Contractor (based on Special Condition of Contract 41.5) &amp; LGU</p> <p><b>Frequency:</b> <i>Geotag every construction or installation activity for each item specified in the program of works.</i></p> <p><i>Note: All potential contractors who will be awarded contracts under the project must have completed geotagging</i></p>	<p><b>Responsible Personnel:</b> ROMAT Team</p> <p><b>Frequency:</b> <i>Once a year after completion for 10 years</i></p> <p><i>Note: All ROMAT members will undergo training and workshop on OMAS to be</i></p>

SP Type	Implementation Stage			
	Subproject Identification and Prioritization	Appraisal Review, and Approval	Subproject Implementation / Completion	Operations and Maintenance
		<p>3. Document and Record Findings</p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <p>4. During the site visits, appraisal team members use the PRDP-Geocamera app to take photos and videos to document their concern/s for the proposed irrigation.</p> <p>5. Drone Capture for VC infrastructure (select point of interest)</p> <p><b>Post Processing</b></p> <p>6. Upload Geotag Photos or Videos to the Geomapping Portal of the DA-PRDP using the respective account of each appraisal team member or request the GGU to upload it to the Portal.</p>	<p><i>training conducted by the PRDP Project Support Office. This requirement ensures that contractors possess the necessary skills and knowledge in geotagging, aligning with the project's standards and objectives. - Section 1 Invitation to Bid</i></p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <ol style="list-style-type: none"> <li>1. Geotag photos of contracted activities mentioned in the contract.</li> <li>2. Geotag photos of quarry sites associated with the project. This can include the extraction areas, stockpiles, machinery, equipment, access roads, and any other significant elements that contribute to the overall quarry operations.</li> <li>3. Geotagging photos of quality testing activities such as the Field Density Test (FDT), and cylindrical and flexural moldings conducted</li> </ol> <p><b>Post Processing (refer procedure of FMR)</b> <b>For PRDP JIT Visits:</b></p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <ol style="list-style-type: none"> <li>a. During the site visits, JIT members will use the PRDP-Geocamera app to take photos or videos to document their concern/s for the proposed FMR</li> <li>b. The GGU is a signatory for the SWA document and will provide an AGT certificate to support billing requests.</li> </ol>	<p><i>conducted by the PRDP.</i></p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <ul style="list-style-type: none"> <li>Geotag photos related to any OMAS concerns, such as the physical &amp; functionality status of facilities and structures.</li> </ul> <p>This helps in documenting and monitoring any repairs or improvements conducted on the identified elements.</p>

SP Type	Implementation Stage			
	Subproject Identification and Prioritization	Appraisal Review, and Approval	Subproject Implementation / Completion	Operations and Maintenance
			<p><b>For completion of SP the contractor shall submit either in the geomapping portal or to LGU:</b></p> <p>Geotag Photos of the constructed subproject contracted activities mentioned in the contract.</p>	

### B. Enterprise Subproject / Community Livelihood

**Table 2.** Matrix of geotagging activities for Enterprise Development subprojects by implementation stage

SP Type	Implementation Stage			
	Subproject Proposal	Subproject Implementation	Subproject Monitoring Upon Completion	Operations and Maintenance (EOM)
Animal Dispersal Farm Production Agricultural Machineries for land preparation, crop establishment and post-harvesting	<p><b>Responsible Personnel:</b> Implementing Proponent with the assistance of GGU and IREAP</p> <p><b>Frequency:</b> only once</p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <ol style="list-style-type: none"> <li>1. Open the PRDPGeocamera app on your device.</li> <li>2. Label the activity with an appropriate name for easy identification.</li> <li>3. Geotag Photos (at least 4 photos) of the proposed site, including any existing structures</li> </ol> <p><b>Post Processing</b></p> <p>Access the Geomapping Portal of the DA-PRDP using your respective account credentials.</p>	<p><b>Responsible Personnel:</b> Implementing Proponent or LGU</p> <p><b>Frequency:</b> every delivery of items</p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <ol style="list-style-type: none"> <li>1. Geotag Photos (at least 2 photos) of goods/items at the end user location where it is applicable:               <ol style="list-style-type: none"> <li>a. For transport vehicles (i.e. truck, farm tractor, banca (motorized/non-motorized etc.); farm machinery/equipment (i.e. thresher, cassava granulator etc.); processing equipment (i.e. spindle, fiber extractor, weighing scale, milk cooling tank, dryers etc.); small equipment, Geotagged photo (either front/side/back) and identification mark (i.e. plate number, serial number etc.) are required;</li> </ol> </li> </ol>	<p><b>Responsible Personnel:</b> PRDP Team</p> <p><b>Frequency:</b> every SP visit &amp; monitoring</p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <p>Where it is applicable:</p> <ol style="list-style-type: none"> <li>1. Geotag Photos of Production support assistance includes the following but not limited to; seeds, seedlings, (grafted, tubers, suckers, stalks, cuttings, etc.) organic fertilizer, seaweeds, fingerlings, mussel (bivalves shell) at sampling size of maximum thirty (30) recipient scattered in various location, if applicable.</li> </ol>	<p><b>Responsible Personnel:</b> EDMS</p> <p><b>Frequency:</b> every site visit</p> <p><b>Data Acquisition:</b> What items should be geotagged?</p> <ol style="list-style-type: none"> <li>1. Geotag photos related to facilities, machinery, or equipment.</li> <li>2. Geotag photos of any repair and maintenance concerning functionality and servicesability.</li> </ol> <p>This helps in documenting and</p>

SP Type	Implementation Stage			
	Subproject Proposal	Subproject Implementation	Subproject Monitoring Upon Completion	Operations and Maintenance (EOM)
	<p>Upload Geotag Photos to the Geo-mapping Portal of the DA-PRDP</p> <ol style="list-style-type: none"> <li>Select the specific Sub-Project (SP) assigned to you or create a new SP corresponding to your geographical area of responsibility.</li> <li>Upload geotag photos respective folder: Geotag Photos of proposed location of SP.</li> <li>You may include a label or annotation of geotag photos to provide more information.</li> </ol> <p>Identify and add placemark/ markers in the Geomapping Portal of the following where it is applicable:</p> <ol style="list-style-type: none"> <li>Office location of the proponent group</li> <li>Office location of Cluster Group/Cooperative/ Organization Office</li> <li>Save file once accomplished</li> </ol> <p>6. Identify and create polygon or heat map of source location of raw materials, animal stocks and machinery users where it is applicable:</p> <ol style="list-style-type: none"> <li>For raw material source, create polygons representing 50% of the total commodity area as stated in the business plan.</li> </ol>	<ol style="list-style-type: none"> <li>For animal dispersal (i.e. dairy cows, goats, etc.), geotagged photos with the recipient/end user residence or animal corral/pen/barn at sampling size of maximum thirty (30) recipient scattered in various location are required;</li> <li>For production support assistance which includes the following but not limited to; seeds, seedlings, (grafted, tubers, suckers, stalks, cuttings, etc.) organic fertilizer, seaweeds, fingerlings, mussel (bivalves shell), geotagged photos with the recipient/end user farm or residence upon delivery/receipt at sampling size of maximum thirty (30) recipient scattered in various location.</li> </ol> <p><b>Post Processing</b></p> <p>Access the Geomapping Portal of the DA-PRDP using your respective account credentials.</p> <ol style="list-style-type: none"> <li>Upload Geotag Photos to the Geo-mapping Portal of the DA-PRDP <ol style="list-style-type: none"> <li>Select the specific Sub-Project (SP) assigned to you as area of responsibility.</li> <li>Upload geotag photo respective folder or create a folder.</li> <li>You may include a label or annotation of geotag photos to provide more information.</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>Geotag (at least four) photo of crop supported at farm location</li> <li>Geotagged (at least four) photo at fishery or module location</li> <li>Geotagged photo (at least two) of animals (with offspring) and owner.</li> <li>Geotagged Photos of infrastructure and equipment</li> </ol> <p><b>Post Processing</b></p> <p>Access the Geomapping Portal of the DA-PRDP using your respective account credentials.</p> <ol style="list-style-type: none"> <li>Upload Geotag Photos to the Geo-mapping Portal of the DA-PRDP <ol style="list-style-type: none"> <li>Select the specific Sub-Project (SP) assigned to you as area of responsibility.</li> <li>Upload geotag photo respective folder or create a folder.</li> <li>You may include a label or annotation of geotag photos to provide more information.</li> </ol> </li> </ol>	<p>monitoring any repairs or improvements conducted on the identified items.</p>

SP Type	Implementation Stage			
	Subproject Proposal	Subproject Implementation	Subproject Monitoring Upon Completion	Operations and Maintenance (EOM)
	<ul style="list-style-type: none"> <li>g. For animal headcount data use the heat map tool to input by barangay data from the MAO.</li> <li>h. For machinery target users, create polygons representing the 50% of the total commodity area to be served as stated in the business plan.</li> <li>i. Save file once accomplished</li> </ul>			

#### V. Mainstreaming and Institutionalization: Training and Capacity-Building Initiatives

The Geo-mapping and Governance Unit, in collaboration with the Information and Communication Technology Service (DA-ICTS), has played a crucial role in conducting various trainings and workshops as part of the Philippine Rural Development Project's mainstreaming and institutionalization initiatives.

Led by the Institutionalization Development Unit (IDU), a comprehensive training activity was developed to address the identified gaps in knowledge, competence, and skills. The programs and courses were carefully designed to familiarize participants with important tools such as Geomapping (including Geotagging and GIS), expanded VSA, Drone Technology, Data Analytics and other ICT solutions and tools. These training sessions aimed to equip participants with the necessary expertise to effectively utilize these technologies in their work.

Recognizing the need for accessible and centralized resources, the Geo-mapping and Governance Unit established a training portal. This portal serves as a hub for participants to access training materials, including PowerPoint presentations, software installers, and other essential resources. Additionally, the portal facilitates pre- and post-training assessments, enabling participants to submit their workshop outputs, such as geo-tagged photos, GIS maps, and re-entry plans for mainstreaming. By providing a user-friendly platform, the training portal enhances the learning experience and supports the integration of acquired knowledge into practical applications.

The training and workshop activities also offered participants a valuable opportunity to discuss their re-entry action plans. These discussions focused on how to effectively integrate the learned innovations into their respective operations. By engaging in such conversations, participants were able to explore the practical applications of the acquired knowledge and skills, further reinforcing the objective of mainstreaming and institutionalizing technology within their organizations.

The collaborative efforts of the Geomapping and Governance Unit and the Information and Communication Technology Service have successfully empowered participants with the necessary tools, skills, and knowledge to embrace and integrate technology into their daily operations. By offering comprehensive training, establishing a user-friendly training portal, and encouraging discussions on re-entry action plans, this initiative significantly contributes to the mainstreaming and institutionalization initiatives of the Philippine Rural Development Project.

## Annex 1 PRDP Geocamera Users Guide

### PRDP GEOCAMERA USER GUIDE

#### I. Introduction

The Philippine Rural Development Project (PRDP) has developed and established geo-mapping tools and systems that allow for the intensive mapping of project investments in rural infrastructure and enterprise sub-projects in the 81 provinces covered by the Project. The PRDP Applied Geo-tagging Tool (AGT) is being used to provide accurate data and photo documentation of sub-projects throughout their subproject cycle -- from identification, validation, procurement, monitoring, supervision and operations and maintenance.

The PRDP AGT is one of the basic yet effective tools that the Project has pioneered and deployed nationwide, and is being adopted and used by partner Local Government Units (LGUs) and other national government agencies for their subproject monitoring and supervision. It has been lauded by the World Bank as a revolutionary and inexpensive approach to using Information and Communication Technology (ICT) and Global Positioning System (GPS) applications for accurate visualization of sub-projects.

The creation of PRDP GeoCamera application will provide better real-time monitoring experience by providing the project with location based motion visual information of particular subproject activity to further strengthen transparency and accountability.

#### II. Device Requirements



Android OS Device  
at least android 5 (Lollipop)  
version



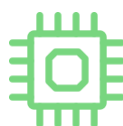
Device rear camera at least  
3 MP resolution



GPS Enabled

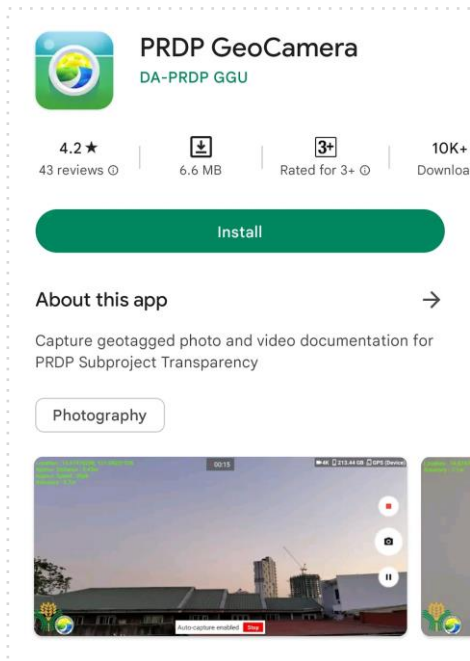


At least 500 MB  
Free Storage Space



2 GB RAM

### III. Installation

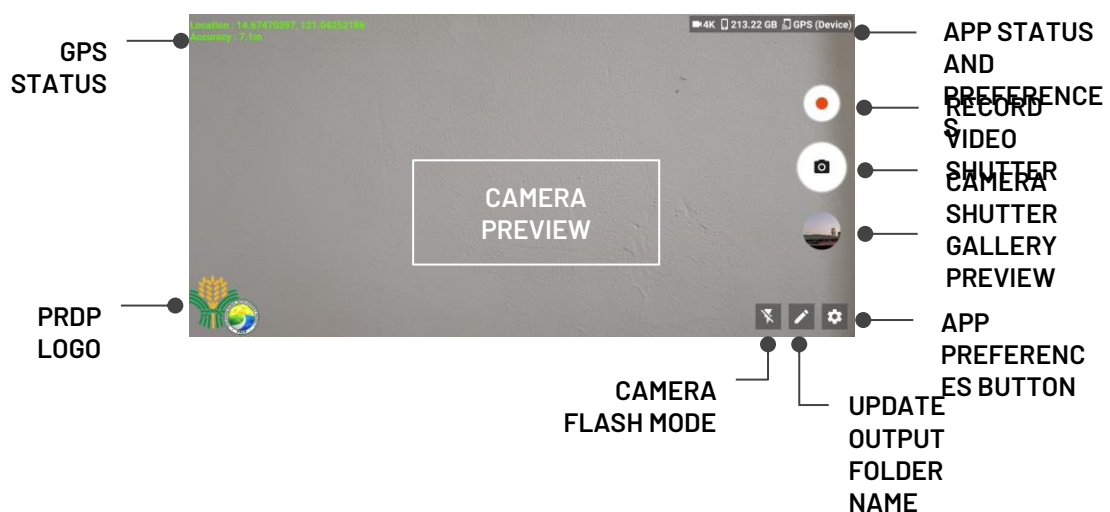


1. Open Google Play Store or Huawei App Gallery then search for “ PRDP GeoCamera”
2. Click “install” and wait until the installation completes.
3. Open PRDP GeoCamera then grant all the required application permissions.

#### App Permissions:

- Camera - allows the application to use device camera in capturing geotagged photos and videos
- Location - allows the application to get GPS location update that can be used in geotagging
- Storage - allows the application to store generated output such as geotagged-video, photo, KMZ and application resources

### IV. Application User Interface

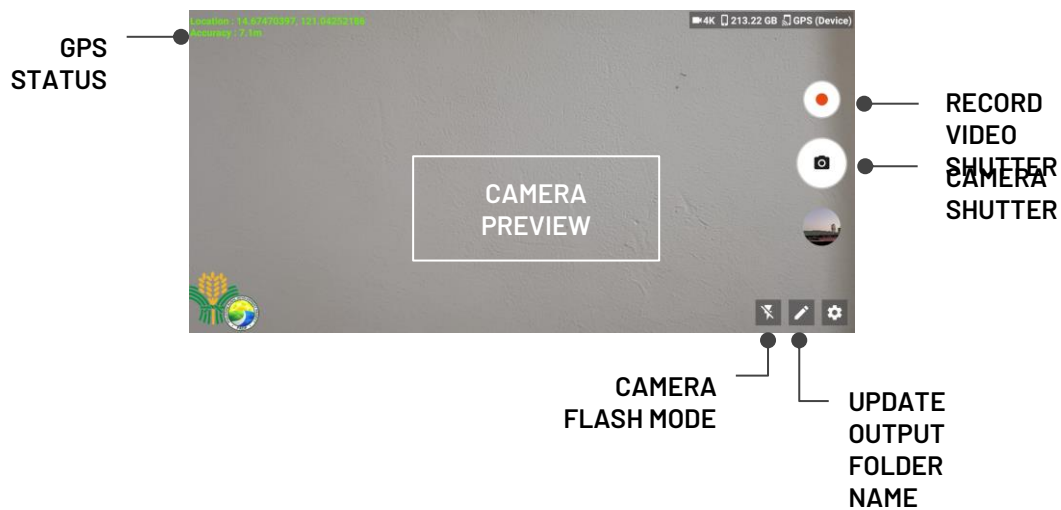


- GPS STATUS - shows the current GPS location information and accuracy.
- PRDP LOGO - application owner logo



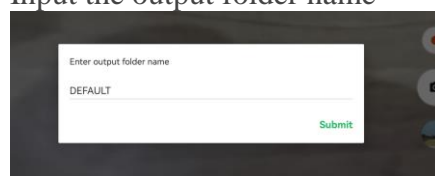
- APP STATUS AND PREFERENCES - shows the current application preferences such as current video output resolution, remaining free storage capacity and location source.
- VIDEO SHUTTER - shutter that can be used to start geotagged video recording
- CAMERA SHUTTER - shutter that can be used to capture geotagged photos.
- GALLERY PREVIEW - preview of last captured geotagged file and also serve as the button used to navigate application gallery page.
- APP PREFERENCES BUTTON - use to navigate application preferences page that allows the user to set geotagged output options such as resolution, GPS location source and storage location.
- OUTPUT FOLDER NAME - directory that will contain the geotagged files to be captured.
- FLASH - used to set camera flash mode to be able to enhance camera output especially for low light areas.

## V. Capture Geotagged Video/Photo



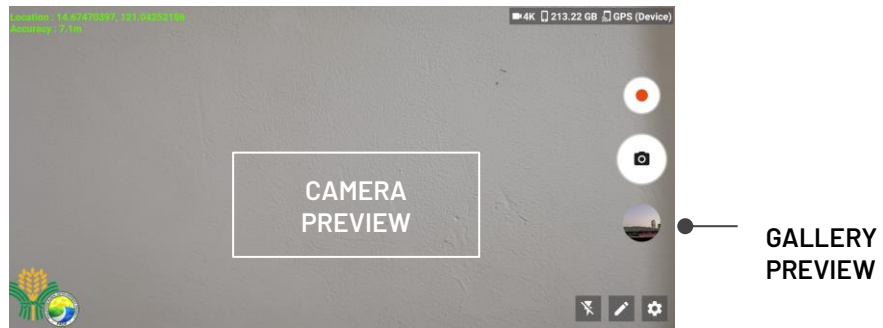
### HOW TO CAPTURE GEOTAGGED VIDEO / PHOTO

1. Input the output folder name



2. Wait until the application establishes a GPS connection and make sure that the GPS status has at least 15m accuracy.
3. Tap the camera shutter to capture a geotagged file based on the preferred output (photo or video) and wait until the application prompts that the process is finished.

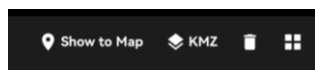
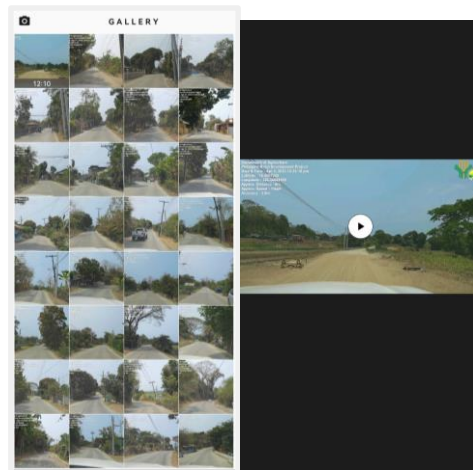
## VI. Gallery



### HOW TO OPEN APP GALLERY

Click the “Gallery Preview” below the camera shutter to be able to navigate the output gallery page.

To change the gallery view mode, click the “Gallery Gridview” button

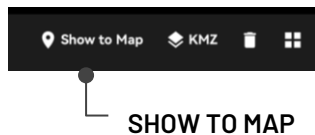


**GALLERY GRID  
VIEW**

## VII. Map Viewer

## HOW TO VIEW GEOTAGGED PHOTOS IN OFFLINE MAP

1. Open the application gallery
2. Select the photo to be viewed on the map
3. On the upper portion of the page, click the “Show to Map” menu to go to the Map Viewer page.



4. Download the basemap (optional).

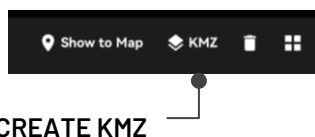
**Note:**The application requires an **internet connection** to download the map from the server and **at least 500 MB of device storage free space**.



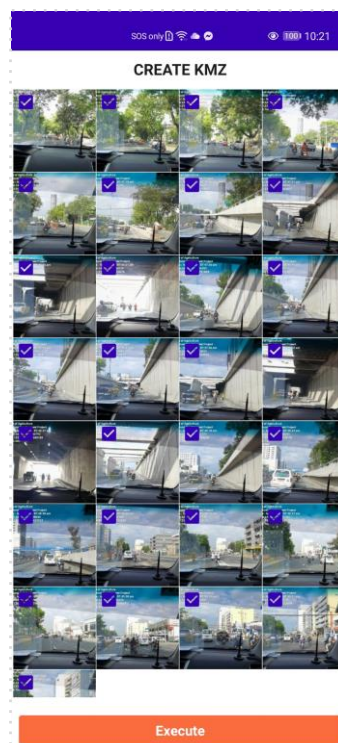
## VIII. Generate KMZ

### HOW TO CONVERT GEOTAGGED PHOTOS TO KMZ

1. Open the application gallery
2. Select the photo to be converted into KMZ File
3. On the upper portion of the page, click the “KMZ” menu to go to the Create KMZ page.



4. All geotagged photos within the selected photo parent directory will be loaded
5. Select geotagged photos that will be included in the KMZ conversion
6. Click the “Execute” button and input the KMZ filename to start



the conversion process.

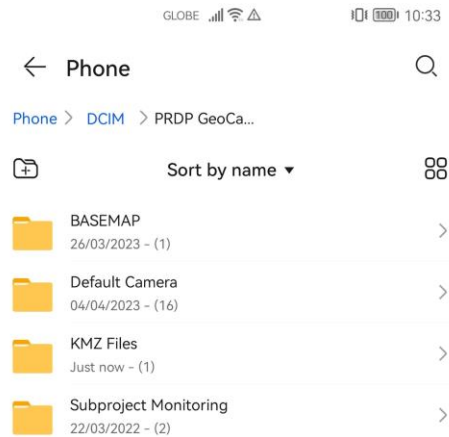
## IX. Output Location

### HOW TO LOCATE APPLICATION OUTPUTS

1. Open File Manager then select the current default PRDP GeoCamera output storage (*Internal Storage or SD Card*).
2. Open "DCIM" folder then locate the "PRDP GeoCam" folder containing the application outputs and resources

**Note:**

Devices using Android 12 and up version, PRDP GeoCam is located at the **DOCUMENTS** folder.



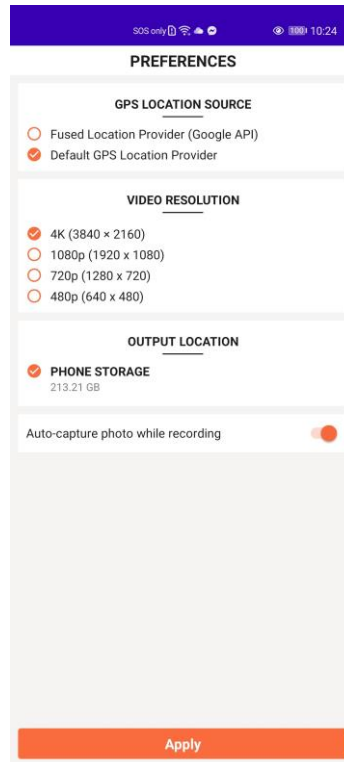
### FOLDERS INSIDE PRDP GEOCAM

- GEOTAG FOLDER - this directory contains the geotag files captured using PRDP GeoCamera
- KMZ FOLDER - this directory contains the list of KMZ files converted from the captured Geotagged Photos
- BASE MAP FOLDER - this directory contains the offline map that is used in the application map viewer

## X. Application Preferences

- GPS Location Source - allows the user to select the default application GPS location source

- Device GPS Provider
  - Provides location update through satellite depending on condition
  - Provides location update through Network depending on the availability of cell towers
- Fused Location Provider
  - provider automatically chooses what underlying provider to use, based on accuracy, battery usage, etc. It is fast because you get location from a system-wide service that keeps updating it.



- GPS LOCATION SOURCE
- VIDEO RESOLUTION
- OUTPUT STORAGE
- AUTO-CAPTURE GEOTAGGED PHOTO

- Video Resolution - allows the user to set the default Geo-Video Resolution

**Note:**

Video resolution will be based on the supported video resolutions of the device camera. Higher video resolution requires more device free storage capacity

- Output Storage - allows the user to choose the default storage location where the application will be stored. (*Internal Storage or SD Card*)
- Auto-capture Photo - this features enables the application to capture geotagged photos during geotagged video recording

## Annex 2 Drone pilot Eligibility Guide

### PRDP DRONE PILOT ELIGIBILITY GUIDE

#### I. Rationale

The utilization of unmanned aerial vehicles (UAVs) or drones in conjunction with Applied Geotagging Technology (AGT) significantly enhances the transparency and monitoring capabilities of projects. The UAVs offer a unique and valuable aerial perspective that complements the ground-level data collected through the AGT.

When implementing a project, the UAV is flown along the entire stretch or coverage of the subproject area. This allows it to capture high-resolution aerial views of various elements, including the condition of the project site, the layout of production areas, and the surrounding communities. These aerial images provide valuable visual information that can be used for validation, monitoring, and assessment purposes.

During the validation and actual implementation stages of a subproject, the UAV can capture real-time imagery that showcases the progress being made. This enables stakeholders to remotely monitor the development and track the changes that are taking place. By visually documenting the subproject's evolution, the UAV helps stakeholders gain a comprehensive understanding of the project's impact and identify any potential challenges or areas for improvement.

Furthermore, the UAV's aerial perspective is not limited to the present. It can also provide a preview of the subproject's future operations once it is completed and becomes operational. By capturing imagery that showcases the intended functionality and utilization of the subproject, stakeholders can gain insights into its long-term benefits and potential impact on the surrounding areas.

Overall, the combination of AGT and UAV technologies revolutionizes project monitoring and assessment. It provides stakeholders with a comprehensive and dynamic understanding of the project's progress, impact, and potential. By leveraging the aerial perspective offered by UAVs and the capabilities of the AGT, projects can be monitored and evaluated more effectively, leading to enhanced transparency, accountability, and informed decision-making.

Lastly, To ensure the clarity of drone usage and define who can use drones, it is important to establish eligibility guidelines. These guidelines will help determine the individuals or entities that are qualified to operate drones in the context of the project.

#### II. Step-by-step guidelines to become an eligible Drone Pilot for the Philippine Rural Development Project (PRDP)- Geomapping and Governance Unit (GGU):

##### **Option 1: Acquire a CAAP RPA Controller's Certificate.**

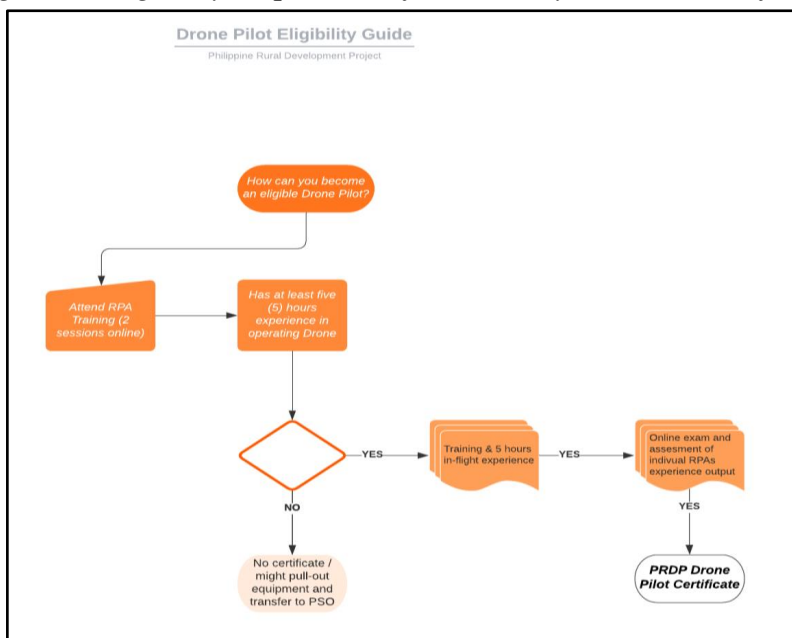
Obtain a CAAP RPA Controller's Certificate, which must be active at the time of submission to the PRDP-NPCO GGU.

**Option 2: Or complete the RPAs training course conducted by the PRDP-GGU**

Enroll in the RPAs training course conducted by the Geomapping and Governance Unit of the Philippine Rural Development Project.

- A. Attend the two sessions of online or face-to-face training, covering the following topics:
  - a. Drone 101: Know your drone and Theoretical Training (Rationale, CAAP guidelines, PRDP Application)
  - b. Drone in Mapping: Flight Plan, Image Processing, point cloud and analysis, and World Bank: Managing the risks of unmanned aircraft operations in development projects
  - c. Individual on-site assignment RPA in-flight exercises
  
- B. Gain experience in operating RPAs inside controlled airspace for drone operators
  - a. Accumulate at least five (5) hours of experience in operating RPAs inside controlled airspace for drone operators
  - b. Ensure that the five (5) hours of experience include:
    - i. At least 4 hours from the 5 in-flight exercises.
    - ii. At least 1 hour of practical experience and on-site drone operation.
    - iii. Provide verification through the recorded flight from DJI Go App (screenshot), photos and video taken performing the 5 in-flight exercises, and sample/actual output from the site visit.
  
- C. Pass the PRDP-Drone Pilot Exam
  - a. Take and pass the PRDP-Drone Pilot Exam, which includes online assessments on Drones and PRDP Guidelines.
  - b. The exam will also assess individual RPAs output from the 5 hours of experience
  
- D. Obtain the PRDP-NPCO GGU Certificate:
  - a. After completing the RPA online training conducted by the NPCO and accumulating 5 hours of RPAs experience, a PRDP-NPCO GGU Certificate will be issued to the pilot.

Figure 1: Eligibility Requirement for Remotely Piloted Aircraft System (RPAS) Pilot



Additionally, here are some general requirements and guidelines for RPA operations following CAAP (MC 29-15) and DA-PRDP guidelines:

Civil Aviation Authority of the Philippines (CAAP) MC 29-15 ([click to view full copy](#))

Excerpt from the Guidelines	Screenshot Link
<p>11.11.2 General RPA Operations</p> <p>(a) A person must not operate an RPA over a populous area at a height less than the height from which, if any of its components fails, it would be able to clear the area.</p> <p>(b) Subject to sub-regulations (c ) and (d), a person operating a powered RPA must ensure that, while the RPA is in flight, or is landing or taking off, it stays at least 30 meters away from anyone not directly associated with the operation of the RPA.</p> <p>(c) Sub-regulation (b) is not contravened if a person stands behind the RPA while it is taking off.</p>	<p><a href="https://photos.app.goo.gl/xyc3VoHUnHTgeWqy5">https://photos.app.goo.gl/xyc3VoHUnHTgeWqy5</a></p>
<p>11.11.3 RPA Restricted Areas of Operation</p> <p>(a) No person may operate RPA within the following envelope unless prior approval has been granted by the Authority:</p> <p>(i) 400 ft Above Ground Level (AGL);</p> <p>(ii) 10 km radius from the Aerodrome Reference Point (ARP);</p> <p>(c) No person may operate an RPA in a controlled or prohibited airspace unless authorized by the Authority</p>	<p><a href="https://photos.app.goo.gl/qRt31nbK19dmcbXt8">https://photos.app.goo.gl/qRt31nbK19dmcbXt8</a></p>
<p><b>Definitions:</b></p> <ul style="list-style-type: none"> <li>● <b>Large RPA</b> means with a gross weight of 7kgs and above.</li> <li>● <b>Small RPA</b> means with a gross weight of below 7kgs.</li> </ul>	<p><a href="https://photos.app.goo.gl/RiFi49VMrE5b2FXb8">https://photos.app.goo.gl/RiFi49VMrE5b2FXb8</a></p>
<p>11. 11. 5 Requirement for Certificate of Registration and Special Certificate of Airworthiness</p> <p>(a) All RPAs used for commercial operations are required to be registered with the Authority regardless of weight</p> <p>(b) Non-commercial Large RPA shall be duly registered with the Authority</p>	<p><a href="https://photos.app.goo.gl/vz6tHyWtNyR9K6Au8">https://photos.app.goo.gl/vz6tHyWtNyR9K6Au8</a></p>

**Geomapping and Governance Unit - General Remotely Piloted Aircraft (RPA) Guidelines Basis**

User Manual DJI Inspire 2 ([click to view full copy](#))

Excerpt from the Users Manual	Screenshot Link
<p>1. Know Your Drone: Before Flight</p> <ol style="list-style-type: none"> <li>1. In the Box</li> <li>2. Safety Guidelines and Disclaimer</li> <li>3. Quick Start Guide</li> </ol>	<p><a href="https://photos.app.goo.gl/yP86gAvDEajLyUQe9">https://photos.app.goo.gl/yP86gAvDEajLyUQe9</a></p>



<ol style="list-style-type: none"> <li>4. Intelligent Flight Battery Safety Guidelines</li> <li>5. User Manual</li> </ol>	
<p>2. Failsafe Return-to-Home Function</p> <p>Failsafe RTH will be automatically activated if the remote controller signal is lost for more than three seconds. The aircraft will plan its return route and retrace its original flight route home. The aircraft will hover for 10 seconds at its current location. When it regains signal connection it will wait for pilot commands. The Return-to-Home process may be interrupted and the pilot given control of the aircraft if the remote controller signal connection is re-established.</p>	<a href="https://photos.app.goo.gl/7rsK1Mjbn5Ef8dE6">https://photos.app.goo.gl/7rsK1Mjbn5Ef8dE6</a>
<p>3. Preflight Checklist</p> <ol style="list-style-type: none"> <li>1. Remote controller, intelligent Flight Battery, and mobile device are fully charged.</li> <li>2. Propellers are mounted correctly and firmly.</li> <li>3. Micro SD card has been inserted if necessary</li> <li>4. Gimbal is functioning normally</li> <li>5. Motors can start and are functioning normally.</li> <li>6. The DJI Go 4 app is successfully connected to the aircraft</li> <li>7. Ensure that the sensors for the Obstacle Sensing System are clean.</li> </ol> <p><i>Additional requirements (emphasized during PRDP UAV Trainings)</i></p> <ol style="list-style-type: none"> <li>8. Check for Firmware and Software Updates</li> <li>9. Virtually visit the subproject site and plan your route and sections that you intend to collect aerial documentation</li> </ol>	<a href="https://photos.app.goo.gl/SMEn4JKbeq8d4sJJ9">https://photos.app.goo.gl/SMEn4JKbeq8d4sJJ9</a>
<p>4. Flight Environment Requirements</p> <ol style="list-style-type: none"> <li>1. Do not use the aircraft in severe weather conditions. These include wind speeds exceeding 10 m/s, snow, rain, and fog.</li> <li>2. Only fly in open areas. Tall structures and large metal structures may affect the accuracy of the on-board compass and GPS system.</li> <li>3. Avoid obstacles, crowds, high-voltage power lines, trees, and bodies of water.</li> <li>4. Minimize interference by avoiding areas with high levels of electromagnetism, including base stations and radios transmission towers.</li> <li>5. Aircraft and battery performance is subject to environmental factors such as air density and temperature. Be very careful when flying at high altitudes, as the performance of the battery and aircraft may be affected.</li> </ol>	<a href="https://photos.app.goo.gl/SEmgroyAv5Jq4ZUy6">https://photos.app.goo.gl/SEmgroyAv5Jq4ZUy6</a>
<p><i>Additional requirements (emphasized during PRDP UAV Training)</i></p> <ol style="list-style-type: none"> <li>6. Always coordinate with partner LGU</li> <li>7. Know Local Laws for Flying</li> </ol>	

## **EXPANDED VULNERABILITY AND SUITABILITY ANALYSIS (EVSA) TOOL USERS' GUIDE**

The Expanded Vulnerability and Suitability Analysis (EVSA) application is a Decision Support Tool (DST) within the DA PRDP Planners Portal that enables users to conduct comprehensive analyses for agricultural planning. This step-by-step guide aims to assist users in accessing and effectively utilizing the EVSA application. From downloading the offline installer to generating rankings and visualizing data on a map, this guide provides a narrative walkthrough of the entire process.

### **1. Accessing and Installing EVSA**

To begin, navigate to the DA PRDP Planners Portal website (<https://www.daprdp-plannersportal.net>) and locate the online and offline applications for EVSA. For offline access, download the EVSA offline installer by scrolling to the bottom of the webpage and clicking on the offline version link. Once downloaded, locate the installer file and double-click on "eVSA\_winApp.msi" to initiate the installation process. Please note that the current installer is for Windows only, with a Mac version under development. Wait for the installation to complete.

### **2. Navigating the EVSA User Interface**

After installation, open the EVSA Win App. The application interface consists of three tabs: "Previous Analysis," "New Analysis," and "Logout." Familiarize yourself with these tabs as they will be used throughout the analysis process.

### **3. Creating a New Analysis**

In the "New Analysis" tab, enter a filename for the analysis. For example, you can use "La Union-Mango" to represent the vulnerability and suitability analysis for mango production in La Union. Click "Create" and then "OK" to save the filename.

### **4. EVSA Parameters and Weight Assignment**

In the new analysis, the first step is the Vulnerability and Suitability Analysis (VSA). Select the appropriate AES (Agricultural Extension Services) group for the commodity, in this case, AES7 for mango. Assign a weight of 0.5 to the VSA. Next, determine the scope of analysis by selecting the region and province, such as Ilocos Region (Region 1) and La Union.

### **5. Socio-economic Parameters and Weight Assignment**

For the EVSA part of the analysis, select socio-economic parameters that are relevant to the analysis, such as poverty incidence and the production area of mango in La Union. Input the corresponding weights (e.g., 0.25 for each parameter). Define the prioritization by selecting positive or negative correlation based on the desired prioritization criteria. Add new parameters if necessary. Save the parameter inputs when completed.

### **6. Saving and Viewing Analysis Results**

In the EVSA app, you will see the region, province, municipalities, and composite index in the VSA section. The poverty incidence data will be automatically populated, while the production area of mango requires manual input. Save the data when finished. The application will generate rankings based on the VSA and socio-economic parameters.

### **7. Visualizing Data on the Map**

Export the ranking results as a CSV file for inclusion in reports. Open the downloaded file to view the geocode, region, province, municipality, poverty incidence index, mango production area, and the old and new composite indices and ranks. Return to the EVSA app and click on "View Map." Wait for the map to load. The municipalities in La Union will be displayed in different shades of green, indicating their ranking. Customize the color scheme as desired.

### **8. Accessing Previous Analyses**

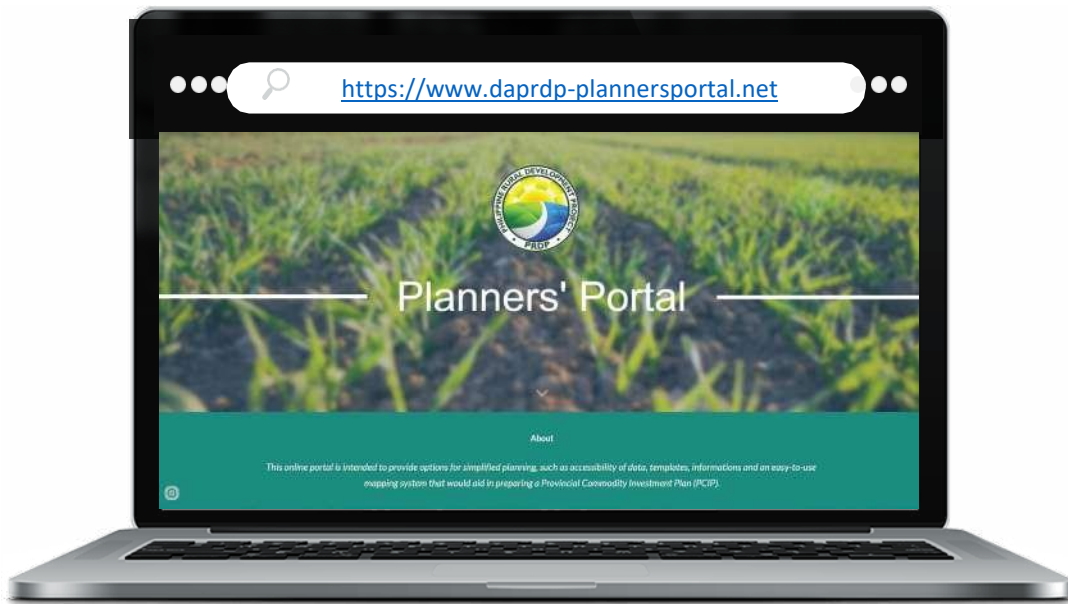
To access previous analyses, use the "Previous Analysis" tab. Here, you can view the maps and municipality rankings from past analyses. Note that parameters cannot be edited in previous analyses, but the map and rankings can still be observed. For new parameters or updated data for the predefined parameter, you need to create a new analysis.

*You may want to access the video tutorial [here](#).*

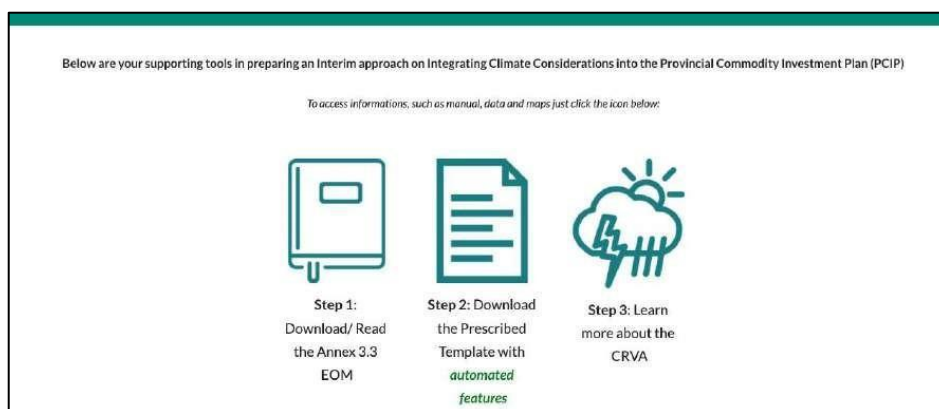
## Annex 4 Planners Portal User's Guide

### PLANNER'S PORTAL USERS' GUIDE

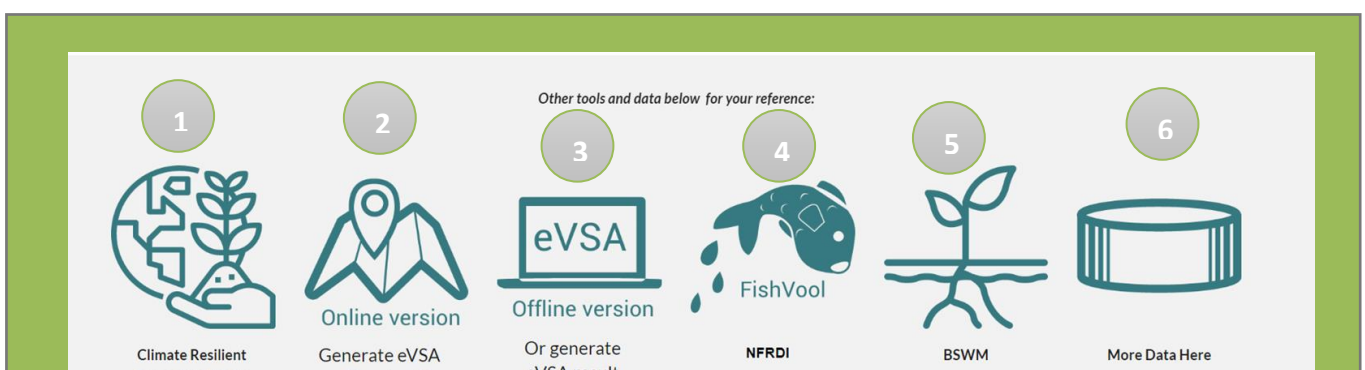
1. The Planners' Portal can be accessed through this link : <https://www.daprdp-plannersportal.net>



2. As part of the initial rollout of the IPLAN EOM, the Planners' Portal presents links to supporting tools in preparing/updating PCIP using the Interim approach on Integrating Climate Risk and Resilience. Links to Annex 3.3 of the IPLAN EOM, prescribed templates and the CRVA data are presented as major steps in the Portal.



3. Links to other tools were also made available on the website for reference of the planners.



Under this portion, the following links for other references are made available for planners:

1 **Climate Resilient Agriculture Profile.**

This website under the AMIA and CIAT is a decision support platform for Climate-resilient agriculture investment prioritization. The CPTs may use these documents as reference in crafting adaptation measures based on the relevant risks identified for a certain commodity or area.

2 **EVSA system (online and offline)**

This website and tool contains e-VSA mapping analysis which generates ranking of provinces or municipalities according to vulnerability, crop suitability and Socio-economic parameters.

4 **NFRDI FISHVOOL**

This contains analysis on the vulnerability and suitability of capture and aquaculture fisheries which generates ranking of provinces.

5 **BSWM Soil Suitability Index**

Data source from BSWM which contains numerical ratings derived for every municipality as a result of implementing the vulnerability and suitability assessment tool (VSA) using one commodity group at a time. The index value would now indicate how the municipalities would rank in terms of its suitability to a type of commodity. This VSA tool is very useful in determining the relative importance of municipalities for appropriate interventions given its commodity- based prioritization.

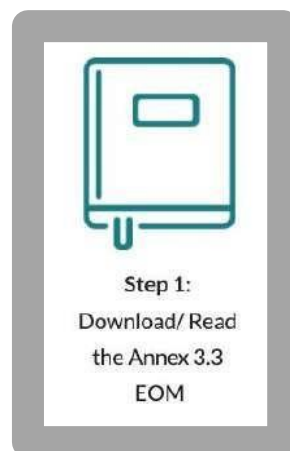
6 **More data.**

This link will redirect you to other data for planning such as DA-CRAO Farmers' Guide Map, poverty incidence, PRDP subproject portfolio, land cover map, road network data, BFAR Fishcore Project, DA-BAFE GeoAgri, GEOSMART, and Hazard Hunter PH.

## **Risk Profiling of Commodity per Municipality**

**1. Download/read the Annex 3.3 EOM**

From the Planners Portal, download/ read the Annex 3.3 of the IPLAN EOM. This is to provide planners an idea or a recap about the Interim Approach in updating the PCIPs which focuses on integrating climate risk and resilience in the PCIPs. You may access Annex 3.3 directly from the Planners Portal through clicking the “Step 1: Download/Read the Annex 3.3 EOM” icon.



**2. Download the Prescribe Templates for the Interim Approach in PCIP Updating**

You may access the prescribed templates directly from the Planners Portal through clicking the “Step 2: Download the Prescribed Template with automated features” icon.



**3. Open the file using Microsoft Excel and enable macros.**

**4. Refer to “P3B RA 4” sheet to characterize the level of risk in terms of sensitivity, hazards, adaptive capacity and overall vulnerability class per municipality.**

The template shall be used as a guide in identifying risks of prioritized commodities in the municipalities of a province as seen in Figure 1. You may use this automated template to generate data from the Planners Portal. Select the province and commodity, and data will be automatically reflected in the table. You may also opt to manually input the CRVA data from the Planners Portal.

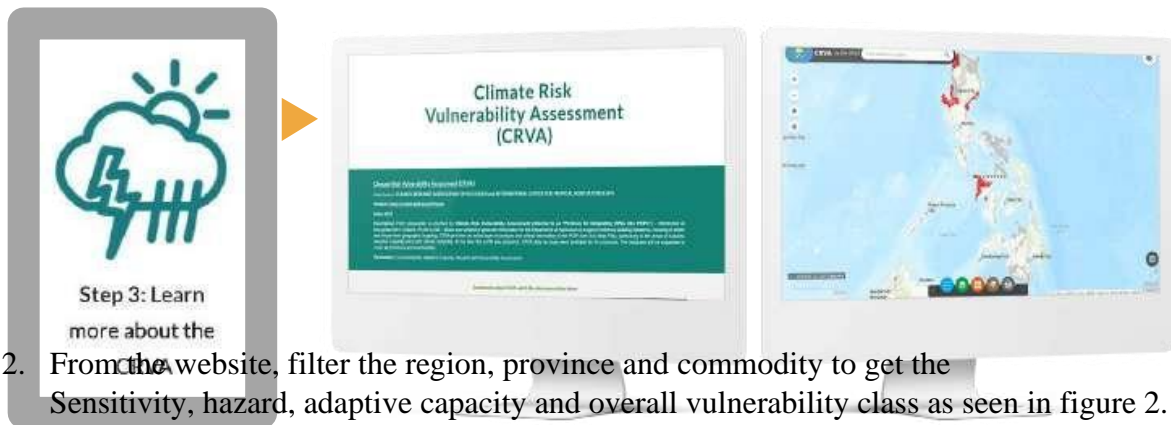
	A	B	C	D	E	F
1	PROVINCE:	GUIMARAS				
2	COMMODITY:	MANGO				
3		Vulnerability Index of a Commodity per Municipality				
4	Indicators	BUENAVISTA	JORDAN	NUEVA VALENCIA	SAN LORENZO	SIBUNAG
5	Overall vulnerability class	LOW	LOW	VERY LOW	VERY HIGH	VERY HIGH
6	Climate sensitivity (negative, positive or no change)	LOSS	NO CHANGE	GAIN	NO CHANGE	NO CHANGE
7	Hazards (very low, low, moderate, high, or very high)	VERY HIGH	MODERATE	VERY LOW	LOW	HIGH
8	Tropical cyclone	VERY HIGH	HIGH	VERY LOW	HIGH	HIGH
9	Flood	LOW	VERY LOW	VERY HIGH	VERY LOW	HIGH
10	Erosion	VERY HIGH	VERY HIGH	VERY LOW	MODERATE	MODERATE
11	Landslide	VERY HIGH	HIGH	VERY LOW	LOW	MODERATE
12	Drought	VERY HIGH	VERY HIGH	VERY LOW	MODERATE	MODERATE
13	Sea level rise	MODERATE	VERY LOW	VERY HIGH	MODERATE	VERY HIGH
14	Storm surge	MODERATE	VERY LOW	HIGH	VERY HIGH	VERY HIGH
15	Salt water intrusion	VERY LOW	VERY LOW	VERY LOW	VERY LOW	VERY LOW
16	Adaptive capacity (AC) (very low, low, moderate, high, or very high)	VERY LOW	LOW	VERY LOW	VERY HIGH	VERY HIGH
17	Economic	VERY HIGH	VERY HIGH	HIGH	VERY LOW	MODERATE
18	Natural	VERY LOW	VERY LOW	VERY HIGH	VERY LOW	VERY LOW



Figure 1. Risk profile of mango in the municipalities of Guimaras.

### Accessing Climate Risk Vulnerability Assessment (CRVA)

1. Click step 3: learn more about CRVA, this will redirect you Climate Risk Vulnerability Assessment website.



2. From the website, filter the region, province and commodity to get the Sensitivity, hazard, adaptive capacity and overall vulnerability class as seen in figure 2.

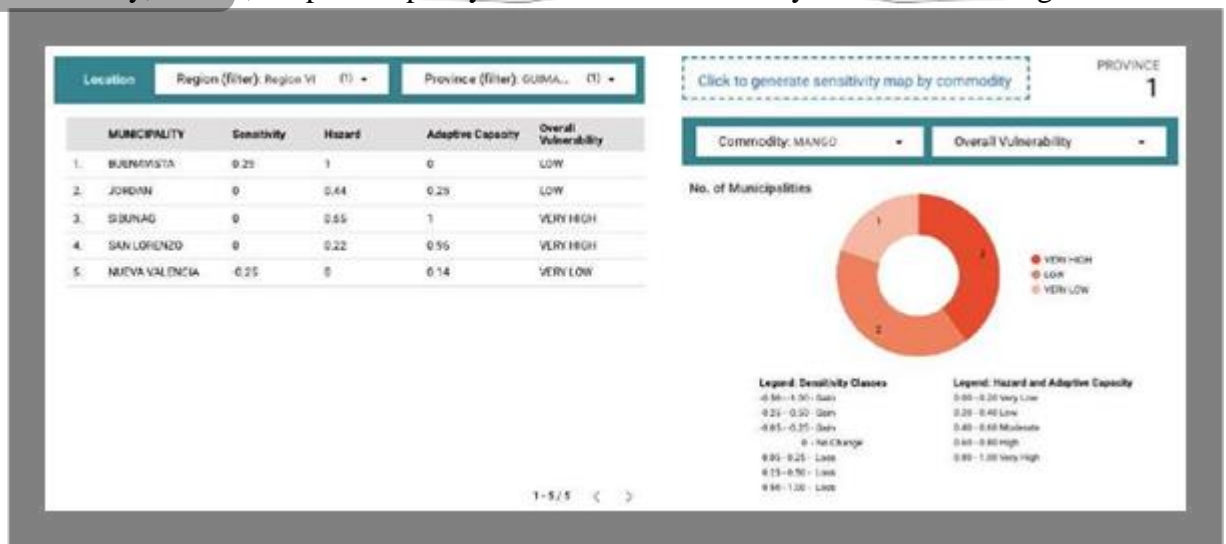


Figure 2. CRVA data of Guimaras Mango.

3. For specific hazards and adaptive capacity parameters, scroll down and filter the data for the province. Please note that data for hazard and adaptive capacity is not commodity specific that is why there is no need to filter the commodity for these portions as seen in Figure 3 and 4, respectively.



Figure 3. Specific hazard Data for Guimaras province.

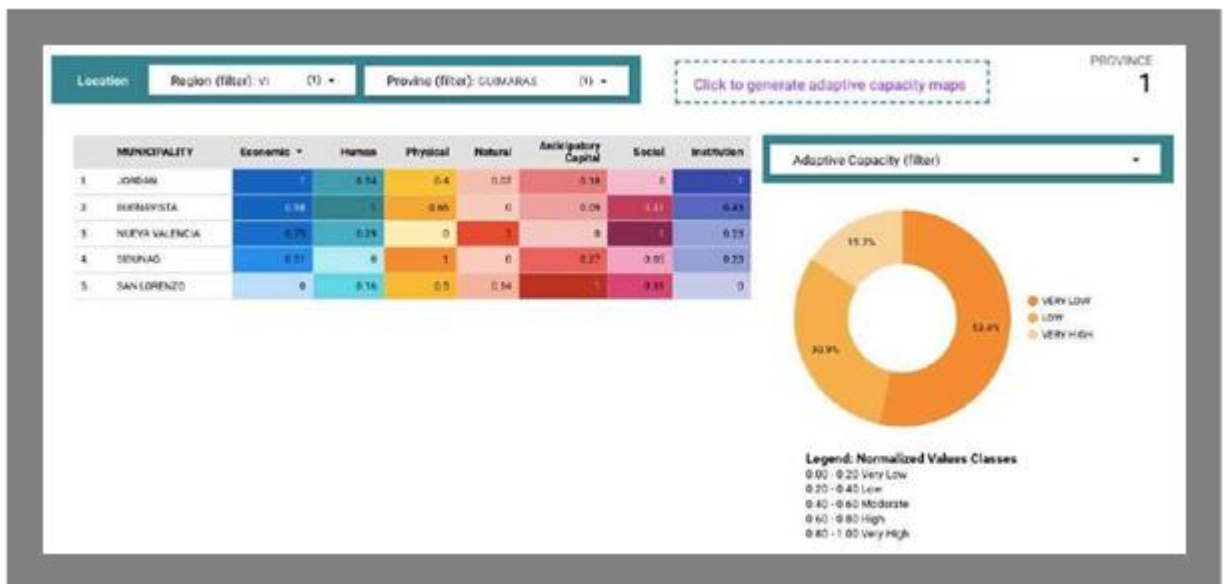


Figure 4. Adaptive Capacity of Guimaras Province.

- Fill up the template to reflect the description of values based on the legend for sensitivity, hazard and adaptive capacity. For sensitivity, reflect “gain”, “loss”, or “no change” depending on the score or numerical value using the legend as your reference. For hazard and adaptive capacity, reflect “very low”, “low”, “moderate”, “high”, “very high” depending on the score or numerical value using the legend as your reference as shown in figure 5.



A	B	C	D	E	F
PROVINCE:	GUIMARAS				
COMMODITY	MANGO				
Indicators	Vulnerability Index of a Commodity per Municipality				
	BUENAVISTA	JORDAN	NUEVA VALENCIA	SAN LORENZO	SIBUNAG
Overall vulnerability class	LOW	LOW	VERY LOW	VERY HIGH	VERY HIGH
Climate sensitivity (negative, positive or no change)	LOSS	NO CHANGE	GAIN	NO CHANGE	NO CHANGE
Hazards (very low, low, moderate, high, or very high)	VERY HIGH	MODERATE	VERY LOW	LOW	HIGH
Tropical cyclone	VERY HIGH	HIGH	VERY LOW	HIGH	HIGH
Flood	LOW	VERY LOW	VERY HIGH	VERY LOW	HIGH
Erosion	VERY HIGH	VERY HIGH	VERY LOW	MODERATE	MODERATE
Landslide	VERY HIGH	HIGH	VERY LOW	LOW	MODERATE
Drought	VERY HIGH	VERY HIGH	VERY LOW	MODERATE	MODERATE
Sea level rise	MODERATE	VERY LOW	VERY HIGH	MODERATE	VERY HIGH
Storm surge	MODERATE	VERY LOW	HIGH	VERY HIGH	VERY HIGH
Salt water intrusion	VERY LOW	VERY LOW	VERY LOW	VERY LOW	VERY LOW
Adaptive capacity (AC) (very low, low, moderate, high, or very high)	VERY LOW	LOW	VERY LOW	VERY HIGH	VERY HIGH
Economic	VERY HIGH	VERY HIGH	HIGH	VERY LOW	MODERATE
Natural	VERY LOW	VERY LOW	VERY HIGH	VERY LOW	VERY LOW
Social	MODERATE	VERY LOW	VERY HIGH	LOW	VERY LOW
Human	VERY HIGH	MODERATE	LOW	VERY LOW	VERY LOW
Institutional	MODERATE	VERY HIGH	LOW	VERY LOW	LOW
Physical	HIGH	MODERATE	VERY LOW	MODERATE	VERY HIGH
Anticipatory capitals	VERY LOW	VERY LOW	VERY LOW	VERY HIGH	LOW
Adapted from: DA, CRVA-PCIP Integration Process Narrative, January 2021.					
List of PCIP Templates		P3A Commodity Prio	P3B RA 4	P3B RA 5	P3D VC 8

Figure 5. Risk profile of mango in the municipalities of Guimaras.

## Guide in Generating Maps from the Planners' Portal

### 1. Generating the Vulnerability Map

The vulnerability map can be generated from the Planners' Portal through the CRVA dashboard. The image below shows a sample of what you will see from the dashboard.

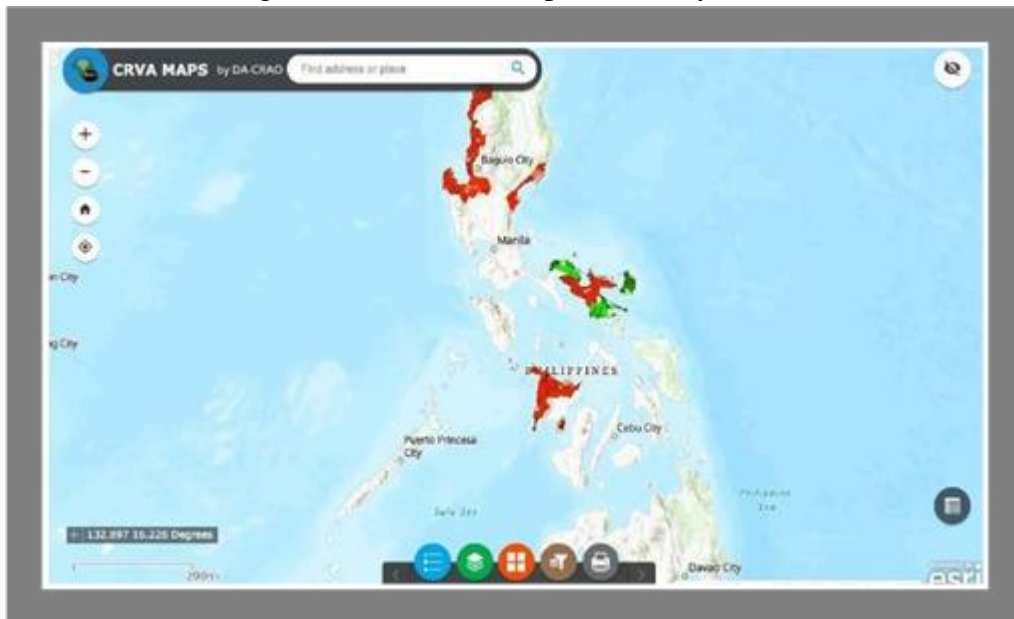


Figure 6. CRVA Map from the Planners' Portal

From the map, click the brown icon for “Group Filter”, select the province of Interest and click “apply”. The map will zoom in to your province of interest. The image below shows a screenshot of the map for the province of Guimaras.

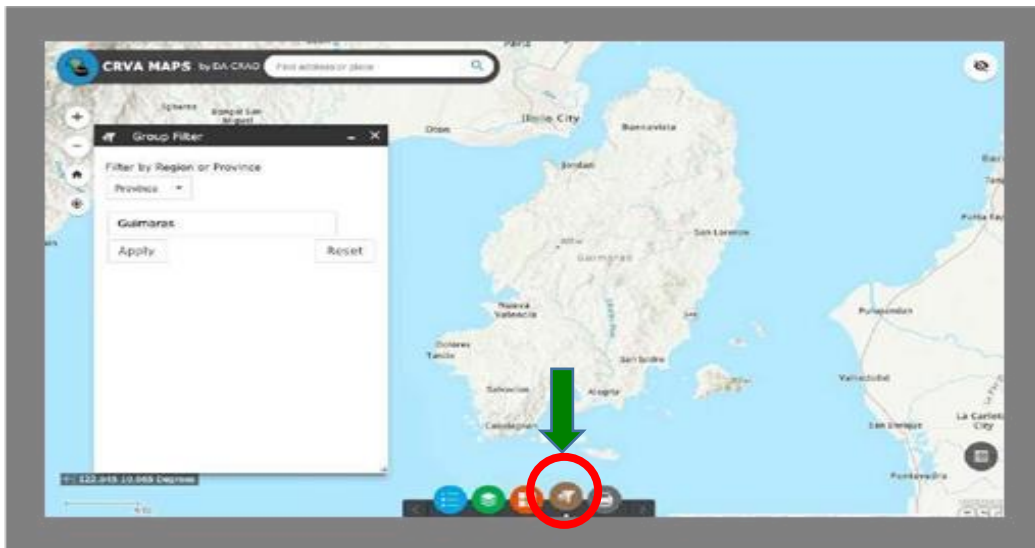


Figure 7. Filtering to province of Guimaras

To generate the vulnerability map, go back to the options below the map and click the green icon for “Layer List”. Click the checkbox for “VA Class”. The image below is a sample generated vulnerability map for the province of Guimaras.

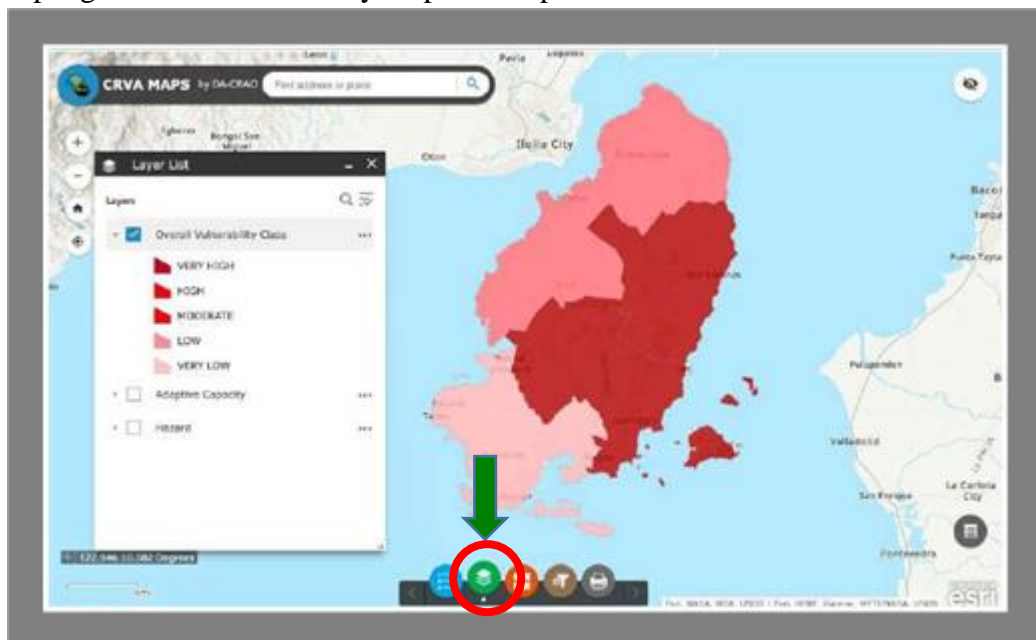


Figure 8. Guimaras Overall Vulnerability Classification

## 2. Generating Hazard Map

To generate the hazard map, click the checkbox for “Hazard Class”. The image below is a sample generated hazard map for the province of Guimaras.

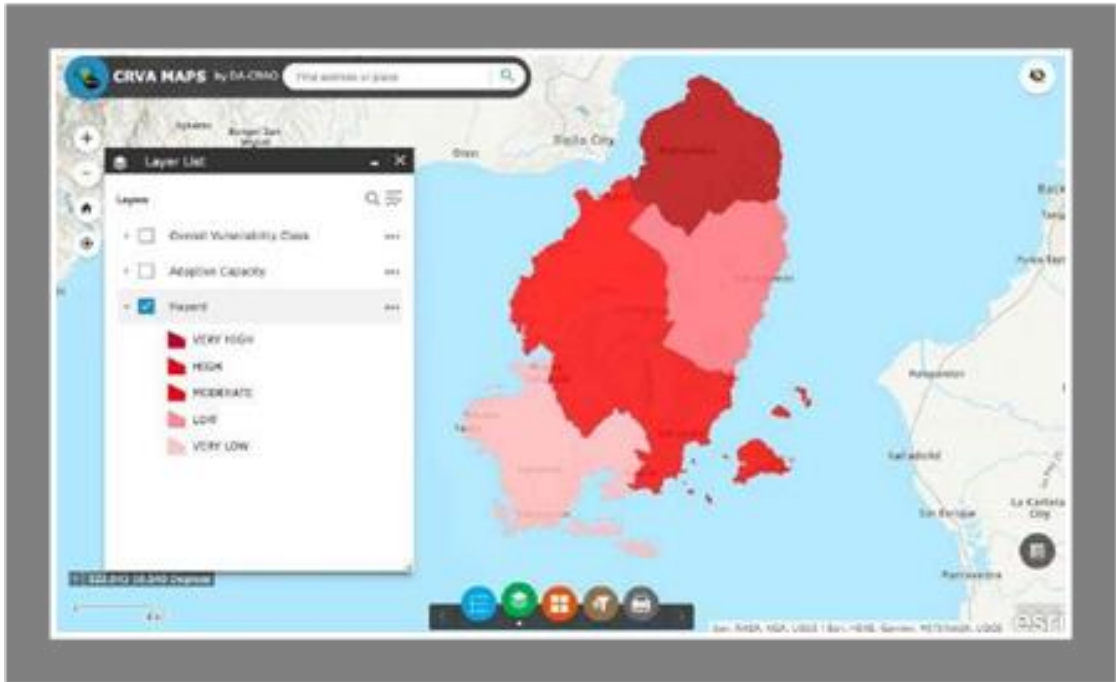


Figure 9. Hazard Map of Guimaras Province

If you want to generate a map for a specific hazard index, you may access a separate map for hazards through a link provided next to the dashboard for hazard.



Select the province of interest from the “Group Filter” (brown) button then click on the green button for “Layer List” and select the checkbox for a specific hazard you want to filter.

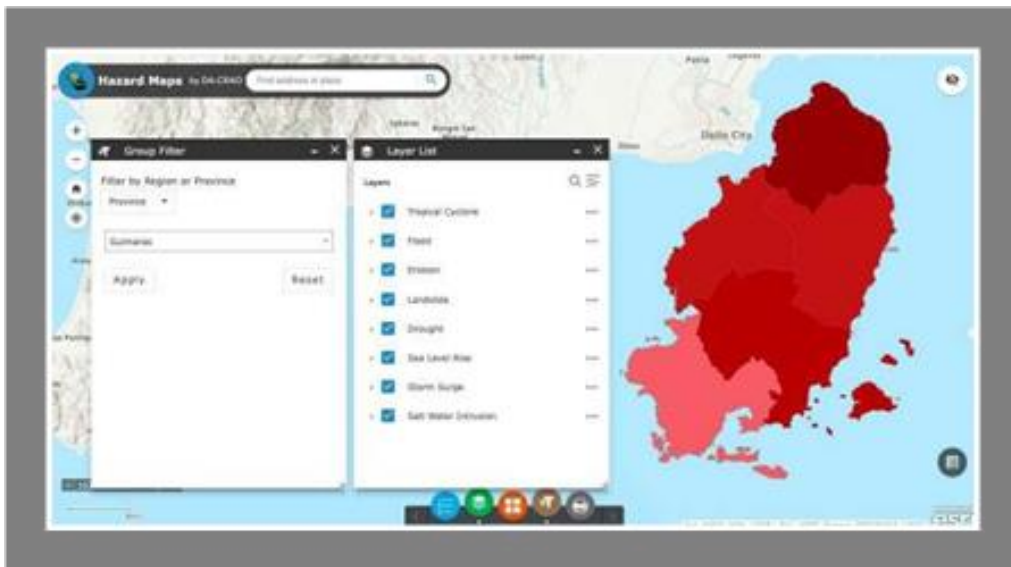


Figure 10. Specific hazard Map of Guimaras Province

### 3. Generating Adaptive Capacity Map

Back to the main dashboard, to generate the adaptive capacity map, click the checkbox for “AC Class”. The image below is a sample generated adaptive capacity map for the province of Guimaras.



Figure 11 Adaptive Capacity Map of Guimaras Province

If you want to generate a map for a specific adaptive capacity capital, you may access a separate map for adaptive capacity through a link provided next to the dashboard for adaptive capacity.



Select the province of interest from the “Group Filter” (brown) button then click on the green button for “Layer List” and select the checkbox for a specific AC capital you want to filter.



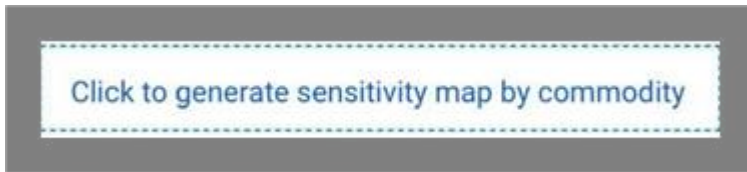
Figure 12 Specific Adaptive Capacity Map of Guimaras Province



Please note that hazard and adaptive capacity indices are not commodity specific. The maps generated for hazard and adaptive capacity may be used under Chapter I of the PCIP document as additional information for the profile of the province.

#### 4. Generating the Sensitivity Map

Since data for sensitivity are commodity specific, the sensitivity map, together with other maps (Hazard, Adaptive Capacity, Vulnerability), may be included under Chapter III of the PCIP after presenting the EVSA map. To generate the sensitivity map, find the “Click to generate sensitivity map by commodity” button next to the dashboard for Sensitivity.



Click the brown icon for “Group Filter”, select the province of interest and click “apply”. The map will zoom in to your province of interest. Go back to the options below the map and click the green icon for “Layer List”. Click the checkbox for the commodity of interest. The image below is a sample generated sensitivity map for mango commodity of Guimaras.

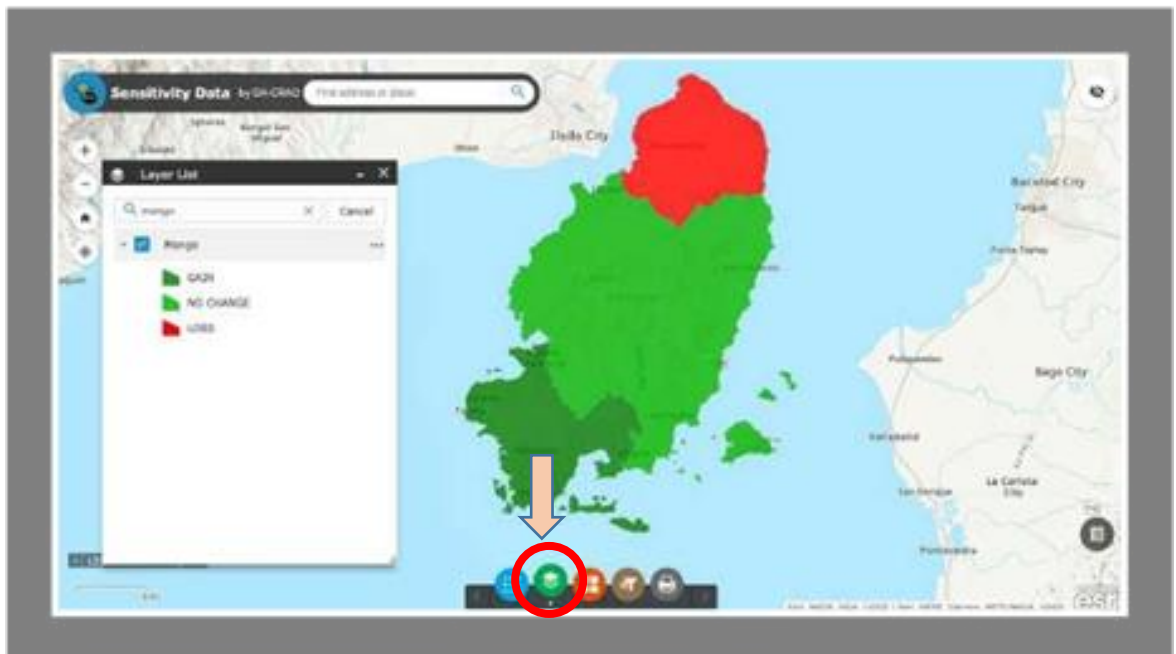


Figure 13. Sensitivity Map of Mango in Guimaras

#### 5. Printing the Map

This process will apply to all the generated map. Click the printer icon. You can choose paper layout and format.

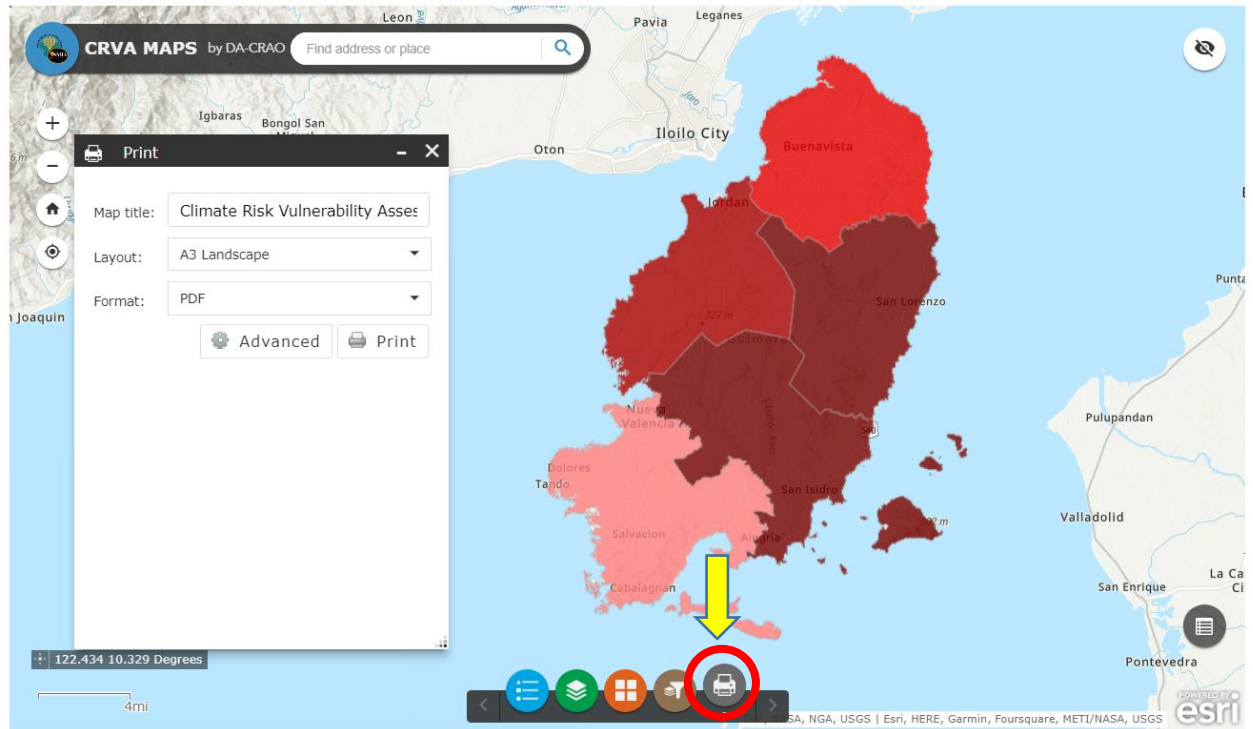
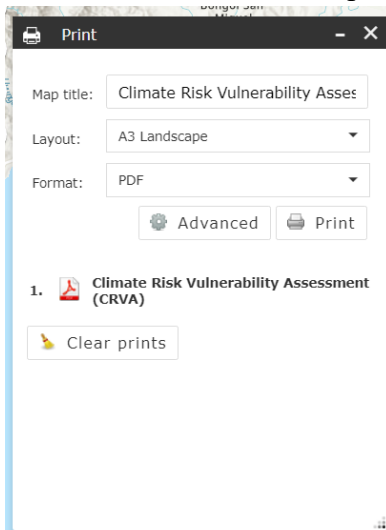


Figure 14. Printing of CRVA Map

Click "Print" and save the pre-generated CRVA map.



## Estimating Road Influence Area

### Road Influence Area (RIA)

The RIA, also known as the zone of influence, is the area of a rehabilitated or new road where the project impacts are expected (World Bank, 2005; Van de Walle, 2008; Morgan, 2013; and Jerve, 2013). The RIA specifies the boundary of an area where the beneficiaries are located, delineates areas of direct and indirect impacts, and indicates where there could be possible spillover.

The advantages of performing the RIA analysis includes:

- Generation of rich information set related to the socio-demographic profile of the area's population, geographical profile or topography, and existing road networks
- Assistance to project planning and policy-making
- Ex-ante economic analysis and ex-post impact analysis

The RIA kilometer band approach considers areas that fall under the 2.5-kilometer band extending from both sides and end of the road. This methodology can be adjusted depending on several factors and allows clear marking between direct and indirect benefits and tempers the spillover from other projects. In general, RIA of PRDP should exclude the RIA of existing concrete roads with better road quality. Only the net serviceable production areas within the 2.5-kilometer band are to be considered as RIA of the subproject as seen in Figure 1

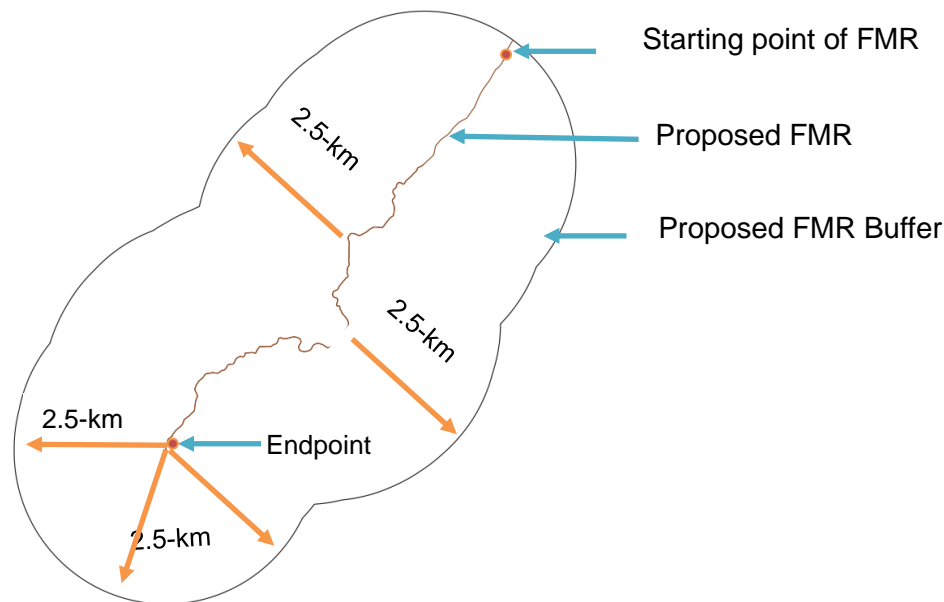


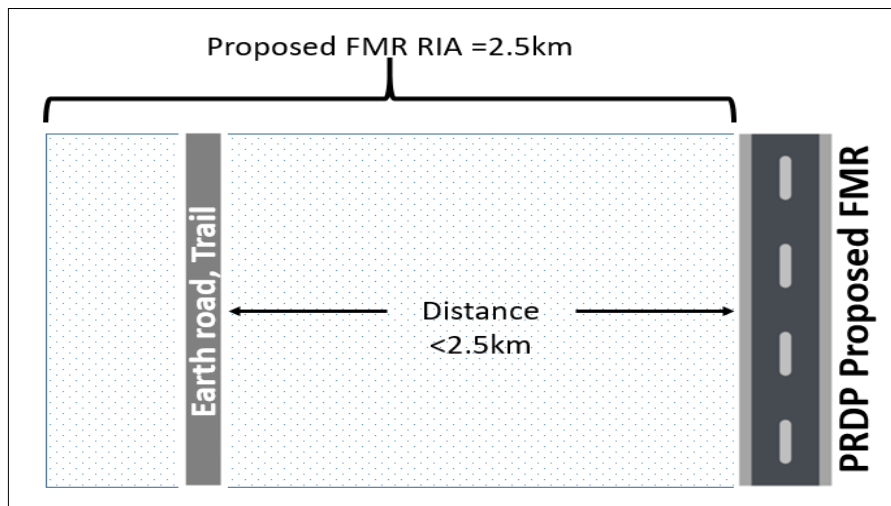
Figure 1. 2.5 kilometer buffer RIA of PRDP Proposed FMR.

For sole-access roads (i.e., end of proposed road will not connect with an existing road except narrow earth trails passable only on foot, animals, or two-wheeled vehicles), the 2.5-kilometer distance from the end of the proposed road can be extended up to a maximum distance of 5.0 kilometers. Notwithstanding, this base rule will be subjected to various site-specific considerations and exemptions to get the final road influence area estimation.

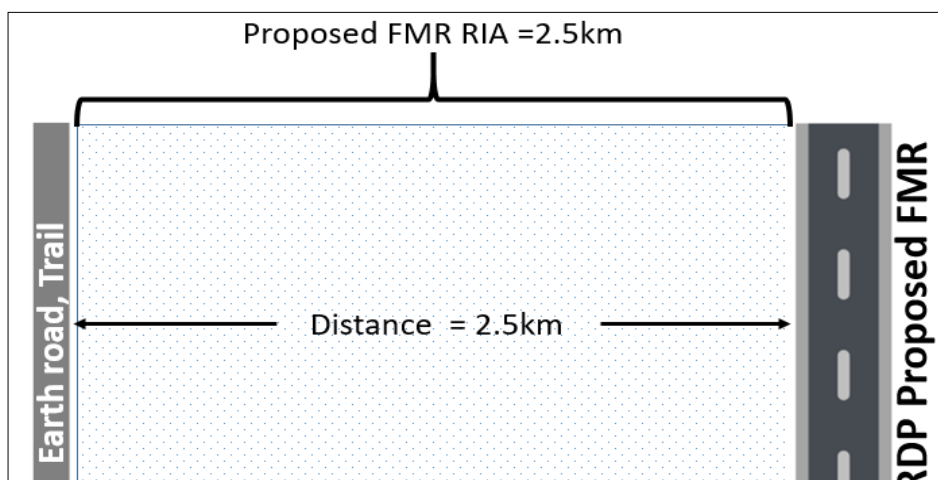
*Considerations and exemptions to the 2.5-km band rule*

- 1) Marginal production areas can be included in the RIA of subprojects. In cases when the impact of the FMR includes the establishment of new agricultural areas within the RIA of existing roads, the additional production areas can be included as benefits of the project.
- 2) For stand-alone bridges that provide sole access, the RIA would cover the whole area the bridge would provide access to, leading to the market. It may extend more than the 5-kilometer limit.
- 3) If the proposed road is parallel with a lower quality road (i.e., dilapidated/intermittent/single-lane PCCP, gravel road, earth road, trail and tire paths), the following analysis applies:

- a. Distance between the two roads < 2.5 km: The effective RIA of PRDP is 2.5 km, notwithstanding the presence of the road it is parallel to.



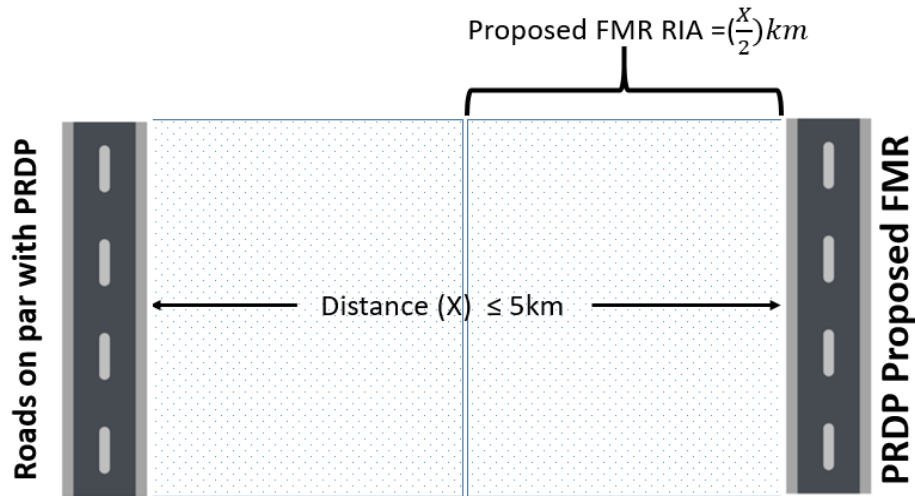
- b. Distance between the two roads = 2.5km: The effective RIA of PRDP will cover the full 2.5 km.





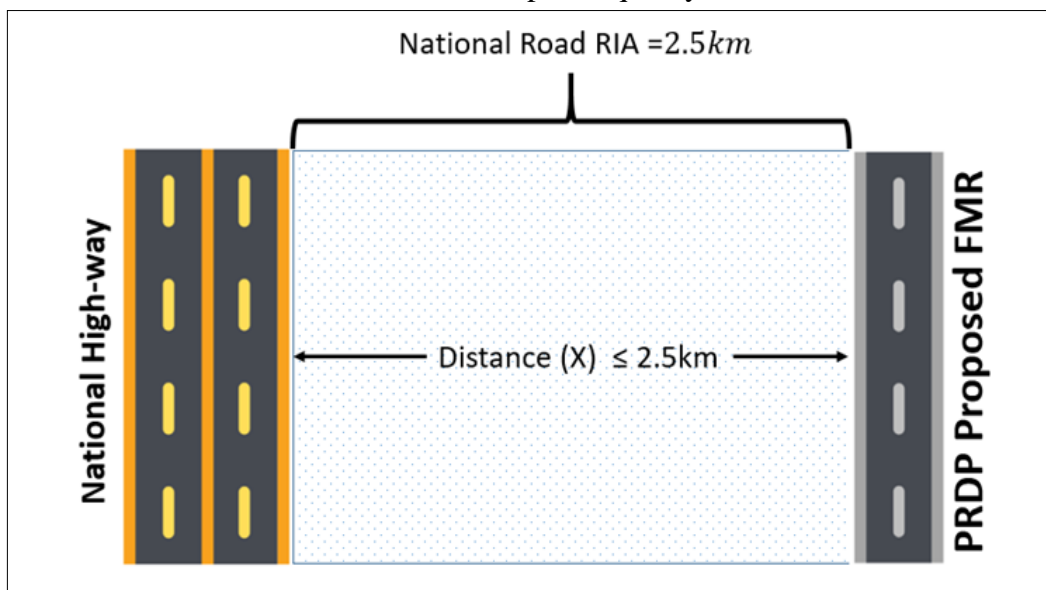
- c. Distance between the two roads is greater than 2.5 km: The effective RIA of PRDP will cover the full 2.5 km.

- 4) If the proposed road is parallel to a road that has a quality on par with PRDP standards, the effective RIA of PRDP is equal to half of the distance between the two roads. The maximum effective RIA is 2.5 km.

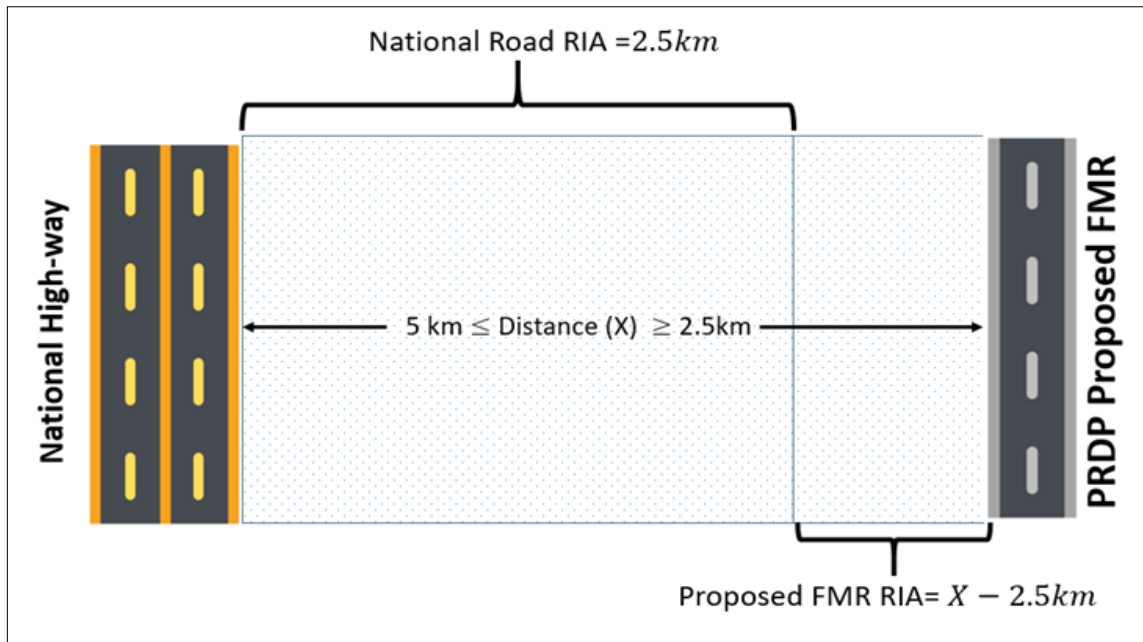


- 5) If the proposed road is parallel with a higher quality road (i.e., National Road), the following analysis applies:

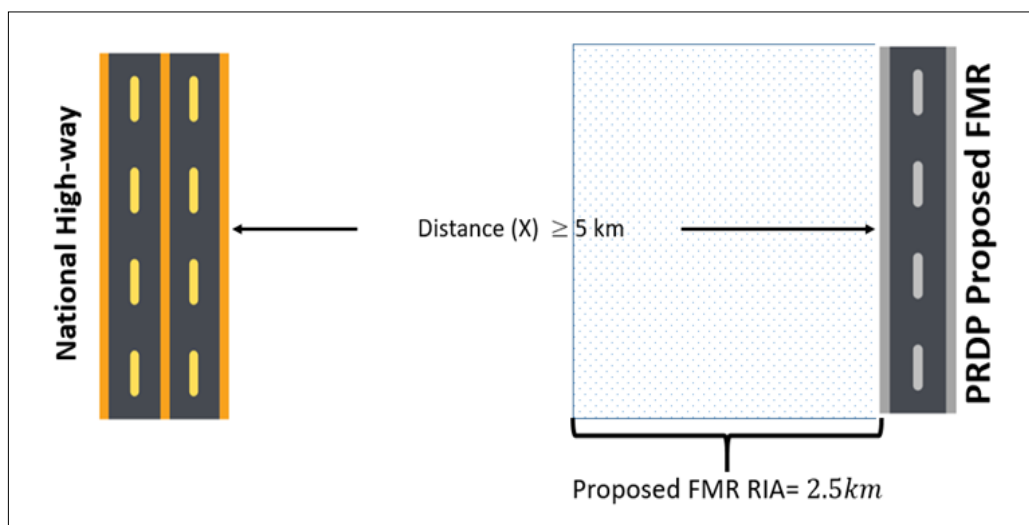
- a. Distance between the two roads less than or equal to 2.5 km: The effective RIA of PRDP is zero, in consideration of the superior quality of the national road.



- b. Distance between the two roads is between 2.5 km and 5km : The effective RIA of PRDP is anything that's left after the national road RIA of 2.5 km has been deducted, in consideration of the superior quality of the national road.

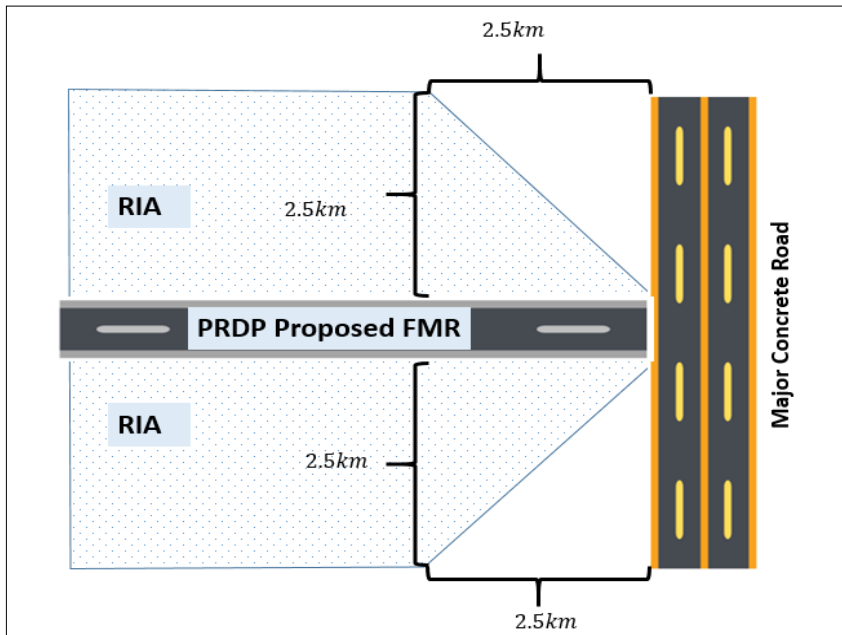


- c. Distance between the two roads is greater than 5km: the effective RIA of PRDP will be 2.5km.

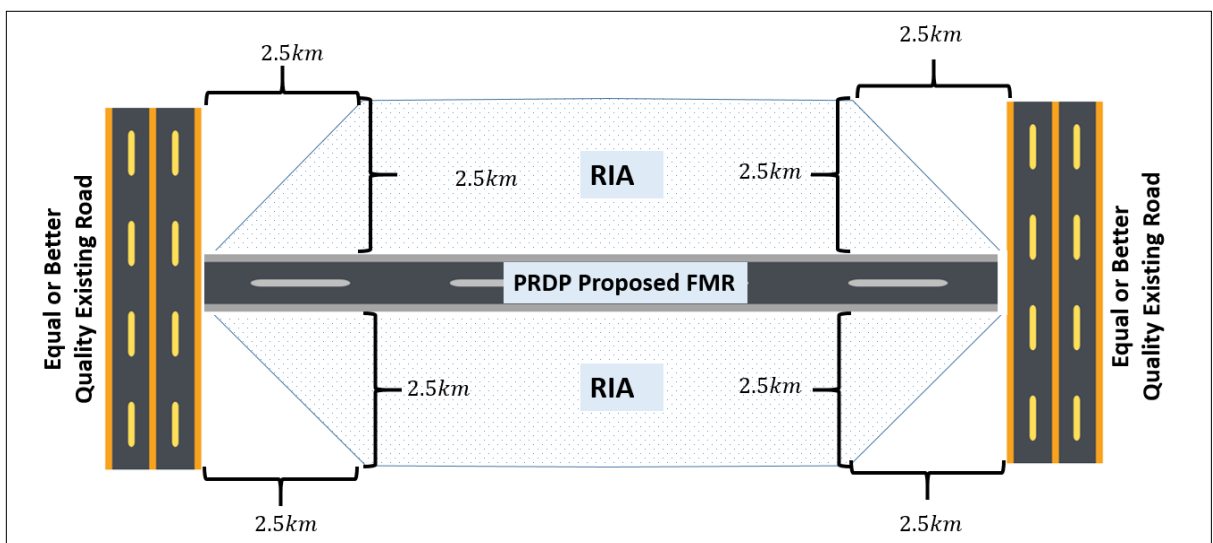


- 6) If a proposed road is perpendicular to an existing road that has equal or better quality than PRDP standards, the following analysis applies in the following case scenarios:

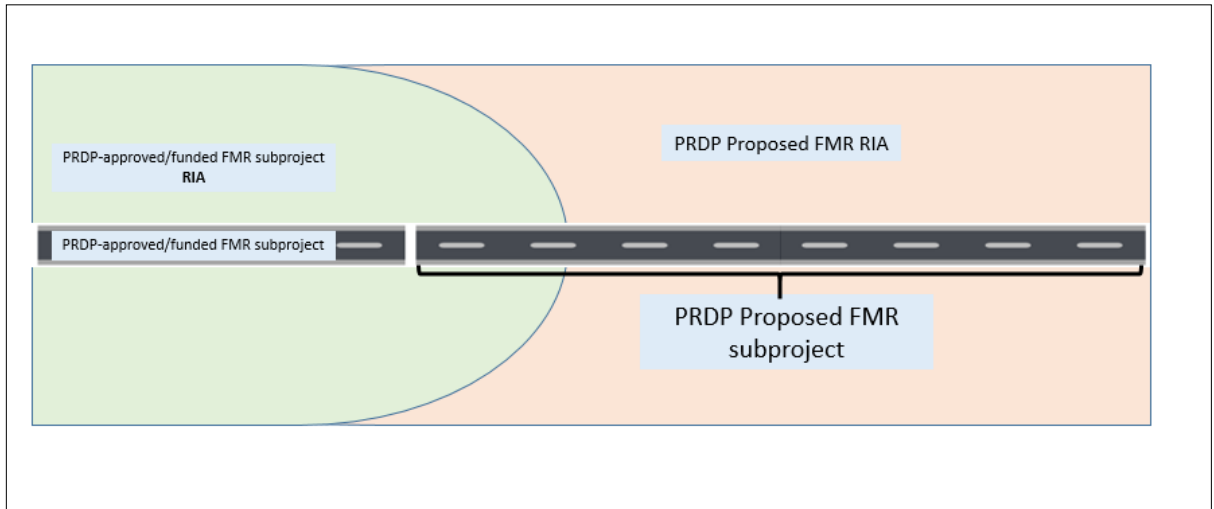
- a. Proposed road connects with an existing road at or near Sta. 0+000, RIA computation at the junction or Sta. 0+000 is zero and increasing following a diagonal shape towards the maximum allowable RIA at the end of the proposed road, taking into consideration the tributary divisors and topography.



- b. Proposed road connects with existing roads at both start and end, RIA computation at each junction shall be zero and increasing diagonally towards the maximum allowable RIA at mid-point, taking into consideration the tributary divisors and topography.



- 7) For proposed subprojects that will connect with a previously PRDP-approved/funded FMR subproject, RIA of the proposed road shall exclude any RIA section of the previously funded subproject that may overlap with the RIA of the proposed road.



- 8) For proposed roads with tributary divisors (rivers, creeks, streams, etc.), separated by mountains, or located along coastline; RIA computation will vary depending on factors such as tributary boundary, accessible slope and coastline. For roads with tributary divisors, unless a bridge connects to its divisor, the 2.5-kilometer RIA rule will be adopted. And for mountainous areas, if the proposed road will serve as a road network connecting to agricultural tramline systems to facilitate transport of farm produce from adjacent mountainous areas, the proposed FMR'S RIA can also extend to the tramline's service area.

### 1. Tributary Divisor

For proposed roads with a tributary, the RIA computation will vary based on the tributary boundary (covering only up to 294 meters), as illustrated in Figure 2. Unless a bridge connects the tributary divisor, the 2.5- kilometer km RIA rule will be adopted.

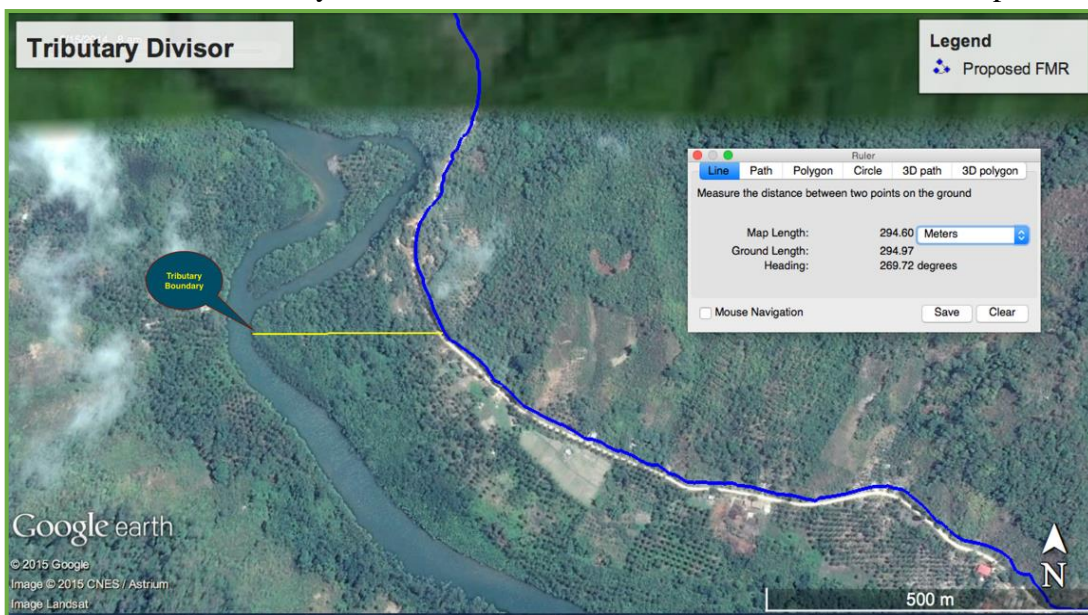


Figure 2. Exemption to 2.5 km RIA rule: Tributary Divisor

## 2. Mountainous Area

For proposed roads located in mountainous areas, the computation of RIA will be based on the elevation and slope, as illustrated in Figure 3. The elevation profile will determine the degree of the slope that can be traversed (both sides) by the proposed road.

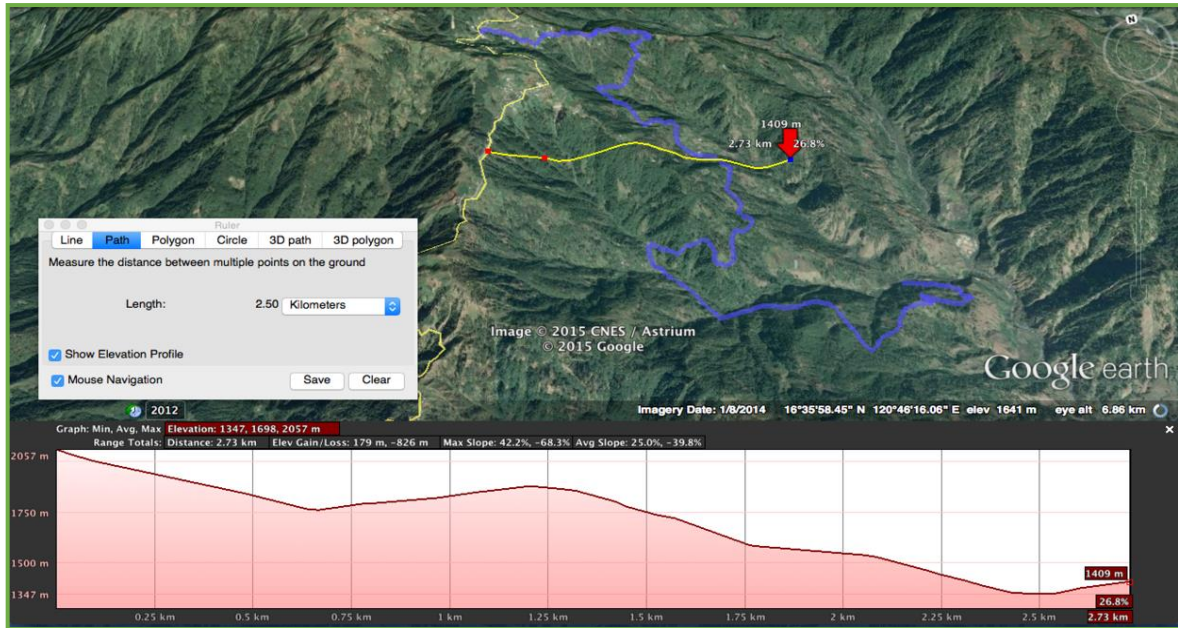


Figure 3. Exemption to 2.5 km RIA rule: Mountainous Area

The map above presents the 2.5-km radius for the RIA of the national road. However, the elevation profile shows that portions of the RIA, specifically the areas reaching a 1.25-km distance from the national road, are inaccessible from the proposed FMR. Thus, the RIA of the proposed FMR will be limited to accessible distances. Referring to the elevation profile above, these accessible areas would be the distances from the 1.25-km mark until the 2.5-km mark.

If the proposed FMR will serve as a road network connecting to agricultural tramline systems to facilitate transport of farm produce from adjacent mountainous areas, the proposed FMR'S RIA can also extend to the tramline's service area.



### 3. Coastal Zone

For proposed roads along coastal areas, the RIA computation will be limited to the coastal zone, as illustrated in Figure 4. The map below illustrates an FMR in a coastal zone wherein the proposed road will only have a RIA coverage of up to a radius of 1.64-km kilometers towards the coastal zone.

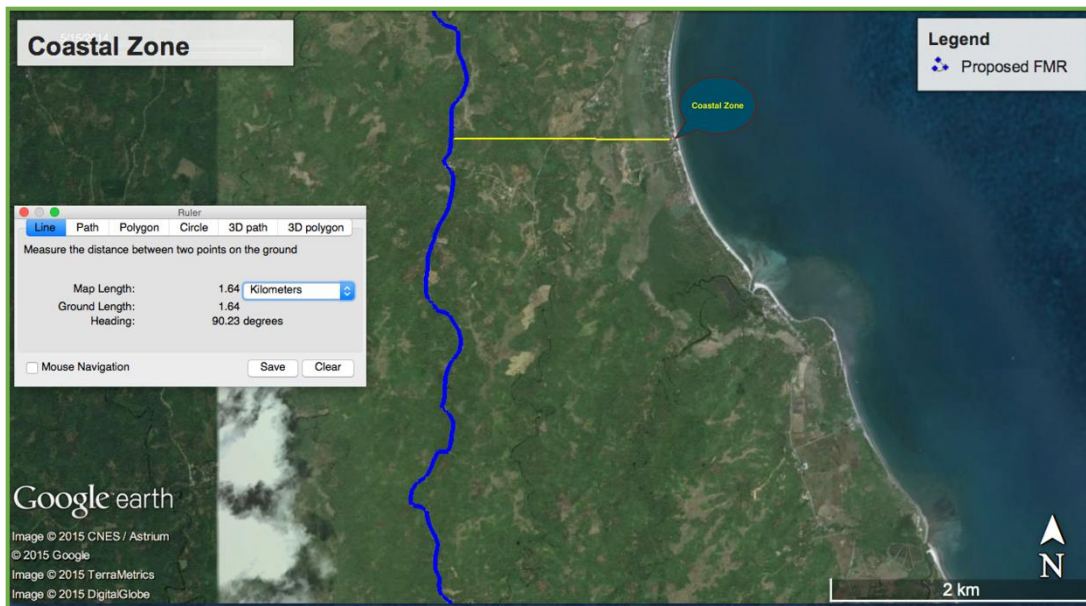


Figure 4. Exemption to 2.5 km RIA rule for: Coastal Zones

For more information in generating road influence areas using GIS methodology you may refer to [RIA analysis Kilometer band Approach](#).

## Annex 6 Remote Sensing Users Guide

### Integrating Remote Sensing Technology to Enhance the Geomapping System of the Philippine Rural Development Project (PRDP) for Precise Decision-Making in Farm-to-Market Road Investments

#### USERS' GUIDE

##### I. Introduction

The Philippine Rural Development Project (PRDP) is one of the flagship programs of the Department of Agriculture designed to address the gaps in the commodity value chains by improving the efficiency of the food supply chain towards greater connectivity, mobility, accessibility, availability, and affordability of food in the market.<sup>1</sup>

Interventions include rebuilding the whole value chain, improving the food supply chain and logistics, prioritizing farm-to-market roads (FMRs) with value chain infrastructure support, including rice and corn focusing on value addition, and mainstreaming of institutional reforms in the DA programs and projects. One of the key interventions of the project is the construction of farm-to-market roads (FMRs) with value chain infrastructure support across the country.

The PRDP has a huge portfolio of Farm-to-Market Road (FMRs) and FMRs with Bridge, amounting to Php 63 Billion or 83% of the overall total investments of the Project for rural infrastructure or equivalent to 528 subprojects and 4,000 kilometers that are expected to be built across all 16 regions and 82 provinces in the Philippines by the year 2028.

Table 1. Infrastructure Portfolio by Type as of May 05, 2023

Type of Subprojects	Number of Subprojects	Unit Measure	Quantity	Total	
Farm to Market Road (FMR)	448	Kilometer	3,248.34	47,729,776,564.50	
FMR with Bridge	80	Kilometer	760.40	15,376,821,635.95	
Bridge	40	Hectare	3,801.66	552,972,612.54	
Potable Water Supply (PWS) Level 2	95	Number of Households	70,406	3,172,623,986.51	
Others	311	Square Meter	317,827.53	8,500,382,862.79	
Total	986			75,956,424,892.89	

To effectively manage the subprojects of the PRDP, given the limitation and resource requirement

for regular physical site visits. The <sup>2</sup>Geomapping System was established as a web-based platform to serve as a Decision Support Tool (DST) to efficiently manage, process and store geospatial data and information. This system is in-house developed with the purpose to address challenges in subproject validation, implementation, monitoring, and evaluation. The system features include the expanded Vulnerability and Suitability Assessment, Integrated Roads on Agri-Fishery Development (i-ROAD) System, Road Influence Area Mapping, web-based geotagging technology, and Unmanned Aerial Vehicle (UAV) or drone utilization. Further, the pandemic crisis pushed the project to utilize the Geomapping System as an effective alternate mode for doing field visits and reviewing FMR proposals.

The Expanded Vulnerability and Suitability Assessment (eVSA). The eVSA helps planners determine the relative suitability of a commodity in a province and ranks respective municipalities according to its best fit agro-edaphic qualities.

The Integrated Roads on Agri-Fishery Development (i-ROAD) System provides an interactive platform for consolidating the FMR database and creating an FMR dashboard for real-time monitoring and geospatial analysis for more informed decision-making.

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<sup>1</sup>Philippine Rural Development Project (PRDP) Scale-Up, Frequently Asked Questions and PRDP Infrastructure Portfolio, [www.prdp.da.gov.ph](http://www.prdp.da.gov.ph), May 2023.

<sup>2</sup> A spatial mapping technique used to represent geographic data (i.e., agricultural patterns, crop production, and land suitability) into an online interactive visual map that aids in targeting and prioritizing development interventions.

The Applied Geotagging Tool (AGT) has strengthened transparency and accountability mechanisms as it is able to deter overlapping proposals, insubstantial road influence area, overestimation of data, and duplication/parallelism to existing roads ensuring cost-efficient investments.

Despite this technological advancement, the Philippine Rural Development Project (PRDP) and the Department of Agriculture as a whole are still facing limitations in providing real-time evidence-based information related to farm-to-market road (FMR) investments particularly to produce precise geospatial data on land use classification, land cover changes, and crop delineation of specific infrastructure investments which is vital in planning and evaluation of project impacts to the agriculture sector.

Lastly, in instances where climate externality occurs in the Project's coverage areas the limitation to quickly provide real-time or on-demand information on the extent of damages to infrastructures and agriculture areas is quite a challenge.

## **II. Problem Statement**

Despite the establishment of a Geomapping System, the Department of Agriculture- Philippine Rural Development Project (PRDP) is still facing limitations in generating evidence-based information for decision-making related to farm-to-market road (FMR) investments due to a lack of precise geospatial data on land use classification, land cover change analysis, and crop delineation. For instance, the existing system will not be able to answer crucial information such as the following:

1. How many areas of agricultural land have been supported by the Project based on funded FMR?

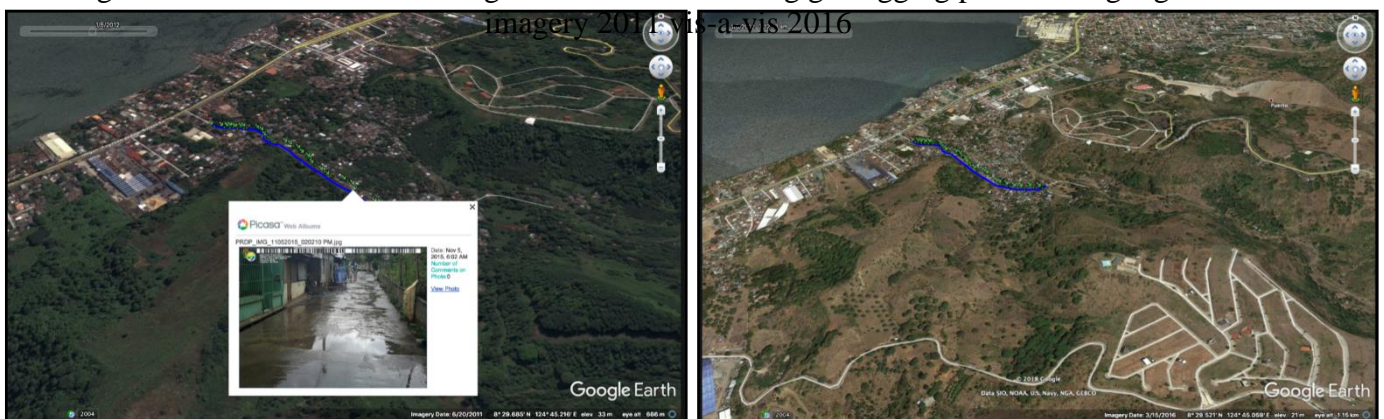


2. Did the farmer-beneficiaries located in this agricultural area expand their land for agricultural production and related activities?
3. How much investment in PRDP-FMR has been implemented towards the improvement in the value chain of priority commodities?
4. In the case of climate vulnerability, where are the investments that are most affected by typhoons, flooding, and landslide? Are climate mitigation strategies applied to these investments?

The absence of the above information hinders the effective planning, monitoring, and evaluation of FMR projects. Integrating remote sensing technology into the PRDP's geomapping system could address these limitations and provide accurate and real-time information on infrastructure and crop areas, ultimately improving the efficiency and effectiveness of FMR investments.

Furthermore, the Project would like to avoid proposals that will not exhibit benefits to address the gaps in the commodity value chains, particularly the food supply chain from production areas to the market and or the consumer's table. A concrete example in Figure 1, can be observed that the FMR constructed was along a built-up area (left), and recent satellite imagery (right) would suggest that residential subdivisions are developing within the vicinity.

Figure 1. Virtual visits of DA-regular funded FMR using geotagging photos and google earth



### III. Methodology

Remote Sensing technology can provide precise and real-time data on land use classification, land cover change analysis (before and after scenario), and crop delineation in specific FMR sub-project. In order to address the limitations in generating the above information for decision-making related to farm-to-market road (FMR) investments, the DA-PRDP should consider integrating remote sensing technology into the existing Geomapping System. It is recommended that the following enumerated steps below will be conducted to achieve the proposed integration.

- (i) To select appropriate remote sensing procedures and available satellite data that can generate precise land use classification, land cover change analysis, and crop delineation.

(ii) To generate an initial result and an overall analysis, to potentially address the information gap requirement.

(iii) To determine the potential integration of generated results on land use classification, land cover change analysis, and crop delineation using the Geomapping System.

## A. Study Area and Data

### a. Study Area

This research intends to cover the 16 regions of the Project areas across the country, with a total number of 515 FMR Projects that have polyline data (shp file) in the Geomapping System database. Figure 2 and Figure one showcased the specific locations and list of FMRs by Region, to capture the entire picture of the study area.

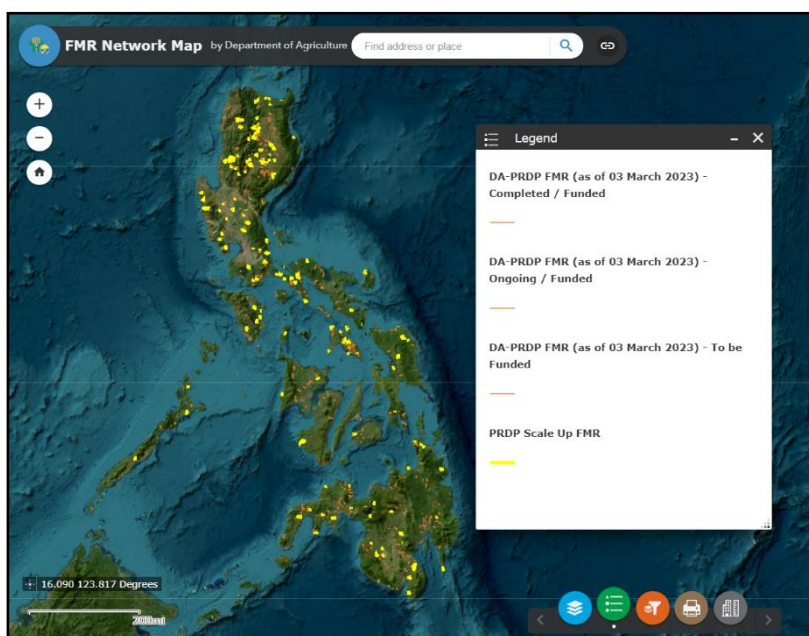


Figure 2. Map of the specific location of the PRDP FMR in the IROAD database.

Table 2. No. of FMR Projects by Region

Region	Farm to Market Road (FMR)	FMR with Bridge	Total
BARMM	21	1	22
CAR	32	8	40

Region I	7	5	12	
Region II	39	8	47	
Region III	32	4	36	
Region IV-A	38	5	43	
Region IV-B	17	10	27	
Region V	30	2	32	
Region VI	41	13	54	
Region VII	15	6	21	
Region VIII	12		12	
Region IX	23	2	25	
Region X	41	3	44	
Region XI	23	6	29	
Region XII	44		44	
Region XIII	22	5	27	
Total	437	78	515	

***b. Remote Sensing Data***

The classified Land Use/Land Cover Sentinel-2 imagery at 10m resolution, was obtained from the ArcGIS living atlas repository (<https://livingatlas.arcgis.com>). The Land Use/Land Cover (LULC) is derived from ESA Sentinel-2 imagery at 10m resolution, generated from Impact Observatory’s deep learning AI land classification model used a massive training dataset of billions of human-labeled image pixels developed by the National Geographic Society. The global maps were produced by applying this model to the Sentinel-2 scene collection on Microsoft’s Planetary Computer, processing over 400,000 Earth observations per year.

The map was produced by a deep learning model trained using over 5 billion hand-labeled Sentinel-2 pixels, sampled from over 20,000 sites distributed across all major biomes of the world. The underlying deep learning model uses 6 bands of Sentinel-2 surface reflectance data: visible blue, green, red, near-infrared, and two shortwave infrared bands. To create the final map, the model is run on multiple dates of imagery throughout the year, and the outputs are composited into a final representative map for each year.

The processing platform was accessed via Microsoft's Planetary Computer and scaled using Microsoft Azure Batch.

The year 2017 has a land cover class assigned for every pixel, but its class is based upon fewer images than the other years. The years 2018-2021 are based upon a more complete set of imagery. For this reason, the year 2017 may have less accurate land cover class assignments than the years 2018-2021.

Variable mapped: Land use/land cover in 2017, 2018, 2019, 2020, 2021

Data Projection: Universal Transverse Mercator (UTM)

Mosaic Projection: WGS84

Extent: Global

Source imagery: Sentinel-2

Cell Size: 10m (0.00008983152098239751 degrees)

Type: Thematic

Source: Esri Inc.

Publication date: January 2022

*Documentation:* <https://www.arcgis.com/home/item.html?id=d3da5dd386d140cf93fc9ecbf8da5e31>

### *c. Procedure and techniques*

1. Installed the QGIS Desktop 3.28.4 (stable version) to a Windows laptop
2. Downloaded the latest dataset (2022) on Sentinel-2 10M Land Use/Land Cover of the Philippines from [www.livingatlas.arcgis.com](http://www.livingatlas.arcgis.com). To generate the entire country, download the eight-tile datasets to wit:
  - 51Q\_20220101-20230101
  - 51P\_20220101-20230101
  - 51N\_20220101-20230101
  - 50Q\_20220101-20230101
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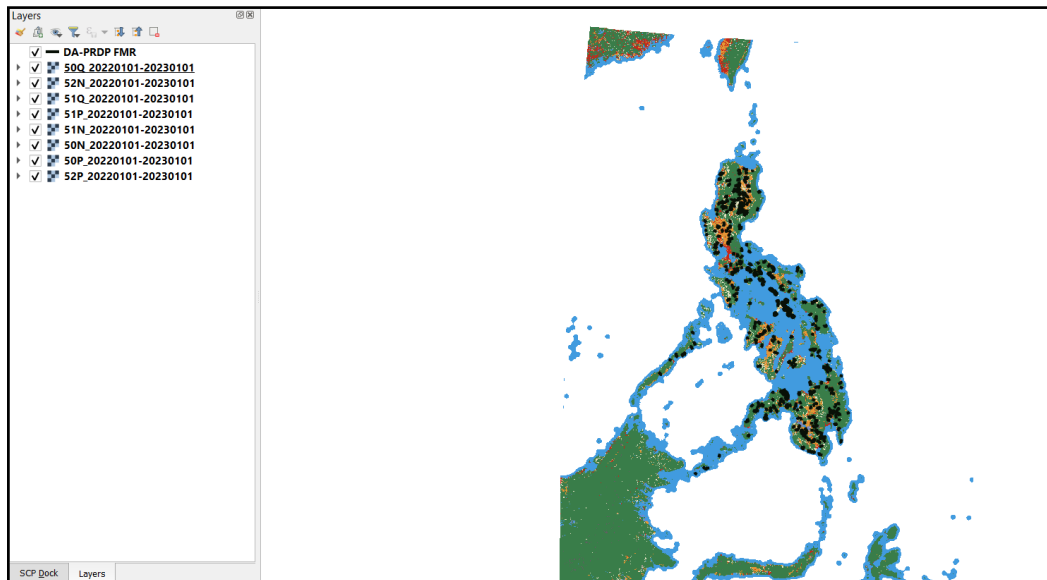
Figure 3. Screenshot of [www.livingatlas.argis.com](http://www.livingatlas.argis.com) interface for Sentinel-2 10M



### LU/LC Download

3. Load the eight (8) tiles Sentinel-2 10M LU/LC dataset and the Farm-to-Market Road File to QGIS 3.28.4, as seen in Figure 4.

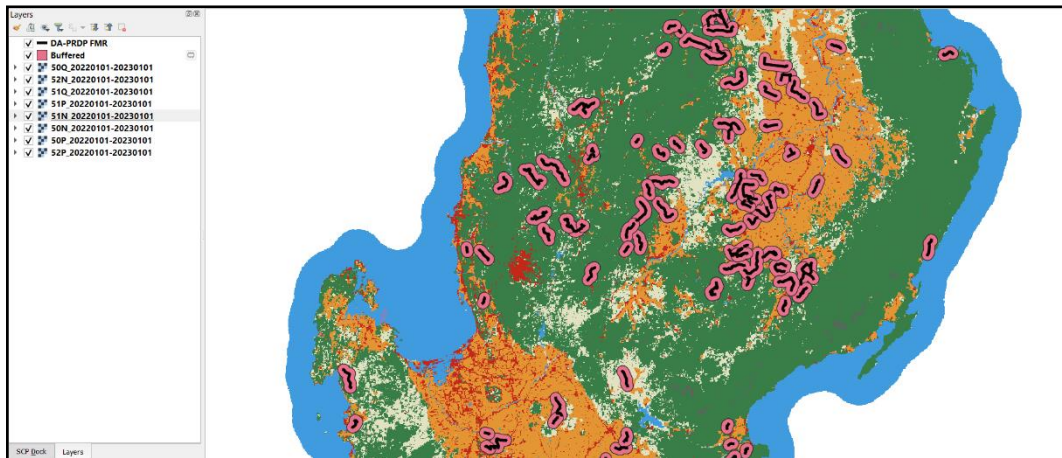
Figure 4. Screenshot of QGIS interface with the Sentinel-2, 8 tile datasets, and the FMR data.



4. To generate the expected area that a farm-to-market road will most likely impact and generate economic benefits, a 2.5 km buffer to represent the Road Influence Area (RIA) was generated for each FMR<sup>3</sup>. In QGIS, the FMR vector data were processed using a geoprocessing tool to set and generate the 2.5km band through the buffer feature. Results can be seen in Figure 5, below.

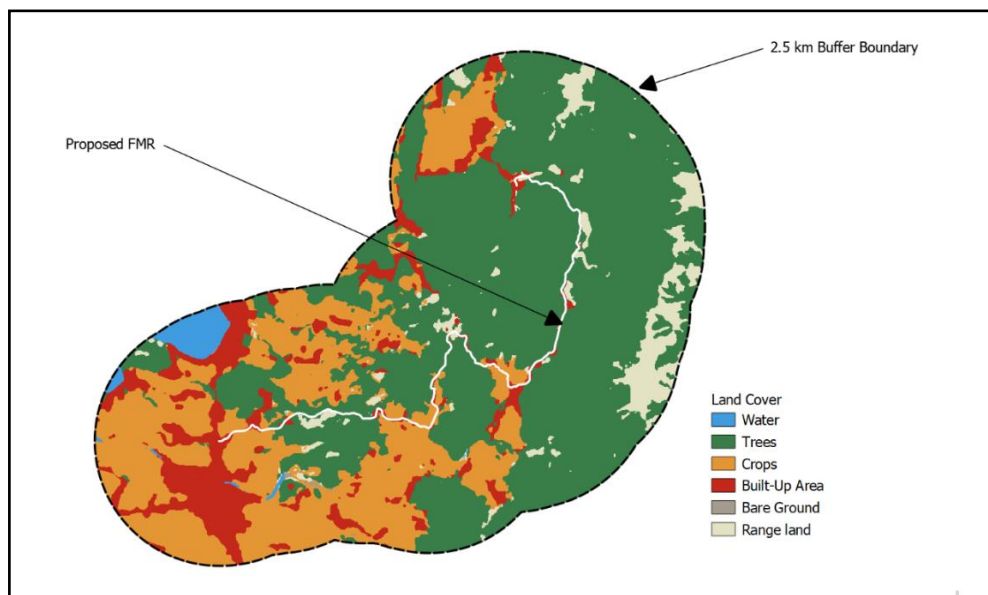
Figure 5. Screenshot of 2.5km band of each FMR vector data





5. The resulting 2.5km band of each FMR vector data, was then clipped to the sentinel 2 classified Land Use/Land Cover Sentinel-2 imagery at 10m resolution. Utilizing the clip raster with the polygon in the QGIS Processing Toolbox.
6. The final output will provide a clipped classified map of sentinel 2 LU/LC imagery of FMR subproject of the PRDP covering the 2.5km buffer as RIA. The land cover classification includes water, trees, crops, built-up area, bare ground, and range land.

Figure 6. The generated output of one of the FMRs subjected to the procedure and technique



3The RIA is the area that an FMR is expected to effectively service to ensure that the value of investments in an FMR will be much more beneficial than costly. The Project will be utilizing a 2.5-kilometer band (length of the band to be laid out on geo-mapping tools such as Geographic Information System (GIS) and AGT) from both sides of the road to estimate its area of influence.- PRDP RIA Guidelines.

7. Data from each of the final outputs were generated to compute the land area per classification and to compare each class in terms of land areas. Each number in the “DN” of the classified maps corresponds to land cover, which by then computed using the field calculator.

Figure 7. Sample DN by class and area in hectares

	DN	Area_ha	Class
1	8	0.28	Bare Ground
2	8	0.04	Bare Ground
3	8	0.03	Bare Ground
4	8	0.47	Bare Ground
5	8	1.48	Bare Ground
6	8	1.27	Bare Ground
7	8	0.01	Bare Ground

*d. Results and Integration to the Geomapping System*

Initially, only a total of 25 FMR vector data were statistically computed in 5 regions including ARMM, Region I, III, IV-B, XI, and XII due to millions of data being generated and needing some time to process through big query software. Below in Table 3, is the breakdown of No. of FMR projects by region that completed the land cover classification at a 2.5-kilometer buffer.

Table 3. No. of FMR data processed by Region

Region	No. of FMR Data Processed
ARMM	1
Region I	1
Region III	3
Region IV-B	8
Region XI	8
Region XIII	4
<b>Grand Total</b>	<b>25</b>



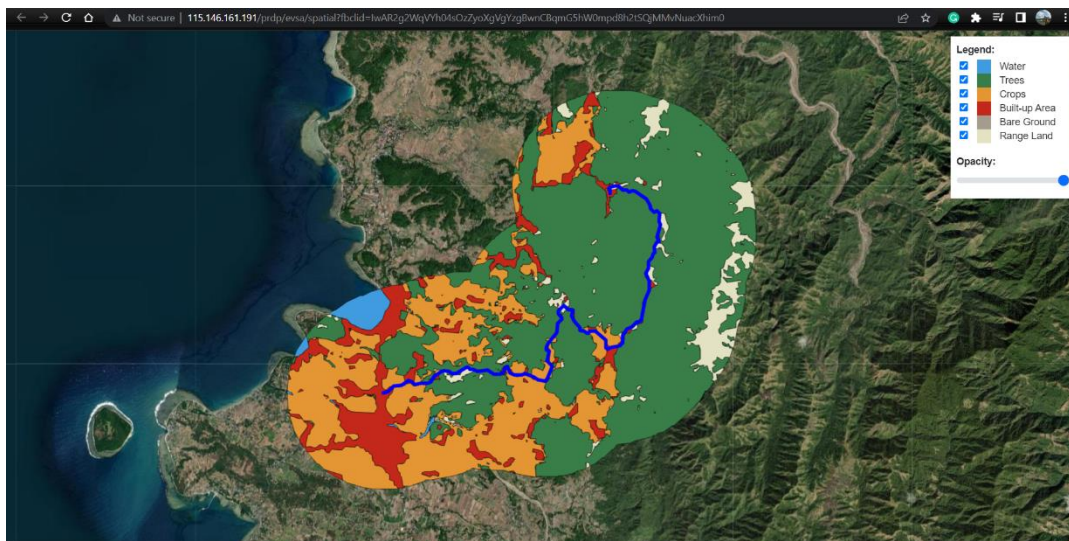
In terms of land cover by area results, the data provides an indication of the distribution and relative importance of different land cover classes in the region which be useful for understanding the location of the funded Farm-to-Market Road in both environmental and economic contexts in the agriculture sector. Below is the land cover class in hectares in the 5 regions.

Table 4. Land Cover Class by Region in Hectares (Area)

Region	Bare Ground (in has)	Built-up (in has)	Clouds (in has)	Crops (in has)	Flooded Vegetation (in has)	Range Land (in has)	Trees (in has)	Water (in has)
ARMM		63.876	0.918		0.28	3.096	4254.846	2647.052
Region I	2.056	607.776		946.542		1166.886	375.208	60.068
Region III	0.3	1582.578		535.19	0.05	580.95	1239.934	2821.942
Region IV-B	53.616	1529.724	5.736	667.28	292.622	2390.98	1503.878	16767.664
Region XI	32.212	1901.72	0.04	1251.487	0.729	549.54	10031.866	3938.444
Region XIII	5.271	698.779	0.35	827.454	7.36	399.396	6899.581	3791.142
<b>Grand Total</b>	<b>93.455</b>	<b>6384.453</b>	<b>7.044</b>	<b>4227.953</b>	<b>301.041</b>	<b>5090.848</b>	<b>24305.313</b>	<b>30026.312</b>

The integration of the resulting classified image to the geomapping system of the DA-PRDP, was successful and currently being improved through the web mapping feature of the system. The enhanced geomapping system will be rolled out at the end of the year including new features on remote sensing technology. Figure 8 uploaded the result of the classified image of a farm-to-market road to the server of the geomapping system.

Figure 8: Integration/uploading of the land use classification results to the Geomapping System ([Click to access result](#))



#### **IV. Initial Results**

From the initial processing and generated results, integrating remote sensing technology in the Geomapping System of the Philippine Rural Development Project (PRDP) can be considered as a promising solution to further improve the accuracy and precision of geospatial data to make a more informed decisions related to FMR investments.

The complementation of remote sensing technology with the existing Expanding Vulnerability and Suitability Assessment (eVSA), Applied Geotagging Technology, Unmanned Aerial Vehicle (UAV), and Geographic Information will definitely provide robust datasets of geospatial information that are essential in planning, monitoring, and evaluation of FMR projects.

The utilization of Land Use/Land Cover (LULC) Sentinel-2 imagery at 10m resolution and the existing guidelines in generating road influence area of Farm-to-Market Road has provided an accurate image classification and automated analysis on the extent of land use by classification, which was previously difficult to obtain using the existing geomapping system alone. The information generated can further be processed to help in identifying commodity areas supported by the Project, and can also serve as a basis for evaluating the impact of FMR projects in the agriculture sector.

The use of drones and Applied Geotagging Tool (AGT), is also useful in documenting areas affected by natural disasters such as typhoons, flooding, and landslides. These tools can then be utilized to compare the before and after satellite images of the affected areas, enabling the project to respond and prioritize the rehabilitation of FMRs in the affected areas.

Furthermore, the integration of remote sensing technology into the Geomapping System will improve the accuracy and precision of data, enabling stakeholders to make more informed decisions related to FMR investments. This technology can also be used to provide real-time information in the rapid response to climate externality occurrence, determining potential damage to infrastructure and agriculture areas.

#### **V. Conclusion**

In conclusion, integrating remote sensing technology into the Geomapping System of the Philippine Rural Development Project (PRDP) is a promising solution for generating precise and real-time information, enabling robust datasets of geospatial information for decision-making related to farm-to-market road (FMR) investments. This technology can provide solutions to the limitations previously faced by the Project in generating evidence-based information and can ultimately improve the efficiency and effectiveness of FMR investments toward sustainable rural development.

#### **VI. Future Work**

In integrating remote sensing technology into Geomapping System as an added layer of science-based information, the Project should consider incorporating guidelines on the use of remotely sensed satellite imagery as a tool to derive relevant information for planning, monitoring, and impact assessment of FMR. Also, it is important to capacitate PRDP's technical staff on the processing, utilization, and analysis of remotely sensed data to ensure appropriate use and interpretation. Lastly, to ensure that geomapping system will be effective and efficient, continuous evaluation and monitoring of the system's performance should be regularly carried out to meet the project objectives and contributes to its overall success.

Moreover, completion of the statistical computing of the remaining FMRs to be processed will be continued to generate the desired analysis and to process year-on-year data to develop a land use trend analysis. And to explore drone technology and photogrammetry in the delineation of crops in the Road Influence Area of the FMRs.

## **VII. Reference**

Karra, Kontgis, et al. "Global land use/land cover with Sentinel-2 and deep learning." IGARSS 2021-2021 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2021.

Philippine Rural Development Project, Guidelines for Screening Farm-to-Market Road Subproject (FMR) Based on Road Influence Area (RIA), May 2016.

Philippine Rural Development Project (PRDP) Scale-Up, Frequently Asked Questions and PRDP Infrastructure Portfolio, [www.prdp.da.gov.ph](http://www.prdp.da.gov.ph), May 2023.

QGIS application and Open Source Software (FOSS), <https://qgis.org/en/site/about/index.html>, May 2023.

## **Annex 7 Application of AGT to RAEB**

### **Gathering of Geospatial Data using Applied Geotagging Tool (AGT) and Geographic Information System (GIS) in Support to the Rapid Appraisal of Emerging Benefits (RAEB) Activity for Completed Subproject USERS' GUIDE**

#### **Rationale**

The Philippine Rural Development Project (PRDP) is adapting science-based tools such as Applied Geotagging and Geomapping in conducting digital mapping of its subproject from validation, planning, procurement, progress monitoring, completion, and until operations and maintenance as part of the instituted governance and transparency measures implemented by the Department of Agriculture.

In the conduct of the Rapid Appraisal of Emerging Benefits (RAEB) activity for the completed subproject, the above tools will also be utilized to ensure that the targeted respondents are within its Road Influence Area (RIA) for Farm-to-Market Road or within the identified location during the conduct of farmer's profiling for I-REAP Enterprise. Also, the geospatial data collected will support the integrity of the Household survey data collected during the RAEB activity.

In conducting the field validation and geospatial data collection using the Geomapping tools, the Geomapping and Governance Unit will assign a group of spatial enumerators that will be deployed in the subproject area and will utilize the Applied Geotagging Android Camera App developed by the PRDP.

Also, the assigned spatial enumerators will have to assign a team leader to consolidate and post-process (overall) the collected geospatial data (both geotagging and georeferenced) from the Household Survey, Key Informant Interview (KII) & Focus Group Discussion (FGD) activities.

For Farm-to-Market Roads, the PRDP is evaluating and assessing anticipated outcomes some of which are the increase in agricultural area, number of vehicles utilizing the road, and travel time consumed in utilizing the road. Aside from ensuring that the household respondents are within the Road Influence Area (RIA), the geospatial enumerator is also tasked to geotagged and GPS-track the household of the respondent, commodity area (existing/expansion area) and either good/negative observation/s that can be documented during the activity.

Lastly, the maps that will be generated from the RAEB activity will be used to provide visuals of holistic and micro perspectives such as if respondent/s are utilizing the PRDP interventions from their household location, farm areas, and accessibility to market or enterprise intervention. Further, the secondary data with a geographical location that will be collected

from the Key Informant Interview (KII) and Focus Group Discussion (FGD) will be generated to provide comparison mapping of data from the planning stage vis-à-vis after the subproject has been established for additional analysis.

## Methodology

1. The GGU must prepare a mapping presentation & analysis in support to the identification of respondents to the M&E and Economics Unit, which is preferably **a month prior** to the conduct of the RAEB activity. The mapping presentation & analysis will include PCIP prioritization & eVSA ranking for provincial scale and overlay of Road Influence Area (RIA), Farm-to-Market-Road (FMR), IREAP Intervention, Certificate of Ancestral Domain Title (CADTs), commodity areas and barangay boundary for micro mapping scale. *Please refer attached Identification of the respondents*
2. The data collection/documentation using the Geotagging and Geomapping Tools must be done **2 weeks prior to the conduct of the RAEB** schedule to allocate more time in geospatial collection and if in case there is a need to replace respondent/s. This activity will be integrated with an **initial farmer profiling** interview of the respondents on basic socio & economic data, the questionnaire will be provided by the RAEB Team.
3. The GGU will assign and deploy the required number of geospatial enumerators that will be coming from the PPMIU, RPCO, PSO & NPCO depending on the topography and land area coverage of the subproject site. The team leader assigned to the geospatial enumerator will be responsible for collating & data processing geospatial data for presentation & analysis purposes.
4. The Applied Geotagging Tool (AGT) Application developed by the PRDP will be used by the designated Geospatial Enumerators in the conduct of geospatial data collection documentation during fieldwork and validation.
5. To collect and process georeferenced data on the Socio-Economic Parameters used in the formulation of the eVSA such as Production Area, Number of Farmers, Poverty Incidence, and Annual Production using the Geographic Information System (GIS) platform.

## Geospatial Data to Be Collected

- Geotagged photo of the respondent's and household of the respondent/s
- Respondent's agricultural and commodity of the existing and expansion areas *or area converted to other land use.*
- *Geotagged photo of the IREAP interventions such as facilities, equipment, and production support.*
- Distance of the respondent household from the completed Farm-to-Market Road or established PRDP enterprise.
- GPS-track of travel time from the beginning to end of the Farm to Market Road
- Capture through geotagging either good/negative observations that can be documented or worth capturing during the fieldwork.
- Georeferenced data on the Socio-Economic Parameters used in the formulation of the eVSA such as Production Area, Number of Farmers, Poverty Incidence, and Annual Production from the Provincial Agriculturist (PA)/ Municipal Agriculturist (MA).

## Geospatial Data Processing

- The geospatial enumerators will post-process the data that were collected in the field and use the following methodology & application:
  1. For the Geotagged Photos per household, the enumerator may use Picasa Desktop or Geosetter application to generate kmz files to plot and overlay to the Google Earth platform.
  2. Determine the location of per household respondent and provide the coordinates (latitude, longitude in decimal degrees setting) needed in the RAEB household survey questionnaire including the distance of household and farm to the PRDP subprojects.
  3. Plot and overlay the geo-tracked data for the travel time recorded in traversing the FMR in the Google Earth platform.
  4. Merge the data sets reflected in the Excel file respondent profiling questionnaire into the household geotagging output using Geographic Information System (QGIS) for databasing & further analysis.
  5. The geospatial enumerators' team leader will be responsible for the consolidation of the processed geospatial data and will be responsible for the packaging of the presentation such as ppt, Prezi & interactive mapping.
  6. The analysis and packaged map output (in ready presentation format) will be forwarded to the RAEB Team in advance prior to the RAEB Activity to provide the Team with the visual presentation. Also, the result of **the initial farmer profiling household survey** will be forwarded to the Economics Unit as an Excel file for easy processing & merging of data.

## Mapping Analysis

The geospatial team will be responsible for the mapping analysis that will be generated during the mapping and post-processing activity. The analysis will be presented to the whole member of the RAEB Team for further analysis and comments. The analysis includes the following but is not limited to:

- The location of the respondent household or agricultural/commodity area is within the Road Influence Area for FMR or the geographical location of the targeted respondents for the enterprise. If a respondent is not within the RIA or targeted location, the geospatial team will provide an analysis to recommend a replacement for the respondent.
- Provide a micro view of household members capturing their household location, commodity/agricultural area (with polygon), and distance from the PRDP interventions. Also, capture the IREAP subproject interventions such as processing center, production support, equipment, warehouse, and others.
- Provide a holistic view in showcasing the connectivity and value chain of farm produce in utilizing the PRDP intervention/subproject.
- Provide assessment on travel time captured, using geo-tracks both at a normal speed recorded at 35-40 kph and at a higher speed recorded of 60 kph or higher speed recording.

## Challenges and Constraints

From the previous RAEB activities conducted by the Project, the following are some of the challenges and constraints experienced by the geospatial enumerators:

*This experience was provided to help the team in the preparation for the next RAEB activity.*

- The subprojects of PRDP are covering more agricultural areas because of its lengthy road and provincial-scale coverage. The main concern during the fieldwork experience is the mobility and timing in the conduct of per-household geotagging and locating/tracking of respondents' agricultural areas. It is suggested to conduct planning, courtesy to LCE per barangay, vehicle assignment of enumerators, and information dissemination to respondents.
- Unavailability of internet connection to cache map satellite imagery in the assigned area. It is advisable to cache or download satellite imagery prior to the conduct of the ground data collection for presentation and post-processing purposes.
- The unavailability of respondents/residents in their respective households during data collection will limit capturing its agricultural/commodity areas.
- Unavailability of a local guide to locate the household of a particular respondent which resulted in not capturing its household and agricultural/commodity area due to limited time.
- Some residents are hesitant to share information or would not approve to geotag its household and agricultural/commodity area. Handling the scenario in a polite manner, introducing of self, providing a brief purpose of the activity, and wearing visual identification will help the geospatial enumerator to attain its documentation.

Annex 8 KoBoToolbox Users guide

### KOBOTOOLBOX USERS' GUIDE

The KoBoToolbox is a versatile and powerful open-source platform designed for data collection, management and analysis.

Whether conducting surveys or monitoring programs, it serves as a reliable solution for the Project in collecting, managing and analyzing data efficiently and effectively.

What do you need to make use of the Tool?

- a. A laptop that is connected to the internet
- b. A smartphone or tablet that has a GPS/Location capabilities (preferred)

### Creating an account

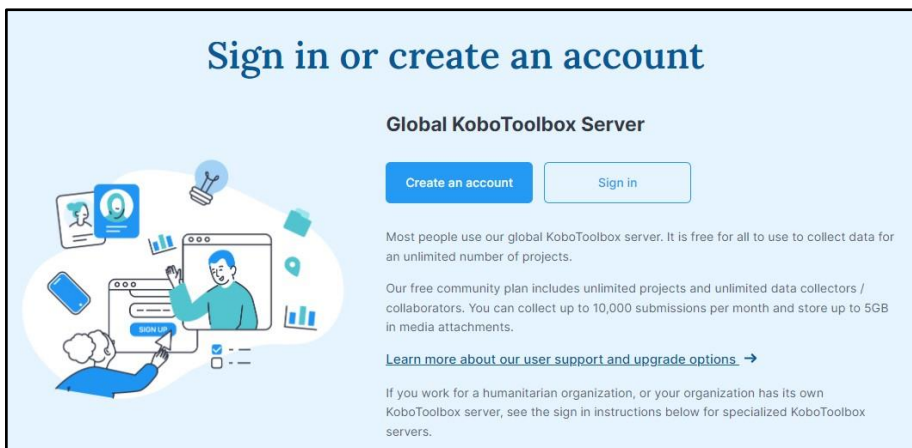
1. On your browser, go to this link : <http://www.kobotoolbox.org/>



2. Click “Create an account”



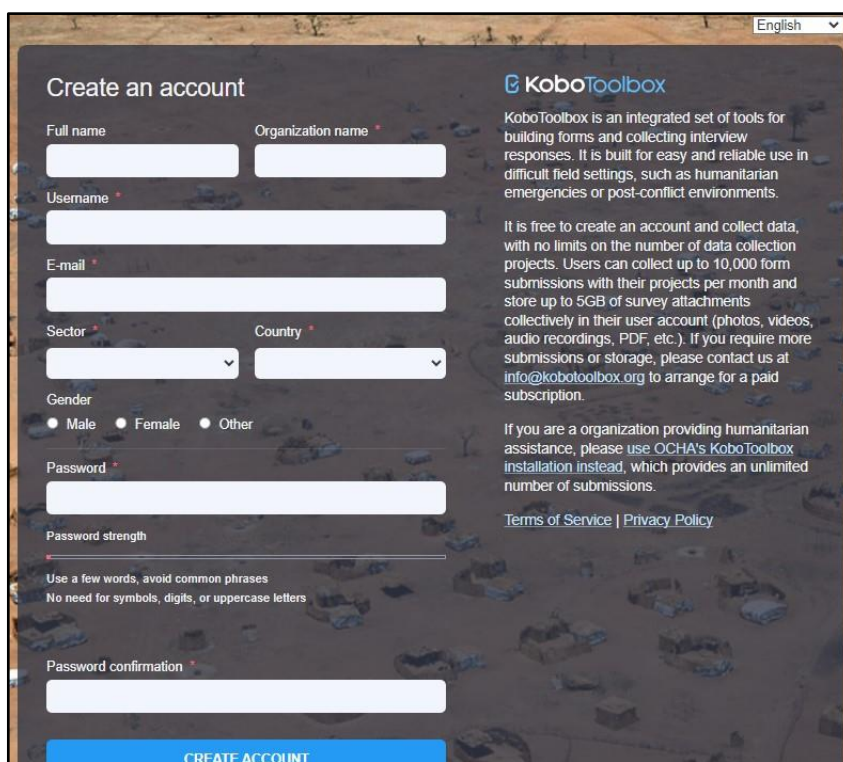
3. Select “Create an Account”



4. Fill out all the required information \*

5. On Sector -> Choose - Other

6. Click “CREATE ACCOUNT”



English

### Create an account

Full name  Organization name \*

Username \*

E-mail \*

Sector \*  Country \*

Gender  
 Male  Female  Other

Password \*

Password strength

Use a few words, avoid common phrases  
No need for symbols, digits, or uppercase letters

Password confirmation \*

**CREATE ACCOUNT**

**KoboToolbox**

KoboToolbox is an integrated set of tools for building forms and collecting interview responses. It is built for easy and reliable use in difficult field settings, such as humanitarian emergencies or post-conflict environments.

It is free to create an account and collect data, with no limits on the number of data collection projects. Users can collect up to 10,000 form submissions with their projects per month and store up to 5GB of survey attachments collectively in their user account (photos, videos, audio recordings, PDF, etc.). If you require more submissions or storage, please contact us at [info@kobotoolbox.org](mailto:info@kobotoolbox.org) to arrange for a paid subscription.

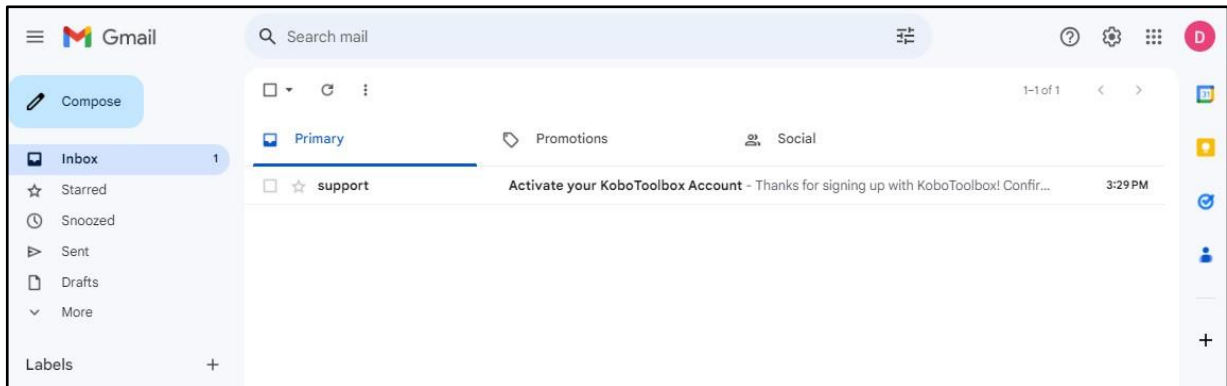
If you are an organization providing humanitarian assistance, please use OCHA's KoboToolbox installation instead, which provides an unlimited number of submissions.

[Terms of Service](#) | [Privacy Policy](#)

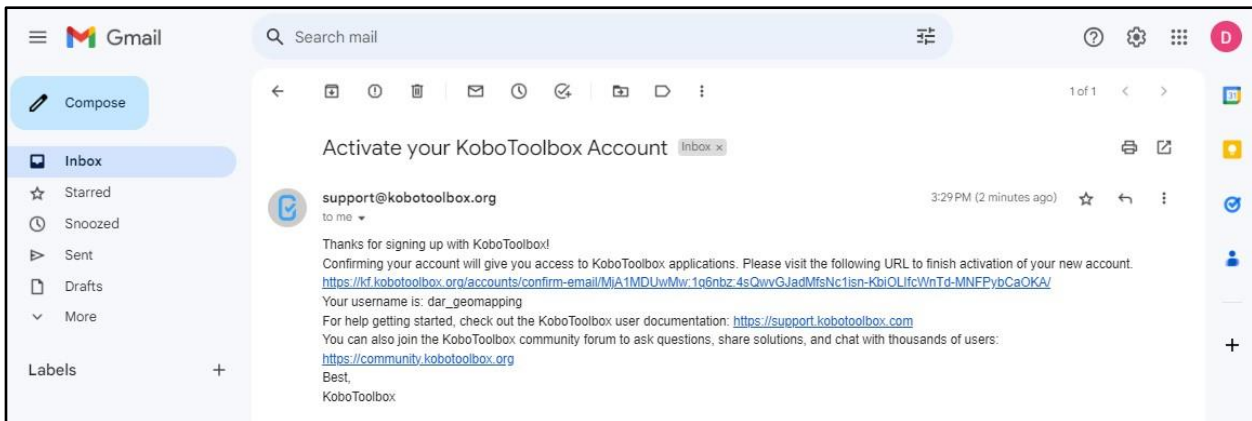
7. A link will be sent thru your email to activate you KoBoToolbox account



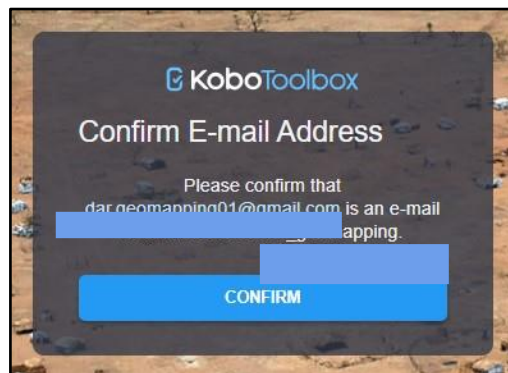
8. Open your email used in your registration,



9. Select the email with subject entitled “support” and click the “link” to activate

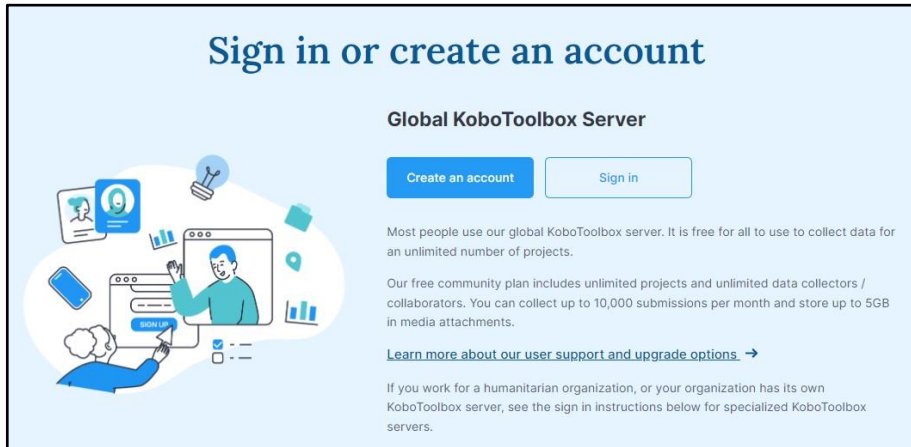


10. Click “CONFIRM”



## Signing into KoboToolbox

11. You are now ready to sign-in to the KoBoToolbox

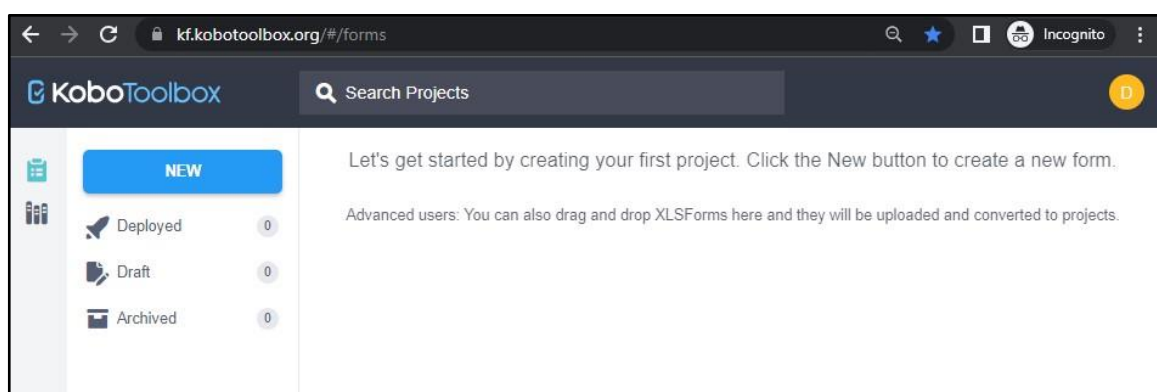


12. Log-in using your Username and password, then click “LOGIN”

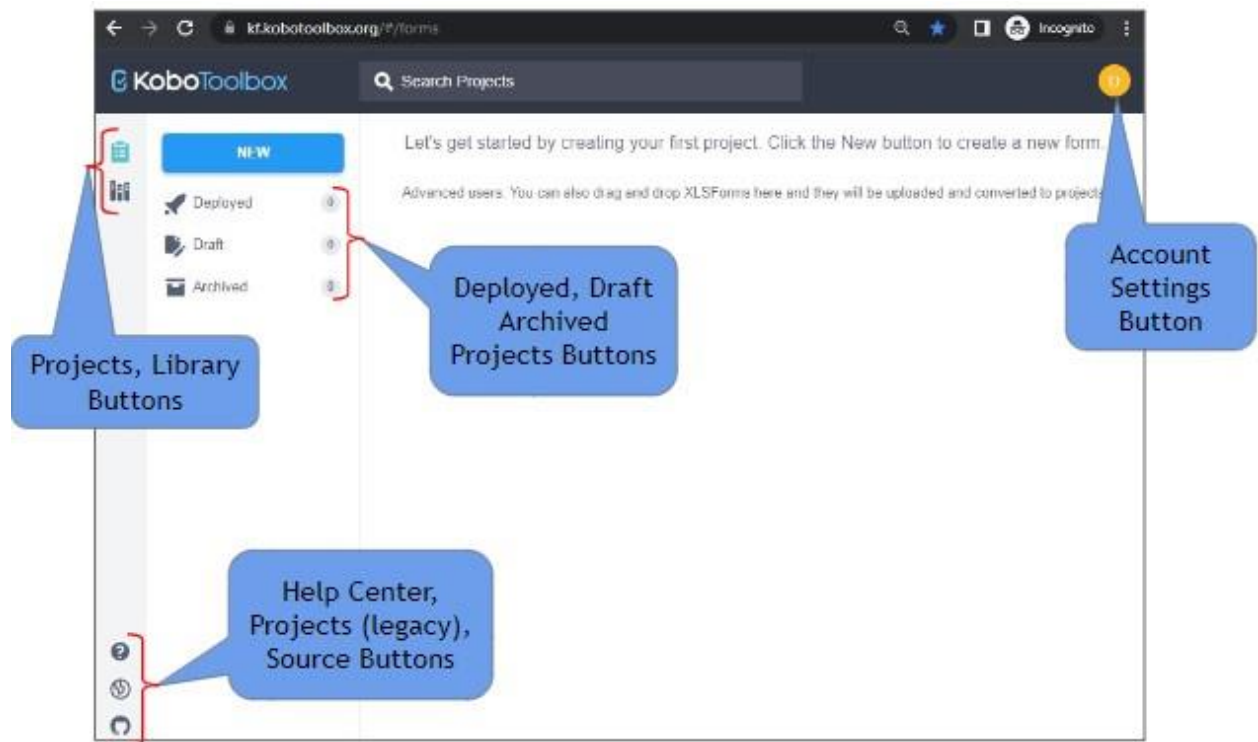


## Creating a Project from Scratch

13. The Main Page in KoBotoolbox will be displayed as shown below

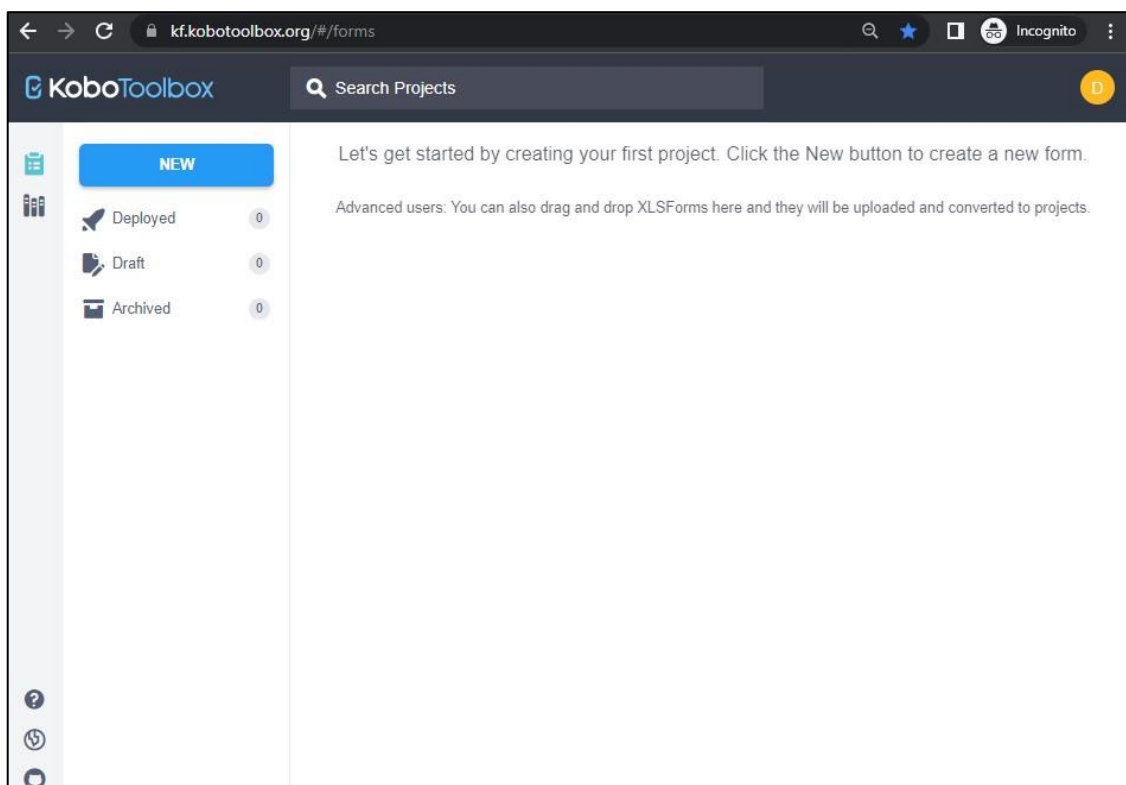


#### 14. Familiarize with the User Interface of KoBoToolbox

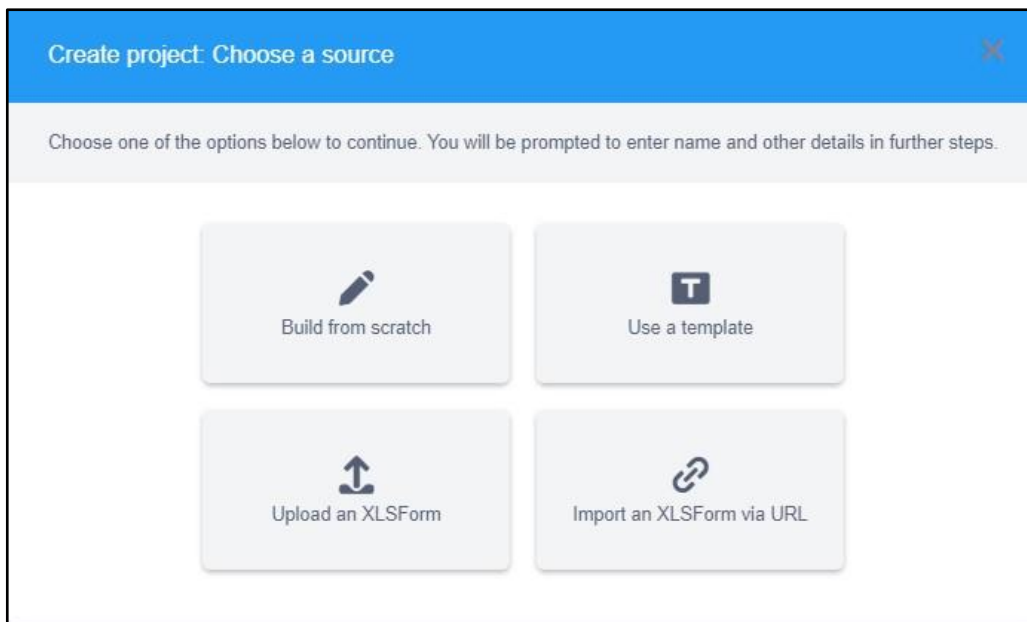


#### 15. Create Data Collection Form

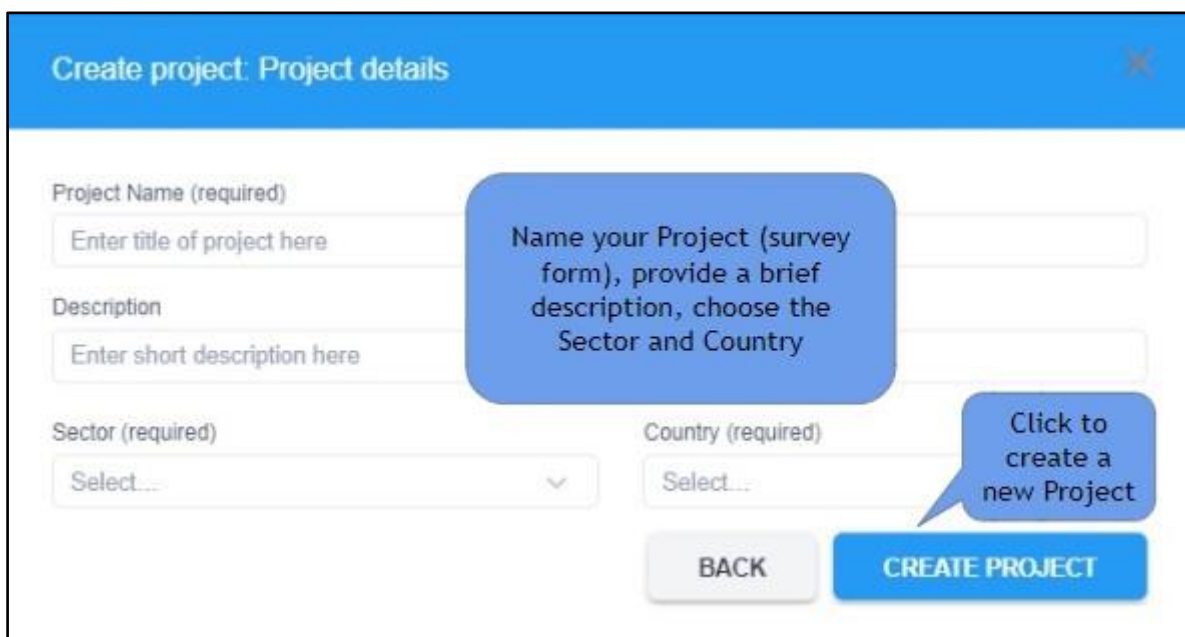
#### 16. Click “NEW”



17. A menu of how to create the Project will be displayed
18. Select “Build from scratch”

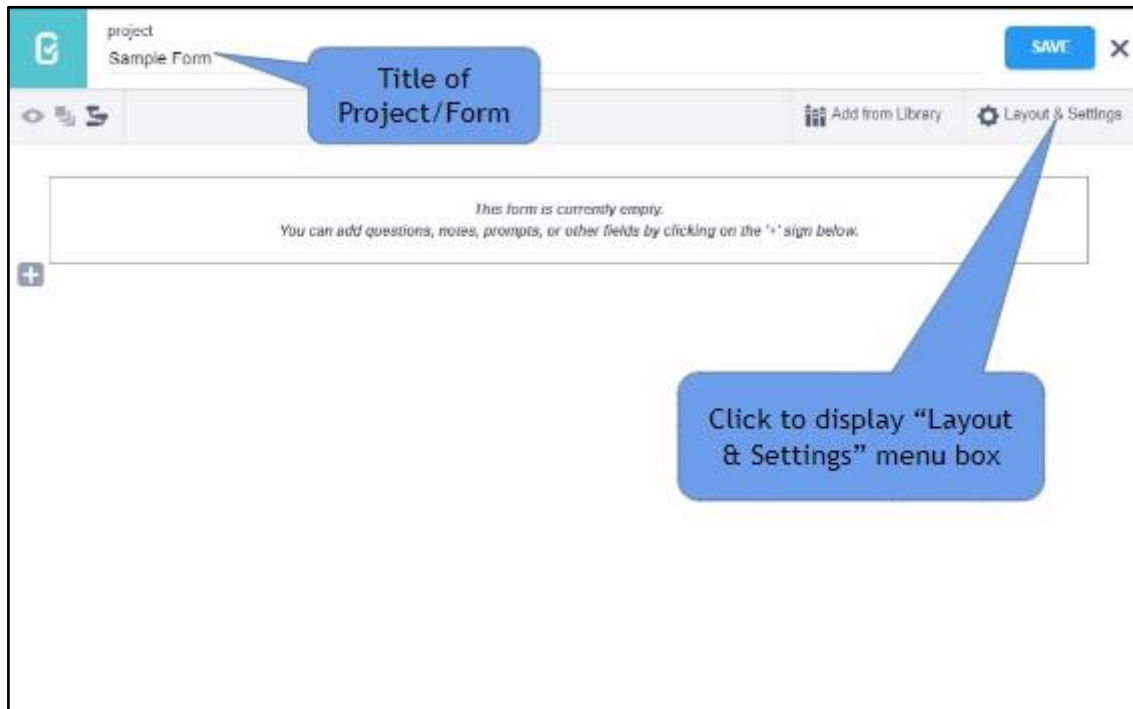


19. A Project Details Input window will appear
20. Encode all required fields to continue
21. On Sector, select “Others”
22. Click “Create Project”

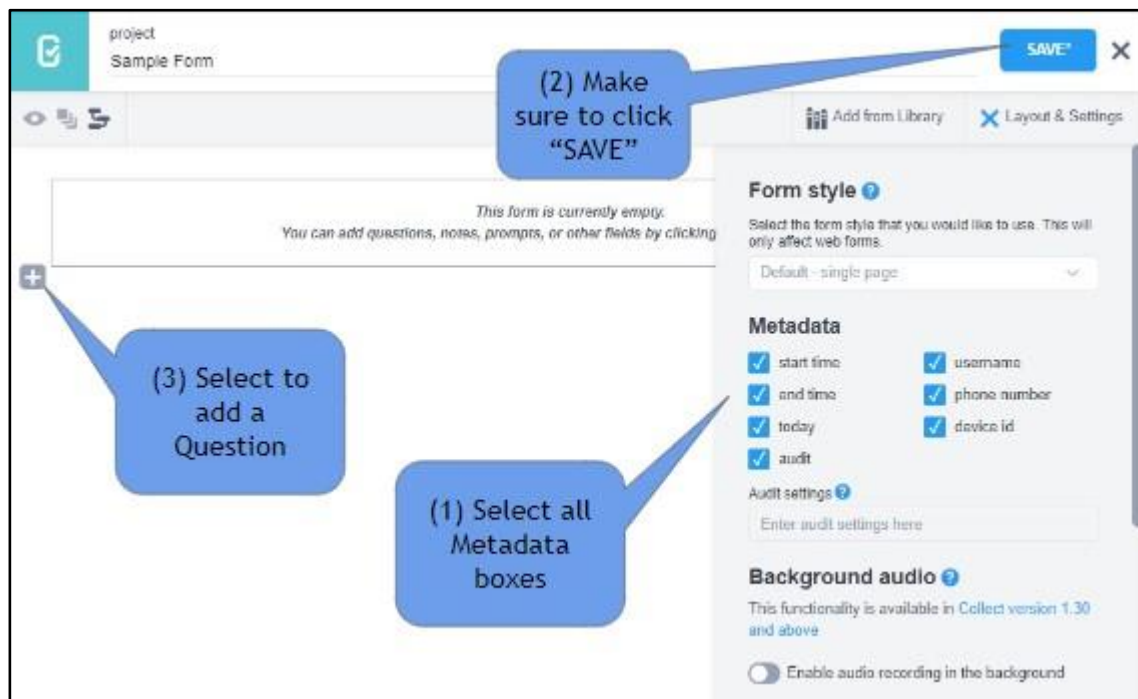




23. The Main Page in creating a form is displayed



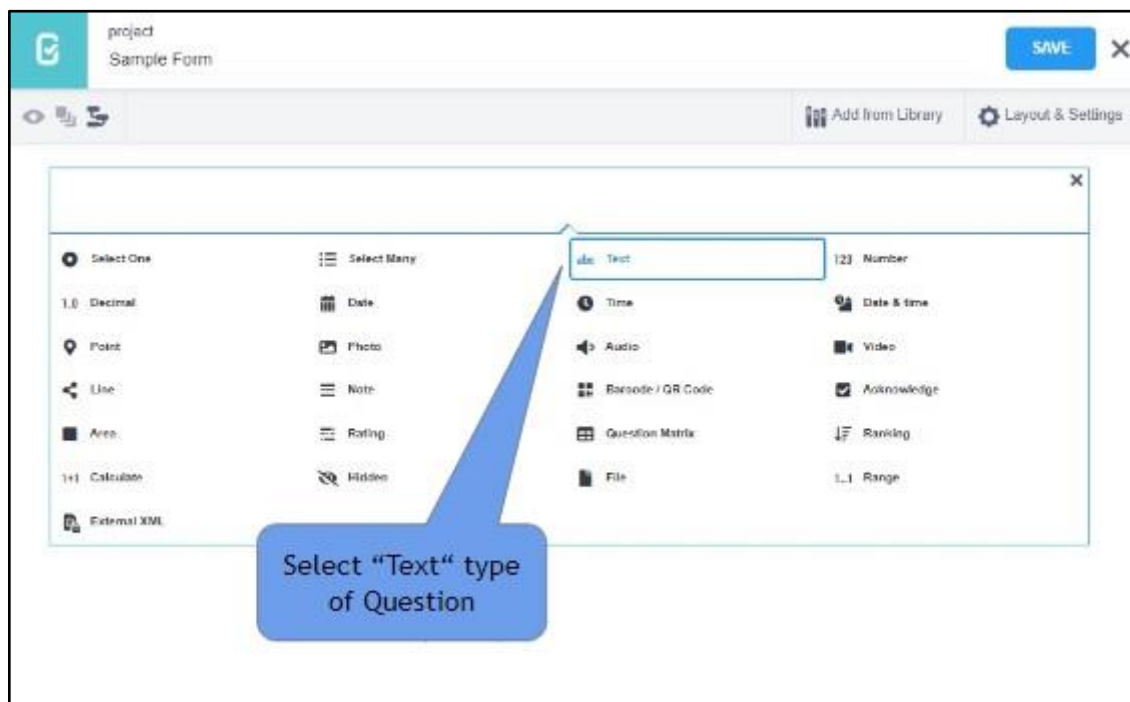
24. Open the “Layout & Settings” window



25. Type in the box provided the Question as how it will be displayed on the actual form.  
26. Click on the “ADD QUESTION” to choose what type of question this is.

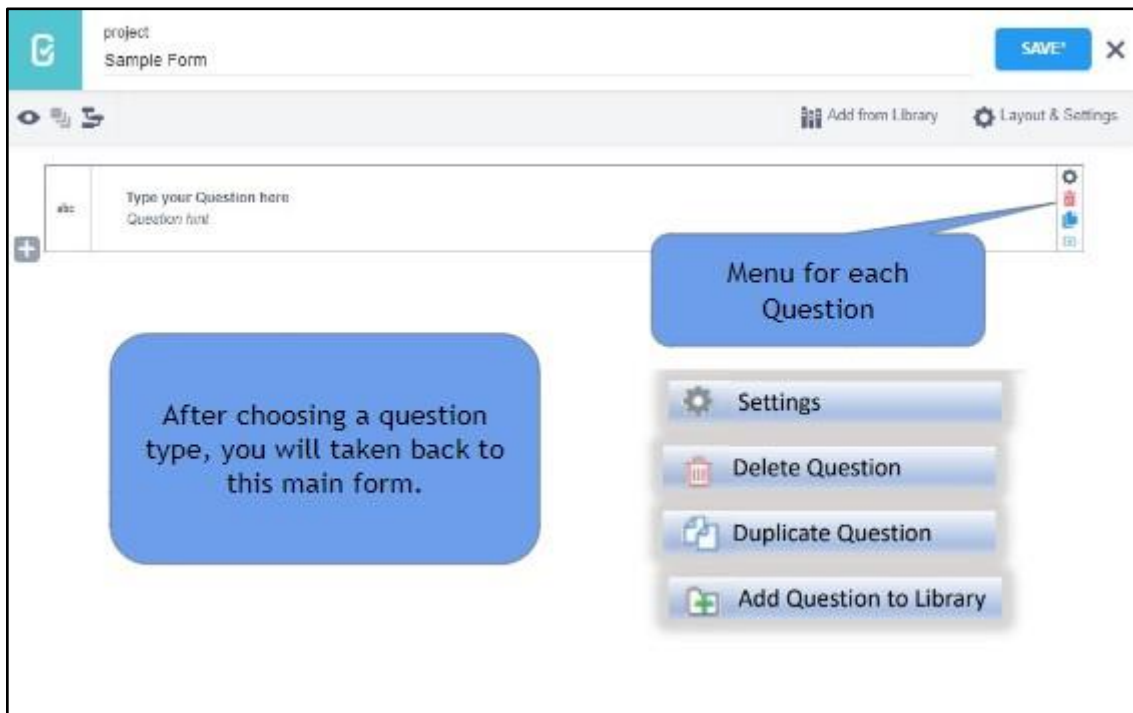


27. For this example choose “text” type by clicking it

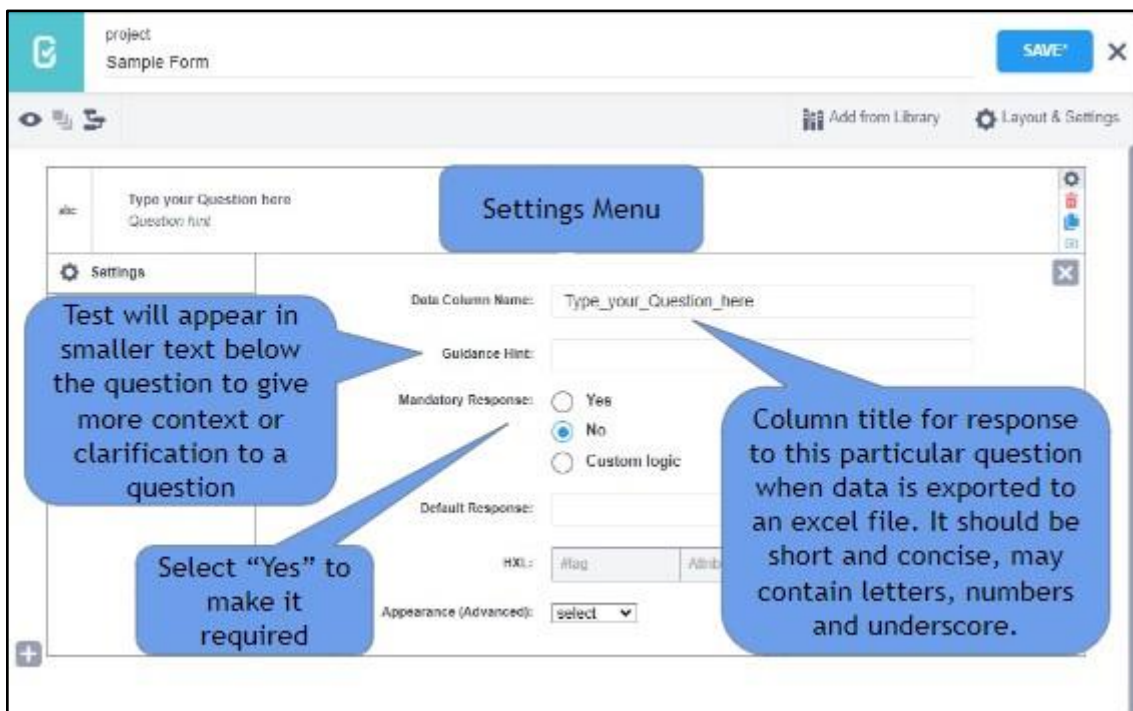




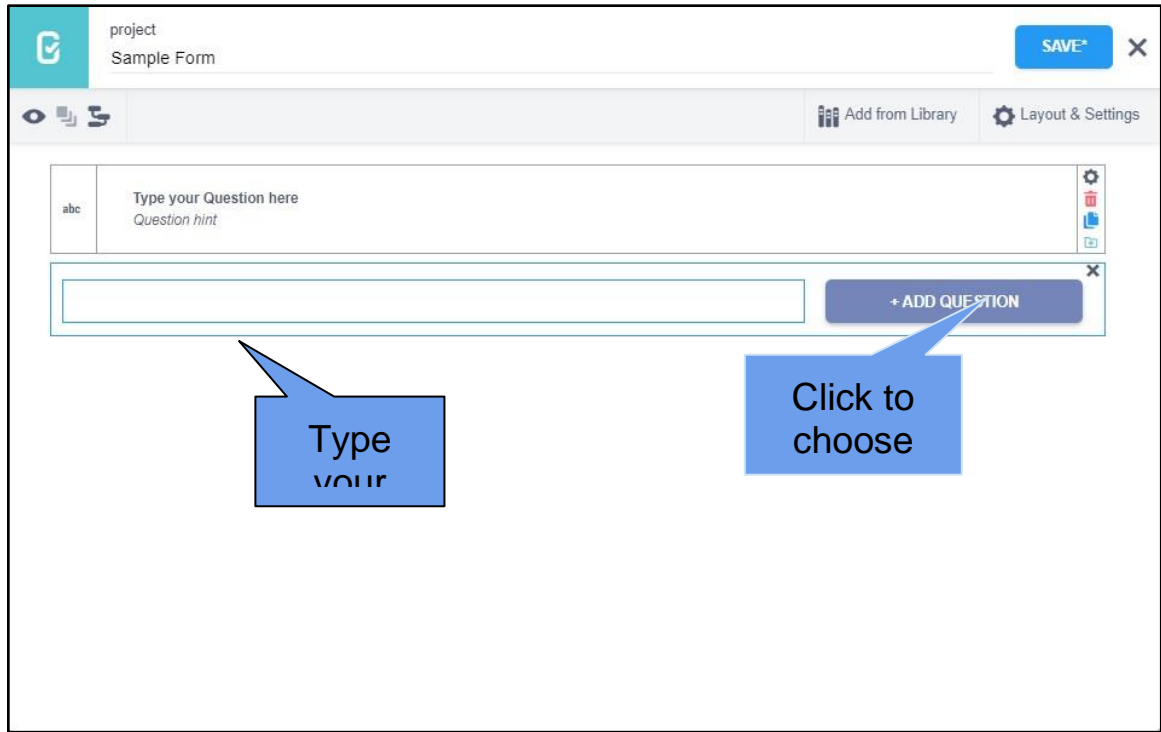
28. This screen will be displayed showing the icons on the right side of the question, the Settings, Delete Question, Duplicate Question and Add Question in Library.



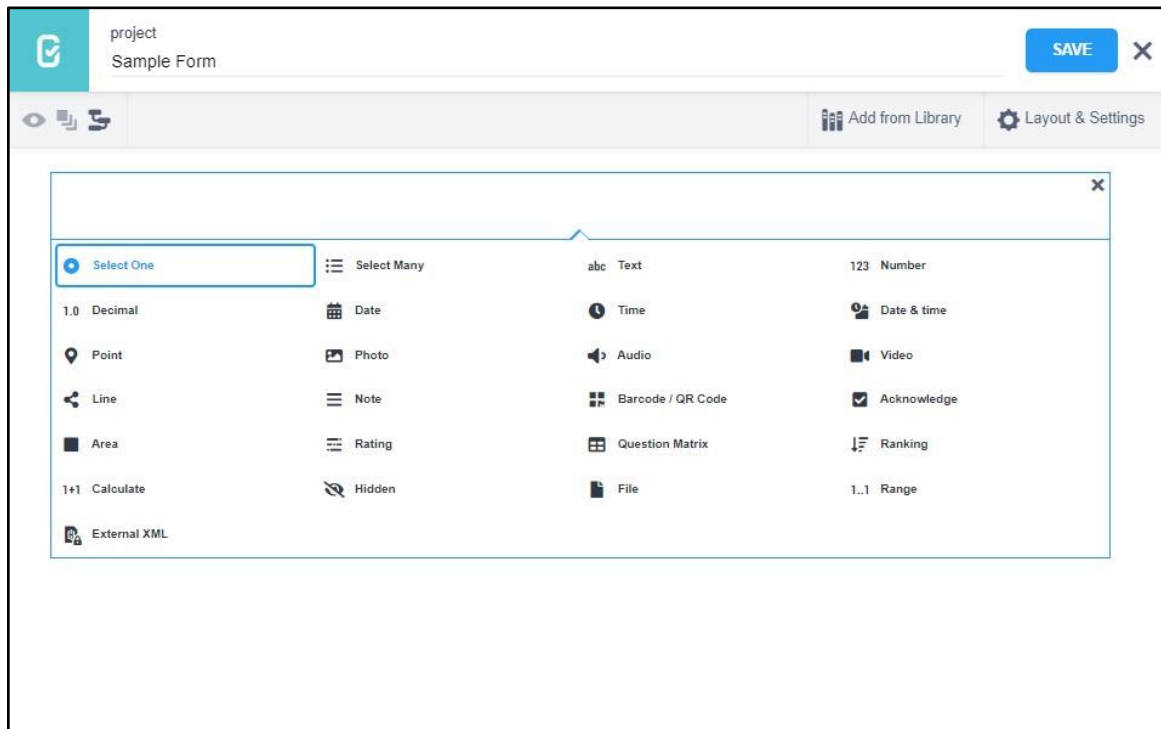
29. Selecting Settings will display more choices on how you will configure the particular question, how it will respond to entries based on the conditions given.



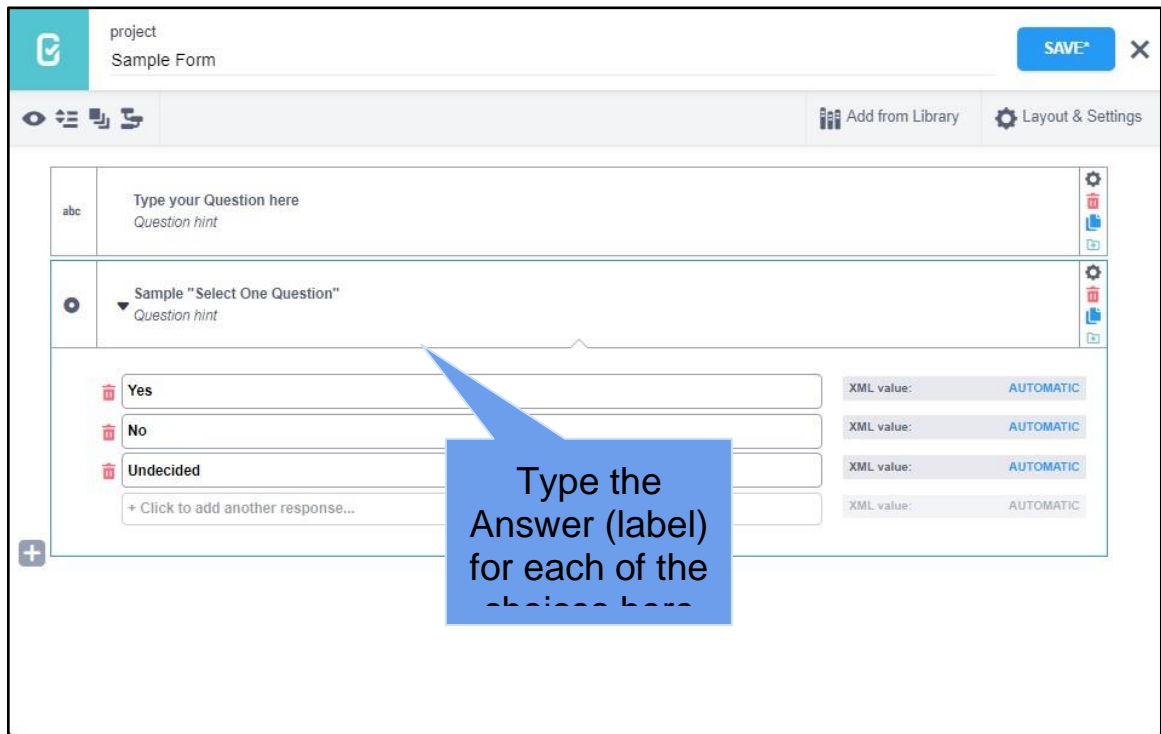
30. Add another Question by selecting the “Plus” sign just below the existing question  
31. Type the “Question Text” then click the “+ADD QUESTION” button



32. Select the “Select One” type.



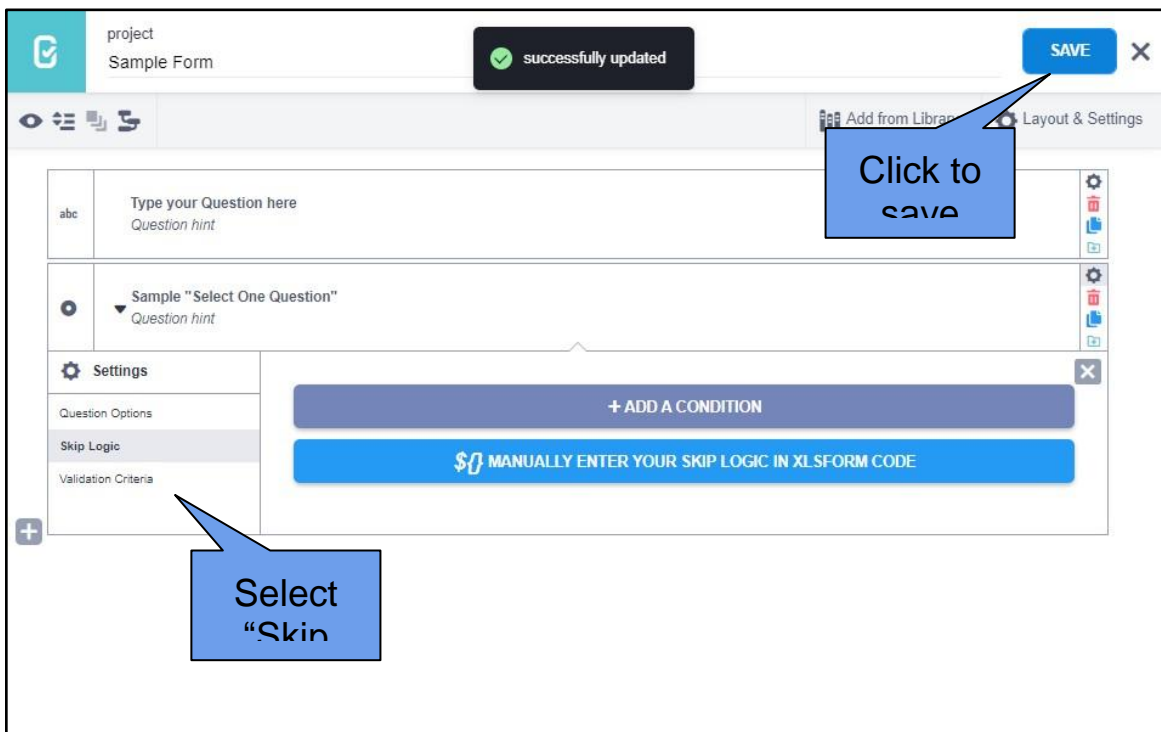
33. Enter all the possible answers as a choice to the question.



34. Make sure to click the “SAVE” button to save changes made to the Project as often as possible so as not to lose your latest updates on your Project.

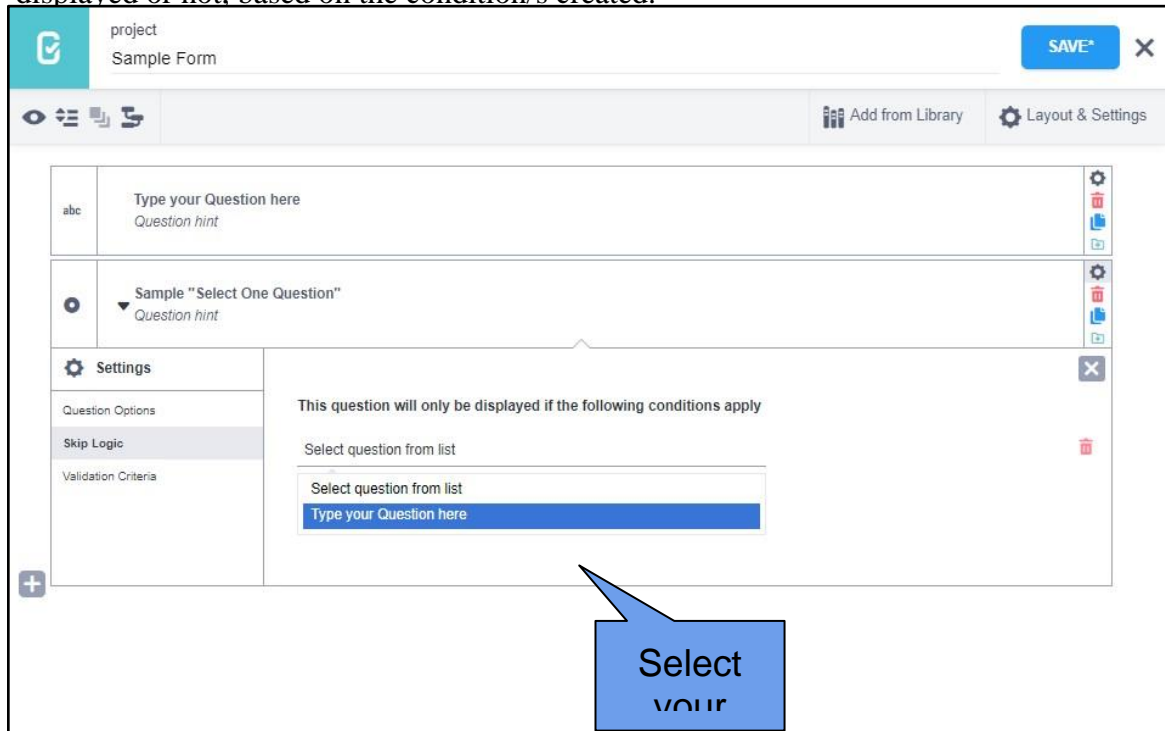
35. On Settings, choose “Skip Logic” to display the screen as shown below

36. Select “+ADD A CONDITION” to create a condition for this specific question.



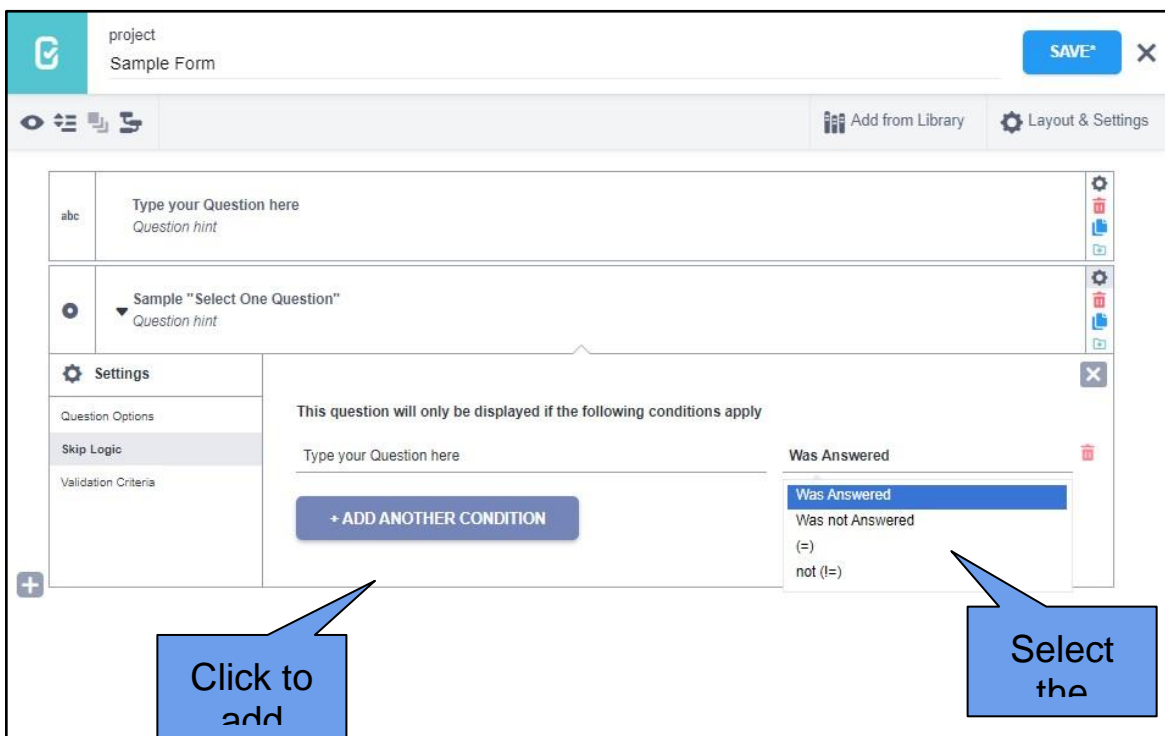
37. By adding a condition to the question, this window below will be displayed

38. Choose your reference question to base the behavior of the current question, if it will be displayed or not, based on the condition/s created.










39. Select what condition should it be, “*Was answered*”, “*Was not answered*”, “*Equal to*” or “*Not Equal to*”













40. You can click “ADD ANOTHER CONDITION” if needed



## Exploring the different Question Types

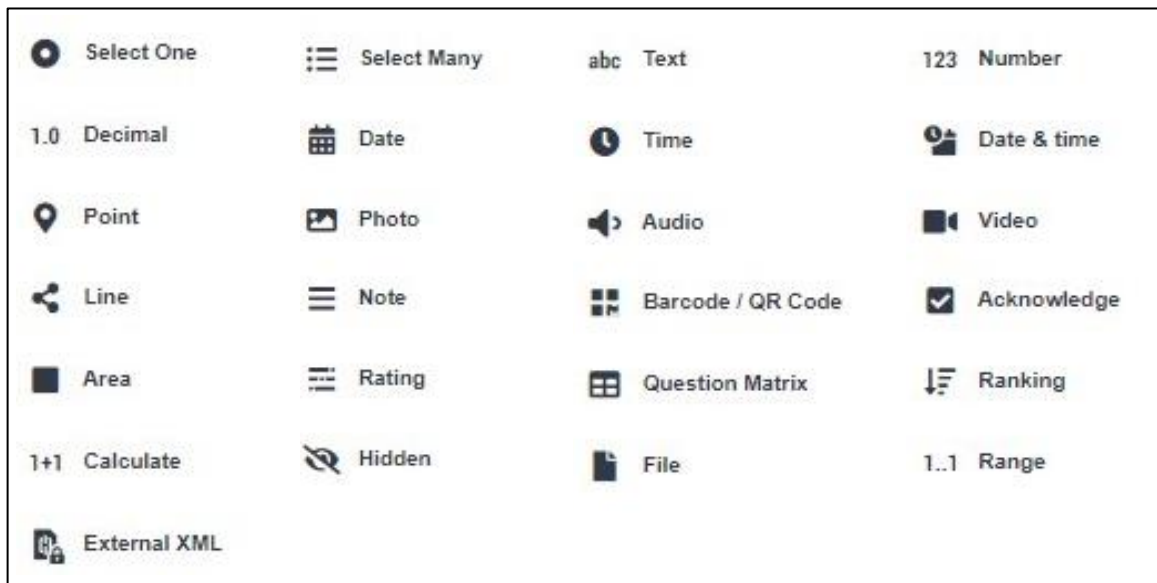
### Question types and their corresponding Answer Input

Question type	Icon	Answer input
integer	123	Integer (i.e., whole number) input.
decimal	1.0	Decimal input.
range	1..1	Range input (including rating).
text	abc	Free text response.
select_one [options]		Multiple choice question; only one answer can be selected.
select_multiple [options]		Multiple choice question; multiple answers can be selected.
select_one_from_file [file]		Multiple choice from file; only one answer can be selected.
select_multiple_from_file [file]		Multiple choice from file; multiple answers can be selected.
rank [options]	n/a	Rank question; order a list.
note		Display a note on the screen, takes no input. Shorthand for type=text with readonly=true.
geopoint		Collect a single GPS coordinate.
geotrace		Record a line of two or more GPS coordinates.

geoshape		Record a polygon of multiple GPS coordinates; the last point is the same as the first point.
date		Date input.
time		Time input.
dateTime		Accepts a date and a time input.
image		Take a picture or upload an image file.
audio		Take an audio recording or upload an audio file.
background-audio		Audio is recorded in the background while filling the form.
video		Take a video recording or upload a video file.
file		Generic file input (txt, pdf, xls, xlsx, doc, docx, rtf, zip)
barcode		Scan a barcode or QR Code
calculate	1+1	Perform a calculation; see the Calculation section below.
acknowledge		Acknowledge prompt that sets value to "OK" if selected.
hidden		A field with no associated UI element which can be used to store a constant.



## 41. List of Question Types in KoboToolbox



## 42. Description for each question type

Select One	Select Many	abc Text	123 Number
<p><b>Select One</b> This question type allows you to create a multiple-choice question where the user can only choose one option as an answer.</p> <p>For example, if you are interviewing a beneficiary and need to know his/her status, a “Select One” question could ask the respondent to choose his/her status as “Host Community”, “IDP”, or “Refugee”. The respondent can only fall into one of these categories.</p>	<p><b>Select Many</b> Similar to the “Select One” question, this option allows you to provide respondents with a list of options to choose from when answering a question. The difference is that they will be able to choose multiple answers.</p> <p>For example, a question asking who benefits (e.g. women, men, children) from an implementation site should allow the respondent to select more than one of these options.</p>	<p><b>Text</b> A text question allows a respondent to write whatever they want as an answer. This provides for flexibility, but can lead to unstructured data and implies room for error.</p> <p>For example, a question asking the respondent’s name would require a text field. However, a question asking the respondent which state he/she is in may be better served by a “Choose One” so that there is no chance of a typographical error.</p>	<p><b>Number</b> A number question only allows the user to answer a question using whole numbers (integers).</p> <p>For example, a question asking how many beneficiaries are served by a project would be best answered with a whole number. (e.g. 950) However, a question asking how much money (e.g. \$199,999.95) is invested in a project would be best served by a “Decimal” question (see next slide for details).</p>

1.0 Decimal

Decimal

As mentioned in the previous slide, a “Decimal” question is used when the possible answers related to numbers with decimals (fractions), such as monetary values (e.g. \$149,999.99), percentages (e.g. 0.67), or weight (e.g. 64.5kg).

Date

Date

A “Date” question allows the respondent to choose a date on a calendar. It does not include time.

For example, “What is your birthday?” or “What day was this survey performed on?”

This question can also be useful in surveys, e.g. when asking for the birth date of a beneficiary.

Time

Time

The “Time” question allows the respondent to choose a time (e.g. 12:30).

For example, question like “What time did this survey take place” would use this.

Date & time

Date & Time

This combines the two questions to the left, allowing the respondent to choose a date on the calendar and enter a time.

For example, “When exactly was this survey?” Given date and time are in the same question, the output in Excel will also be combined in the same cell. This allows for quick sorting of entries by old and newer ones.

Point

Point

A “Point” question will use your phone’s in-built GPS (Global Positioning Service) device to find where you are. It includes results in latitude and longitude, (together they constitute the coordinates of the respective location on earth) as well as altitude, and accuracy values. Accuracy tells you how precise the collected coordinates are in meters. This question should be used in almost every survey.

Photo

Photo

This allows respondents to take photos on-site, or upload photos they have saved on their smartphones. The photos will be saved on the server and directly connected to each data entry through a hyperlink. On-site photos are very valuable for the purposes for M&E purposes. When carrying out surveys, it may be advisable not to take photos of respondents, but for instance take a picture of a paper sheet.

Audio

Audio

This allows a respondent to enter an audio recording into the survey. It could be useful for beneficiary interviews, recording noise levels of a site, or making audio notes in addition to filling out survey questions.

Video

Video

Similar to “Photo” and “Audio”, this will allow respondents to record and upload video footage to a survey. Be careful when including video questions in forms, as file sizes can quickly become large, slowing uploads and using up data space on the account.

Line

Line

Similar to the “Point” option, a “Line” question uses your phone’s GPS capabilities to draw lines on a map.

For example, if you want to map a road, you can use the “Line” option to trace its path.

Note

Note

Similar to a text field, but specifically for respondents to make a note of something.

For example, if a particular question may require additional information, it could be followed by a note.

Barcode / QR Code

Barcode / QR Code

Inserting the barcode question requires you to install a barcode reading application on your phone. KoBo will access this app when prompted with a barcode question.

For example, scanning beneficiary ID cards.

Acknowledge

Acknowledge

Use an “Acknowledge” question to make a respondent confirm that they have performed a task.

For example, a mandatory “I have answered this survey honestly” question.



<p><b>Area</b></p> <p>Similar to the "Point" and "Line" questions, an "Area" question uses your phone's GPS to tract the geographic area of a place.</p>	<p><b>Rating</b></p> <p>Use this to create an ordering question with multiple selection terms and options.</p>	<p><b>Question Matrix</b></p> <p>Use this to create a matrix question with multiple conditions and selection options. <i>(NOTE: This question is in beta testing)</i></p>	<p><b>Ranking</b></p> <p>Use this question to have respondents rank a number of options in a list. <i>(NOTE: This question is in beta testing)</i></p>
<p><b>1+1 Calculate</b></p> <p><b>Calculate</b></p> <p>This is an advanced method of performing calculations on responses to questions answered in your form if needed prior to data export.</p>	<p><b>File</b></p> <p>This method is used to enter a generic file (txt, pdf, xis, xisx, doc, docx, rtf, zip)</p>	<p><b>1..1 Range</b></p> <p><b>Range</b></p> <p>This is an advanced method for calculating responses to questions answered in your form if necessary before exporting data.</p>	

**Preview Form to test entries/debugging**

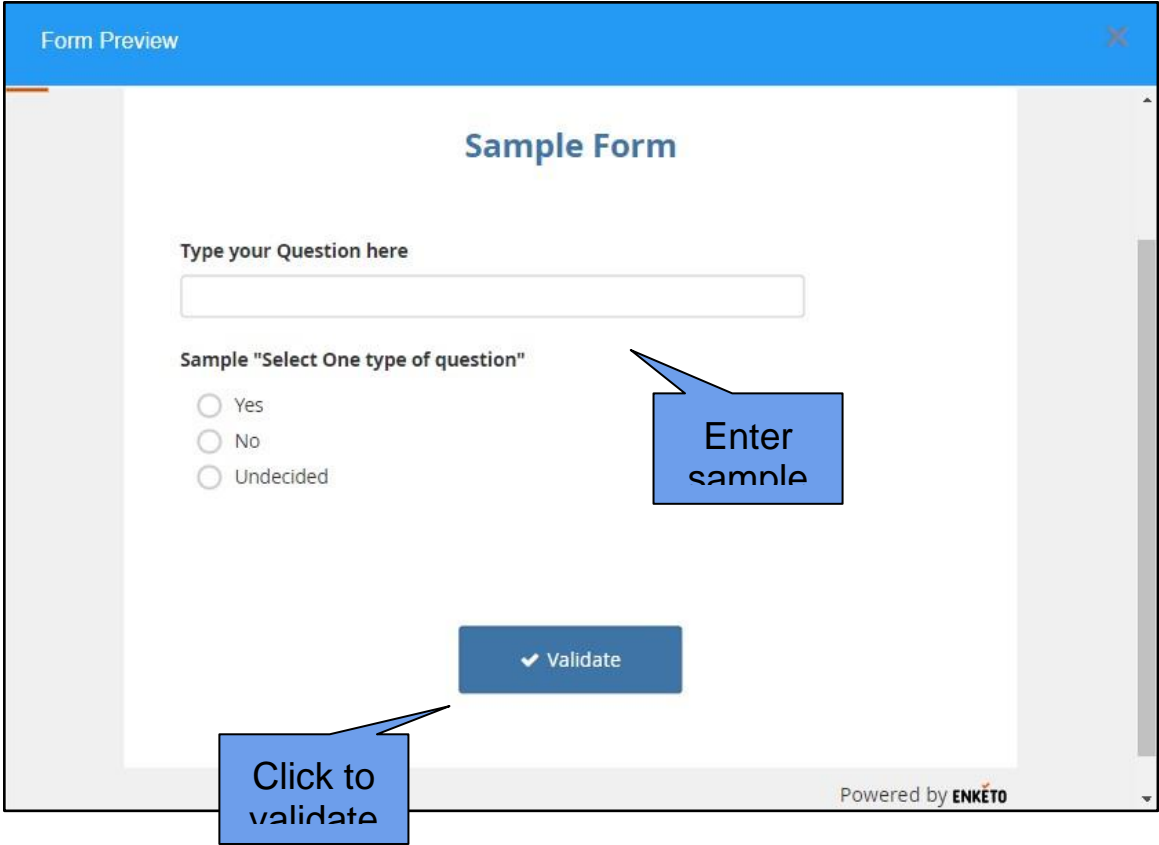
43. On the main Project page (edit mode)

The screenshot shows a form editor interface for a project named "project" with a "Sample Form". At the top right, there is a "SAVE" button and a close icon. Below the header, there are two buttons: "Add from Library" and "Layout & Settings". The main area contains a list of three questions:

- Question 1: "Type your Question here" with a "Question hint". A blue callout box with the text "Click to" points to this question.
- Question 2: "Sample 'Select One type of question'" with a "Question hint".
- Question 3: "This will display if 'Sample ' Select One Question' - Yes is the answer (Skip Logic)" with a "Question hint".

Each question has a small icon on the left (abc, a radio button, abc) and a vertical toolbar on the right with icons for settings, delete, copy, and paste.

- 44. A Preview window of the Form will be displayed
- 45. It will give you a glimpse on how the form will be displayed once deployed as shown



**Annex 9** iPEP-ARS User's Guide



**iPEP-ARS**  
**Individual Performance Evaluation Profile**  
**and Accomplishment Reporting System**  
**USER'S MANUAL**

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## INTRODUCTION

Individual Performance Evaluation Profile and Accomplishment Reporting System (iPEP-ARS) web-based work management system that aims to streamline the PEP document management process and systematically track workforce productivity to ensure it meets the management objectives.

The objective of the work management system is to digitize and automate processes in PEP preparation, target and timeline setting of deliverables, submission, monitoring and evaluation of outputs and/or performance.

A good Work Management System (WMS) also serves as a decision support tool to help principals gain insights into the workforce and eventually improve productivity as a component/unit or project as a whole. A WMS in place helps the principals plan work, manage employee time, control labor costs, and improve efficiency

This users' manual is intended to assist users in utilizing the iPEP-ARS' system features and functionality. The manual was written from the perspective of the system developers and analysts of the Geomapping and Governance Unit (GGU) thus it does not cover guidelines and policy discussions from the end-user Administrative Unit.

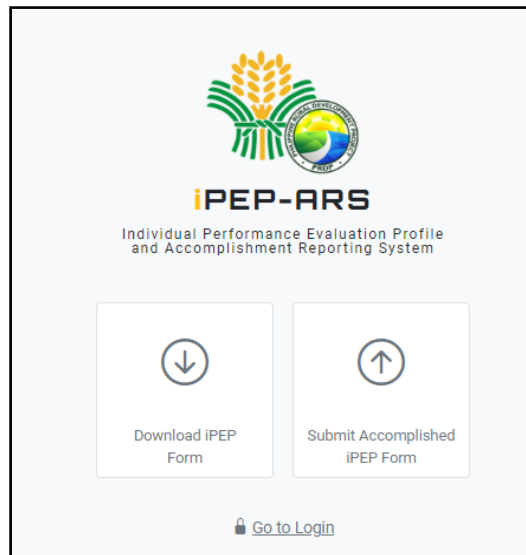
## ACCESS AND USER PROFILE

The DA-PRDP iPEP-ARS can be accessed by DA-PRDP personnel at the web address [www.prdp-ipep.da.gov.ph](http://www.prdp-ipep.da.gov.ph) using a registered user account.

*How to register an account and a user profile?*

### 1. User Registration

To register, download the iPEP form and fill-up the information needed in the employee details and the individual Performance Evaluation Profile worksheet tab.



### 2. Fill-up the iPEP Form

Before filling up the form, users are advised to consider the notes below and ensure that all information is filled-out.

**Notes :**

1. All data fields are required to be filled-out, **except** for the extension name.
2. Make sure that the provided email is correct and active to be able to receive system notifications.

In the employee detail, review personal information and employment details for completeness and veracity.

I. PERSONAL INFORMATION			
SURNAME	BALDOZ	EXTENSION NAME	
FIRSTNAME	LEO MARK		
MIDDLENAME	FLORENDO		
BIRTHDAY (mm/dd/yyyy)		SEX	Male
COMPLETE HOME ADDRESS	AL-ALINAO SUR, NAGUILIAN, LA UNION		
EMAIL	<a href="mailto:leomarkbaldoz11@gmail.com">leomarkbaldoz11@gmail.com</a>	CONTACT NO.	09952205910
II. EMPLOYMENT DETAILS			
OFFICIAL STATION	NPCO	COMPONENT/UNIT	GGU
DESIGNATION (as stated in the contract / SO)	GIS Specialist / Programmer		
PEP START (mm/dd/yyyy)	01/01/2022	PEP END (mm/dd/yyyy)	12/31/2022
EMPLOYMENT STATUS	Hired		

In the iPEP worksheet, take note of the enumerated instructions below to satisfy the system requirement before uploading it to the platform.

Instructions:
1. In the iPEP worksheet there are pre-identified forms available for GGU & I-REAP, for other components / units you may choose the Generic Form to fill-out.
2. Enumerate <b>CATEGORY</b> using <b>ROMAN NUMERAL VALUES</b> (e.g. I, II, III, IV, V, ...)
3. Enumerate <b>KEY OUTPUT EXPECTATIONS</b> (subcategory) using <b>NUMERICAL VALUES</b> (e.g. 1, 2, 3, 4, 5, ...)
4. Merging of cells from columns <b>E</b> to <b>N</b> is <b>not allowed</b> .
5. Specify <b>TARGET TYPE</b> if it is in <b>Quantity (number)</b> , <b>Disbursement (actual amount)</b> or <b>Obligation (actual amount)</b>
6. All activities must have a target for <b><u>at least one (1) quarter</u></b> .
7. The Approved Relative Weight % <u>must be totalled to 100%</u> for quarters having a target.

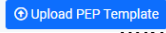



Fill-out the required information for the targeted iPEP as discussed with the immediate supervisor considering the triple “A” elements, a standard set by the Project.

*Triple “A” elements stand for Aligned, Agreed and Attainable.*

KEY OUTPUT EXPECTATIONS (Based on the Actual Duties & Responsibilities in the Current Designation)	ACTIVITIES UNDERTAKEN	INDICATOR	TARGET								TARGET TYPE (Quantity, Disbursement, Obligation)	
			1st Quarter		2nd Quarter		3rd Quarter		4th Quarter			
			WEIGHT	TARGET	WEIGHT	TARGET	WEIGHT	TARGET	WEIGHT	TARGET		
I. DISBURSEMENT 1 Accessible, available and useable geospatial informations such as geotag photos in support for progress billing/disbursement, and geovideo & drone footages for project virtual site visits.	Collect, process and analyze geospatial informations in support to subproject progress/tranching billing request/target disbursement and data needed for virtual site visits.	Amount of IIT ed I-BUILD SPs vis-a-vis No. of AGT Certificates Amount for franching request of vis-a-vis No. of AGT Certificates issued for I-REAP (secondary indicator)	55%									Quantity
			10%	5								Quantity
			30%	5								Quantity
II. UPDATING OF GEOSPATIAL INFORMATION & DATABASE			15%									
2 Conducts databasing of geospatial information collected, and ensure completeness & up to date data are populated and available at the geomapping platforms established by the Project	Database the geospatial products of the PRDP particularly EYSA, RIA, Geotagged Photos, GeoVideo, Drone Footages, O&M Requirement, RAEB, and other logistics such as road network & agri investments	Number of SPs databased for completeness of geospatial information by project cycle	10%	25								Quantity
			5%	25								Quantity
III. SUSTAINABILITY OF SPs			10%									
3 Participates in the conduct of Joint Technical Inspection (JIT) of sub-projects (either virtual or face-to-face) with end users, colleagues in PRDP, co-implementers and other stakeholders including Pre/World Bank Implementation Support Mission	Active and productive participation of the Pre/WB-ISM and joint inspection and turn-over of SPs	Number of Pre/WB-ISM, joint inspection and turn-over activities productively involved with.	10%									Quantity
			5%	25								Quantity
IV. CLEARANCES FOR NOL 1, NOL 2 VOS			10%									
4 Conducts collection of geospatial informations (photos, videos)	Collect, process and analyze geospatial	Number of SPs with geospatial	10%	3								Quantity
			10%									
V. TECHNICAL ASSISTANCE / SUPPORT			10%									
5 Provide technical assistance/ acted as resource speaker in the pipelined/prioritized subprojects, for the issuance of objection letter (OL) or no objection letter (NOL)	Review and provide findings/recommendation of	Number of I-BUILD subproject reviewed for NOL	5%	4								Quantity
			5%	4								Quantity
6 Provide technical assistance/ acted as resource speaker in the	Provide capability building, technical	Number I-SUPPORT related	5%	2								Quantity
			5%	1								Quantity
7 Performs other task as maybe assigned by the PRDP			5%	1								Quantity

### 3. Submit Accomplished iPEP Form

Go back to the web address of the iPEP-ARS then click the “submit accomplished iPEP Form” then click button  

The registration will be verified and approved by the user administrator and the iPEP by immediate supervisor.

**Note :** Once registration is verified and approved, the credentials and system generated password will be sent to the registered email address.

**Employee Registration**

[Upload PEP Template](#)

**Personal Information**

Firstname:  Middlename:

Lastname:  Extension Name:

Birthday:  Sex:  Male

Address:

Email:  Contact No.:

**Employment Information**

Official Station:

Component/Unit:

Designation:

Contract Start:  Contract End:

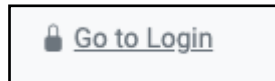
Employment Status:  Hired  Organic

KEY OUTPUT EXPECTATIONS (Based on the Actual Duties & Responsibilities in the Current Designation)	ACTIVITIES UNDERTAKEN	Indicator	Type (Quantity, Disbursement, Obligation)	TARGET									
				1st Quarter		2nd Quarter		3rd Quarter		4th Quarter			
				WEIGHT	TARGET	WEIGHT	TARGET	WEIGHT	TARGET	WEIGHT	TARGET		
ICT Solutions	Install ICT applications to intensify the use of online platforms and provide e-governance solutions to minimize face-to-face transactions, ensure continuity of operations/activity despite the threat of COVID-19 and adaptability of the Project to the new normal setting	Number of online platforms maintained and updated	QUANTITY	90%									
				10%	3			10%	3				
	Create, maintain, and update source code of the data collection tools of the Geomapping and Governance Unit such as geocamera app, geosmart, and geotagging tools for virtual field visits.	Number of GGU Tools maintained and updated	OBLIGATION	5%	200,000			5%	200,000				
	Test	Number of GGU Tools maintained and updated	QUANTITY	5%	2			5%	2				
	Assist in the enhancement/creation of geomapping systems for transparency & virtual site visits	Number of geomapping systems maintained and updated	QUANTITY	10%	1			10%	1				

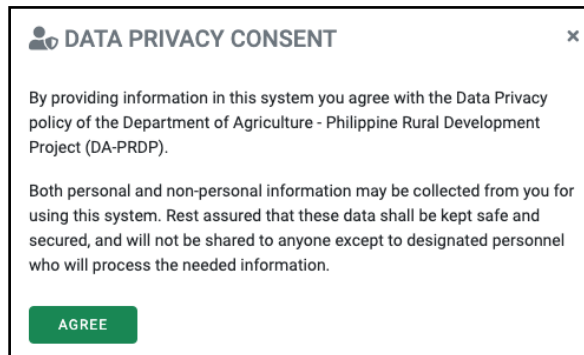
## SYSTEM LOG IN

*How to login your registered account?*

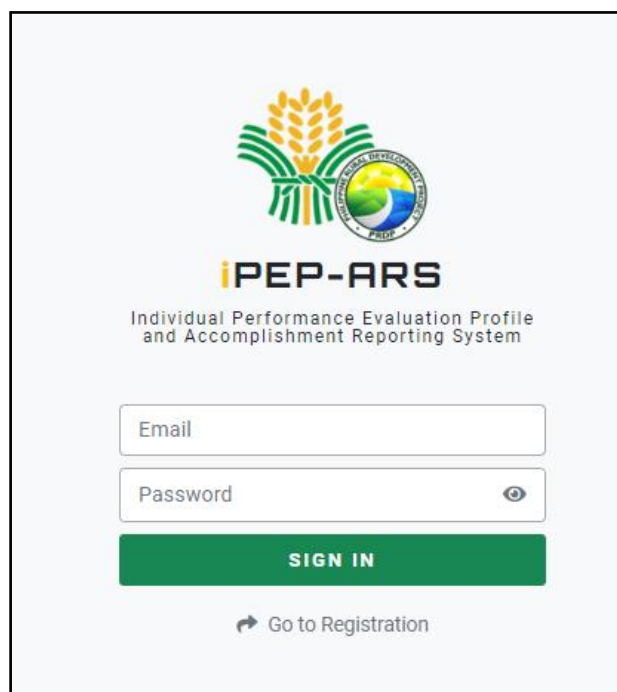
Go to [www.prdp-ipep.da.gov.ph](http://www.prdp-ipep.da.gov.ph) and click



In compliance to the Data Privacy Act 2012, a notification on data consent and confidentiality will pop-up before login the page.

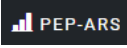


Click agree to proceed to the login page, then enter your credential account sent to your email address.



## INDIVIDUAL PERFORMANCE EVALUATION PROFILE MODULE

*How to break down iPEP targets from semistral to by quarter targets using the improved format?*

1. Once you are logged in, click the  tab then navigate to your iPEP page.

2. To break down targets, click the **MANAGE TARGET** button to edit, update or input your PEP to a by quarter targets.

**Performance Review and Development Profile**

JOSEPH CASINO PACON

**+ ADD NEW** **ARCHIVED ACCOMPLISHMENTS**

**ALTERNATE HEAD**  
NPCO • GGU • HIRED

**Contract Year**  
2022

**Status**  
1st Qtr - Approved  
2nd Qtr - Approved  
3rd Qtr - Approved  
4th Qtr - Approved

**SUBMIT ACCOMPLISHMENT** **MANAGE TARGET**

Preview PEP

**TARGETED PEP** **ACCOMPLISHED PEP**

### 3. Manage PEP target by quarter

The recently improved format of the iPEP module requires users to distribute targets by quarter. For the approved targets of the first semester from the previous PEP format, in default the system has distributed all targets to the first quarter, the user and immediate supervisor must discuss its distribution for the first and second quarter.

The system is also ready to accept entries for third and fourth quarter targets just click the blank column on target and weight for particular activity to input.

**Performance Review and Development Profile**  
Leo Mark Florendo Baldoz

**PEP Details**  
 Designation: GIS Specialist / Programmer  
 Component / Unit: I-SUPPORT (GGU)  
 Employment Status: Hired  
 Period: Jan 03, 2022 • Jun 30, 2022

KEY OUTPUT EXPECTATIONS (Based on the Actual Duties & Responsibilities in the Current Designation)	ACTIVITIES UNDERTAKEN	Indicator	Type (Quantity, Disbursement, Obligation)	TARGET							
				1st Quarter		2nd Quarter		3rd Quarter		4th Quarter	
				WEIGHT	TARGET	WEIGHT	TARGET	WEIGHT	TARGET	WEIGHT	TARGET
<b>ICT Solutions</b> + ADD ITEM / EDIT				<b>90%</b> <b>90%</b>							
Install ICT applications to intensify the use of online platforms and provide e-governance solutions to minimize face-to-face transactions, ensure continuity of operations/activity despite the threat of COVID-19 and adaptability of the Project to the new normal setting + ADD ACTIVITY / EDIT	Assist in the update on the online platform for virtual mission and other online platforms needs by the components/units of the Project + ADD INDICATOR / EDIT	Number of online platforms maintained and updated / EDIT	Quantity	10%	3	15%	1				
	Create, maintain, and update source code of the data collection tools of the Geomapping and Governance Unit such as geocamera app, geosmart, and geotagging tools for virtual field visits. + ADD INDICATOR / EDIT	Number of GGU Tools maintained and updated / EDIT	Quantity	10%	3	15%	1				
	Assist in the enhancement/creation of geomapping systems for transparency & virtual site visits + ADD INDICATOR / EDIT	Number of geomapping systems maintained and updated / EDIT	Quantity	10%	1						
Developed and maintained a web-based (in-house developed) work management system that aims to streamline the PEP document	Developed the work-management-system using programming scripts and system servers/cloud based configuration	Number of system development, maintenance and troubleshooting	Quantity	60%	1						

**Note:**

1. All activities must have a target for **at least one (1) quarter**.
2. The Approved Relative Weight % **must be totalled to 100%** per quarter target.

**Functions :**

**ADD ITEM** - use to add a **new category** under key output expectation and or to add a **new key output expectation** under the selected category.

**ADD ACTIVITY** - use to add a new activity or deliverable to a particular key output expectation.

**ADD INDICATOR** - use to add a new indicator to a particular activity.

**EDIT** - use to edit or update the description/content of the specific cell.

4. To submit click button  or  to save as draft.

**Note:** Targets for first semester that were previously approved by principals using the previous format and were scaled-down to first and second quarter will be automatically marked as approved.

**Accomplishment Reporting System (ARS) Module**

The ARS module was design to interlinked with the approved iPEP of individual personnel to effectively track progress and measure delivered output. The rating generated from the ARS that covers performance (quantity, quality & timeliness) and behavioral dimension will automatically add up to the Accomplished PEP of the individual employee, a requisite for renewal of contract.

**Note:** The ARS module can only work on approved (targeted) iPEP, below screenshot indicates that all four quarters PEP are approved with “AAA” elements.

**Status**  
 1st Qtr - Approved  
 2nd Qtr - Approved  
 3rd Qtr - Approved  
 4th Qtr - Approved

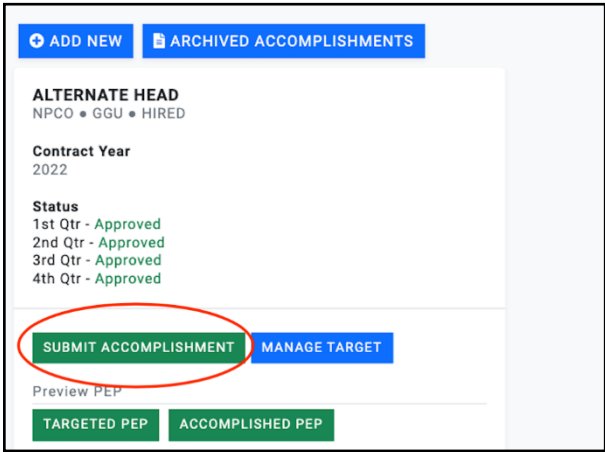
If your iPEP is currently at approval stage, kindly contact your immediate supervisor to review & approve your iPEP or endorse it to PSO or NPCO for approval.

Currently, the system has a multi-layer of approval per component/ unit from RPCO to PSO then NPCO before it could reach the approved with “AAA” elements as seen in the photo below:



*How to submit/ entry accomplishments per targeted activity and deliverables based on approved PEP?*

- Once you are logged in, click the **PEP-ARS** tab then navigate to your iPEP page.
- To submit accomplishments, click the **SUBMIT ACCOMPLISHMENT** to utilize the ARS module.




- Then select the quarter that you want to submit/ entry accomplishments by clicking the specific quarter tab as shown in the picture below:




- Look for the specific activity / indicator and click **+ ADD NEW** button under the accomplishment column.

1ST QTR 2ND QTR **3RD QTR** 4TH QTR OVERALL

  
 NPCO Approved  
 XERKEES REMOROZO  
 Sep 06, 2022 09:19:51 AM

KEY OUTPUT EXPECTATIONS (Based on the Actual Duties & Responsibilities in the Current Designation)	ACTIVITIES UNDERTAKEN	Indicator	Target Type (Quantity, Disbursement, Obligation)	Accomplishment	Approved Relative Weight
<b>ICT Solutions</b>					
Install ICT applications to intensify the use of online platforms and provide e-governance solutions to minimize face-to-face transactions, ensure continuity of operations/activity despite the threat of COVID-19 and adaptability of the Project to the new normal setting	Conducted relevant research, problem analysis and develop concept solutions to support ICT system development that the Project needs.	Number of concept notes/ papers developed in support of the system development need of the Project.	QUANTITY	1 / 1 + ADD NEW	20%
	Developed, enhanced, and maintained online portals for Virtual World Bank implementation Support Mission, Planners' Portal, Enterprise Developers' Portal, and among others	Number of online portals accessible and with usable information for the targeted system users	QUANTITY	1 / 1 + ADD NEW	10%
	Assisted the Unit Head in overseeing the development, implementation, and maintenance of ICT solutions that are headed by the GGU as part of the I-SUPPORT component of the Project such as IPEP, ISYP and among others	Number of system solutions that successfully developed, rolled-out and maintained by the Unit	QUANTITY	1.50 / 1 + ADD NEW	10%

7. Then click  button to entry delivered output specifically the **activity** conducted with its equivalent **output**.

**Activity**

**Output**

8. You may include supporting attachment such as documents, photos, video & among others through the add link button.

**Attachment Links:**

[Add Link](#)

9. Then specify the date of the activity conducted, from start until the output was achieved.

**Date** (Jul 01, 2022 - Sep 30, 2022)

10. Input the equivalent quantity of your accomplishment based on your delivered output or targeted indicator, entry must be in numerical value.

**Quantity**

Current Accomplishment: **0 / 1 (0.00%)**

11. Click the  button to save.

**Notes :**

1. All data fields are required to be filled-out, **except** for the reportorial requirement for M&E.

2. In amount entry, it must be encoded by its actual value ( ex. 200,000)

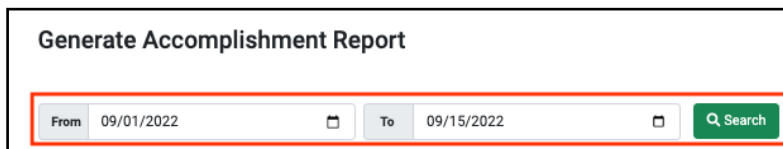
### GENERATE ACCOMPLISHMENT REPORT

The ARS platform, will automatically archived all submitted output and can now be accessed by the immediate supervisor and other principals. The immediate supervisor may now rate the quality and timeliness of accomplishment submitted.

The employee may now generate Accomplishment Reports through the sysmtem for remuneration/ compensation attachment.

*How to generate Accomplishment Report for submission to the admin unit?*

1. Once you are logged in, click the  **Reports** tab then navigate to report page.
2. Select date of report coverage you would like to generate for salary attachment then click search.



Generate Accomplishment Report


From 09/01/2022 To 09/15/2022 Search

3. Then all the report entry for the date selected will be automatically populated for your viewing as shown below:




Date	Activity	Output
Install ICT applications to intensify the use of online platforms and provide e-governance solutions to minimize face-to-face transactions, ensure continuity of operations/activity despite the threat of COVID-19 and adaptability of the Project to the new normal setting		
Assisted the Unit Head in overseeing the development, implementation, and maintenance of ICT solutions that are headed by the GGU as part of the I-SUPPORT component of the Project such as IPEP, ISYP and among others		
Aug 29, 2022 - Sep 03, 2022	Enhanced the training design of the ARS and PERC module to adjust to the recent mandate of the DA management to utilize virtual or hybrid modalities to ensure cost-effectiveness and efficiency in conducting activities.	Training & Workshop on Improved Format and ARS Module of the IPEP-ARS. The program of activities for the five (5) day virtual training & workshop, was designed to capacitate participants on how to utilize the improved format of the IPEP module, scale down targets by quarter, upload targeted IPEP for the second semester, and roll out the automated Accomplishment Reporting System of the DA-PRDP Work Management System (IPEP-ARS).  <b>Attachments:</b> <a href="#">Enhanced Training Activities</a>
Aug 29, 2022 - Sep 03, 2022	In preparation for the upcoming activity on September 05 to 09, 2022. The GGU prepared and developed a pre-action plan to provide a checklist and ready reference in the preparation of the nationwide activity of the Training & Workshop on Improved Format and ARS Module of the IPEP-ARS.	The Pre-Action plan serves as a reference for the preparatory meetings with the NPCO Heads/Alternate Head and the Admin Unit and also a checklist of things to do, to ensure all aspects of the program of activities will be smoothly implemented.  <b>Attachments:</b> <a href="#">Training &amp; Workshop on ARS_Pre &amp; Post Activity Action Plan</a>
Aug 29, 2022 - Sep 03, 2022	Prepared and finalized presentation materials for the roll-out of the IPEP Improved format and ARS module of the work management system of the DA-PRDP	The presentation includes the following materials and topics: 1. Overview of the DA-PRDP Work Management System (IPEP-ARS) development and updates 2. Training Design and Program of Activities 3. Introduction to Accomplishment Reporting System (ARS) module  <b>Attachments:</b> <a href="#">IPEP-ARS Updates &amp; Program of Activities ARS Concept</a>



- Then click  file for you to print, sign and for the immediate supervisor approval (through signature) before submitting to the admin unit.
- At the right portion of the printed copy a unique qr code was attached, so the admin can verify the authenticity of the documents if it's really generated from the iPEP-ARS.

## PRINCIPAL ACCOUNT

### 1. PEP Approval

- Login using registered principal account
- In principal account homepage, click the  button to view the list of PEP for approval under the principal's supervision.

**PEP for Approval**

Office: All | Component/Unit: I-BUILD | Year: 2022 | Search

Summary	Q1	Q2	Q3	Q4
For RPCO Review	97			
For PSO Endorsement	21			
For NPCO Approval	7			
Approved	0			
<b>TOTAL</b>	<b>125</b>			

Name	Component/Unit	Office	PEP Status (Quarterly)
<b>LEGARIO B. DAVID</b> RURAL INFRASTRUCTURE ENGINEER <small>HIRED</small>	I-BUILD	NPCO	CY 2022 1st Quarter for NPCO Approval <a href="#">VIEW DETAILS</a>
<b>RENE A. NACES</b> PROJECT DEVELOPMENT ASSOCIATE <small>HIRED</small>	I-BUILD	NPCO	CY 2022 1st Quarter for NPCO Approval <a href="#">VIEW DETAILS</a>
<b>JAN RANNON H. PADRINAO</b> RURAL INFRASTRUCTURE ENGINEER <small>HIRED</small>	I-BUILD	NPCO	CY 2022 1st Quarter for NPCO Approval <a href="#">VIEW DETAILS</a>
<b>JOEL P. CALIMPONG</b> RURAL INFRASTRUCTURE ENGINEER <small>HIRED</small>	I-BUILD	NPCO	CY 2022 1st Quarter for NPCO Approval <a href="#">VIEW DETAILS</a>
<b>FREDERICK I. AGASEN</b> ROADS AND BRIDGES SPECIALIST <small>HIRED</small>	I-BUILD	NPCO	CY 2022 1st Quarter for NPCO Approval <a href="#">VIEW DETAILS</a>
<b>IRENEO B. PANABANG</b> RURAL INFRASTRUCTURE ENGINEER <small>HIRED</small>	I-BUILD	NPCO	CY 2022 1st Quarter for NPCO Approval <a href="#">VIEW DETAILS</a>

- Select PEP and click the [VIEW DETAILS](#) button to be able to view its target for review/endorsement/approval.
- Select quarter to view target to be reviewed/endorsed/approved using the PEP target tab.

1ST QTR OVERALL

- For the PEP approval status, principals who can review/endorse/approve from RPCO-PSO-NPCO will be identified. If the currently logged principal is one of the principals identified under the current PEP status, a button will be shown depending on the action to be undertaken.

1 Approved with "AAA" elements

for NPCO Approval

**CRISTIA CECILIA POLIDO**  
I-BUILD Component Head

OR

**ROY ABAYA**  
I-BUILD Alternate Component Head

**Approve PEP**

OR

**SHANDY HUBILLA CESO IV ENP**  
Deputy Project Director

OR

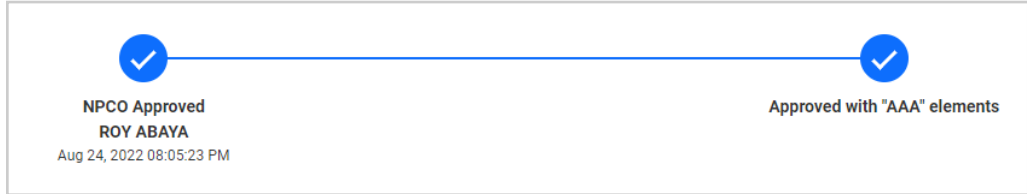
**NPCO-ADMIN USER ADMINISTRATOR**  
NPCO User Administrator

### Approve PEP ✕

Name	: Frederick I. Agasen
Designation	: Roads and Bridges Specialist (Hired)
Component / Unit	: I-BUILD
Office	: NPCO
Quarter	: 1st Quarter

**Approve PEP**

6. PEP approved with “AAA” elements



## 2. PEP Accomplishment Quality Rating

1. Set the PEP details to be populated in the principal homepage.

Office:  Year:  Quarter:

2. Click the  button to view the list of PEP under a particular component/unit

Component / Unit	Performance Rating	
OFFICE OF THE DEPUTY PROJECT DIRECTOR 3 Hired	☆☆☆☆ (0) No Rating <a href="#">Details</a>	<input type="button" value="DETAILS &gt;"/>
I-PLAN COMPONENT 4 Hired	☆☆☆☆ (0) No Rating <a href="#">Details</a>	<input type="button" value="DETAILS &gt;"/>
I-BUILD COMPONENT 7 Hired	☆☆☆☆ (0) No Rating <a href="#">Details</a>	<input type="button" value="DETAILS &gt;"/>
I-REAP COMPONENT 5 Hired	☆☆☆☆ (0) No Rating <a href="#">Details</a>	<input type="button" value="DETAILS &gt;"/>
I-SUPPORT COMPONENT 3 Hired	☆☆☆☆ (0) No Rating <a href="#">Details</a>	<input type="button" value="DETAILS &gt;"/>

3. In the list of PEP, select and click the  button to be able to view the targets of a particular PEP.

**List of PEP by Component / Unit**


Component / Unit : I-BUILD Component  
Office : NPCO  
Period : 2022 - 1st Quarter

**Disbursement Target**  
₱ 2,401,225,032.80  
[Update](#) [View](#) [Reset](#)

Name	Individual Performance	Behavioral Rating	
FREDERICK I. AGASEN Roads and Bridges Specialist <b>Hired</b>	☆☆☆☆ (0) No Rating <a href="#">Details</a>	☆☆☆☆ (0) No Rating <a href="#">Rate</a> <a href="#">Details</a>	<input type="button" value="DETAILS &gt;"/>
IRENEO B. PANABANG RURAL INFRASTRUCTURE ENGINEER <b>Hired</b>	☆☆☆☆ (0) No Rating <a href="#">Details</a>	☆☆☆☆ (0) No Rating <a href="#">Rate</a> <a href="#">Details</a>	<input type="button" value="DETAILS &gt;"/>
JAN RANNON H. PADRINAO Rural Infrastructure Engineer <b>Hired</b>	☆☆☆☆ (0) No Rating <a href="#">Details</a>	☆☆☆☆ (0) No Rating <a href="#">Rate</a> <a href="#">Details</a>	<input type="button" value="DETAILS &gt;"/>
JOEL P. CALIMPONG RURAL INFRASTRUCTURE ENGINEER <b>Hired</b>	☆☆☆☆ (0) No Rating <a href="#">Details</a>	☆☆☆☆ (0) No Rating <a href="#">Rate</a> <a href="#">Details</a>	<input type="button" value="DETAILS &gt;"/>
LEGARIO B. DAVID Rural Infrastructure Engineer <b>Hired</b>	☆☆☆☆ (0) No Rating <a href="#">Details</a>	☆☆☆☆ (0) No Rating <a href="#">Rate</a> <a href="#">Details</a>	<input type="button" value="DETAILS &gt;"/>
RENE A. NACES Project Development Associate <b>Hired</b>	☆☆☆☆ (0) No Rating <a href="#">Details</a>	☆☆☆☆ (0) No Rating <a href="#">Rate</a> <a href="#">Details</a>	<input type="button" value="DETAILS &gt;"/>

4. Select the period of target to be rated and click  button to view or rate actual accomplishment of a particular activity.

KEY OUTPUT EXPECTATIONS (Based on the Actual Duties & Responsibilities in the Current Designation)	ACTIVITIES UNDERTAKEN	Indicator	Target Type (Quantity, Disbursement, Obligation)	Accomplishment	Approved Relative Weight
<b>Disbursement</b>					<b>40%</b>
Assist the I-BUILD Unit in providing regular monitoring reports for the assigned island cluster operations especially on disbursement	Provided Implementation status, update and disbursement	Number of SPs with status report and disbursement.	<b>DISBURSEMENT</b>	0 / 75,113,212.58 <a href="#">VIEW or RATE</a>	40%
<b>Quality of Subprojects</b>					<b>20%</b>
Conducts monthly inspection of ongoing sub-projects and identify issues and problems relative to the five(5) quality assurance elements specified in the infrastructure quality monitoring and durability system(IQMS) and provide appropriate surveillance and audit reports to the PSOs.	Improved quality of subprojects through provision of reports in compliance/adherence to the quality assurance elements	Number of SPs with compliance reports	<b>QUANTITY</b>	0 / 12 <a href="#">VIEW or RATE</a>	20%

5. After reviewing the actual accomplishment, click  **UPDATE** button to update accomplishment quality rating.

### 1ST QTR Accomplishment

**Key Output Expectation**  
Assist the I-BUILD Unit in providing regular monitoring reports for the assigned island cluster operations especially on disbursement

**Activity**  
Provided Implementation status, update and disbursement


**Indicator**  
Number of SPs with status report and disbursement.

**Accomplishment**  
**Disbursement** (Actual Amount)  
0 / 75,113,212.58

**Quality** (Supervisor's Rating)

★ ★ ★ ★ ★

No Rating

 **UPDATE**

**Timeliness**

★ ★ ★ ★ ★

No Rating

Please rate the quality of employee's accomplishment

★ ★ ★ ★ ★

No Rating

[CANCEL](#) [SUBMIT](#)

### 3. Behavioral Rating

1. In the list of PEP under a particular component/unit, locate and click the **Rate Behavioral Rating** button.

List of PEP by Component / Unit

Component / Unit : I-BUILD Component  
Office : NPCO  
Period : 2022 - 1st Quarter

Disbursement Target  
₱ 2,401,225,032.80  
[Update](#) [View](#) [Reset](#)

Name	Individual Performance	Behavioral Rating	
<b>FREDERICK I. AGASEN</b> Roads and Bridges Specialist <span>HIRED</span>	☆☆☆☆☆ (0) No Rating <a href="#">Details</a>	☆☆☆☆☆ (0) No Rating <a href="#">Rate</a> <a href="#">Details</a>	<a href="#">DETAILS &gt;</a>
<b>IRENEO B. PANABANG</b> RURAL INFRASTRUCTURE ENGINEER <span>HIRED</span>	☆☆☆☆☆ (0) No Rating <a href="#">Details</a>	☆☆☆☆☆ (0) No Rating <a href="#">Rate</a> <a href="#">Details</a>	<a href="#">DETAILS &gt;</a>
<b>JAN RANNON H. PADRINAO</b> Rural Infrastructure Engineer <span>HIRED</span>	☆☆☆☆☆ (0) No Rating <a href="#">Details</a>	☆☆☆☆☆ (0) No Rating <a href="#">Rate</a> <a href="#">Details</a>	<a href="#">DETAILS &gt;</a>
<b>JOEL P. CALIMPONG</b> RURAL INFRASTRUCTURE ENGINEER <span>HIRED</span>	☆☆☆☆☆ (0) No Rating <a href="#">Details</a>	☆☆☆☆☆ (0) No Rating <a href="#">Rate</a> <a href="#">Details</a>	<a href="#">DETAILS &gt;</a>
<b>LEGARIO B. DAVID</b> Rural Infrastructure Engineer <span>HIRED</span>	☆☆☆☆☆ (0) No Rating <a href="#">Details</a>	☆☆☆☆☆ (0) No Rating <a href="#">Rate</a> <a href="#">Details</a>	<a href="#">DETAILS &gt;</a>
<b>RENE A. NACES</b> Project Development Associate <span>HIRED</span>	☆☆☆☆☆ (0) No Rating <a href="#">Details</a>	☆☆☆☆☆ (0) No Rating <a href="#">Rate</a> <a href="#">Details</a>	<a href="#">DETAILS &gt;</a>

2. Put a rating for every behavioral dimension item and put remarks in support of the rating being given.

Rate Behavioral Rating

Name : **FREDERICK I. AGASEN**  
Designation : **Roads and Bridges Specialist**  
Component / Unit : **I-BUILD Component**  
Office : **NPCO**  
Period : **2022 - 1st Quarter**

Character	2	4	6	8	10
Courtesy & Obedience	☆	☆	☆	☆	☆
Human Relations & Stress Tolerance	☆	☆	☆	☆	☆
Punctuality & Attendance	☆	☆	☆	☆	☆
Initiative & Leadership	☆	☆	☆	☆	☆
Judgment & Decision Making	☆	☆	☆	☆	☆

Remarks \*

[SUBMIT](#) [CANCEL](#)

3. Employee behavioral rating details

## Behavioral Rating Details



**ROY ABAYA**

 **Delete**

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Courtesy & Obedience 10

Human Relations & Stress Tolerance 10

Punctuality & Attendance 8

Initiative & Leadership 10

Judgment & Decision Making 10

**RATING (9.6) Excellent**

**Remarks**

Excellent work



## **Annex 10** Guidelines in preparing Virtual Field Visits

### ***GUIDANCE IN THE PREPARATION FOR THE VIRTUAL SP SITE VISIT, COMPONENT MEETING, AND CONTRACTORS MEETING***

It was agreed that there will be virtual site visits and meetings to be adopted during the 10<sup>th</sup> WB-ISM (May 2020). In order to have uniformity in the reporting of virtual field visit and meetings to be undertaken during the mission, the following are prescribed per activity:

#### ***VIRTUAL SITE VISIT FOR ROAD ACCESS:***

1. An **AUV taken video** of the **panoramic view of the facility (eg. FMR)** showing the road alignment and **sample road influence area (RIA)**.
2. **Videotag** of the field office showing the i) surroundings; ii) indoor office set-up showing the document filing, transparency board, SES corner, approved materials sample, PPE and medicine kits, covid-19 disinfectant; iii) comfort rooms, iv) waste disposal and v) curing pond.
3. **Videotag** of the batching plant showing the i) area/space for aggregate stockpile; ii) cement storage; iii) batching plant; iv) washing area and V) tagging of flammable materials or chemical storage.
4. **Videotag** of a livable living quarters showing the type and make of the facility or if liveout then videotag of working/quarantine pass documents/IDs.
5. **Videotag of progress** implementation and ongoing construction showing and highlighting the i) updated project billboard; ii) grievance poster; iii) station 0+000; iv) while traversing from station 0+000 with the videotag, zoom in to where there are defects in the road shoulder, side ditch/canal, PCCP, embankment fill at the slope, and side cuts; v) at location of RCPC and RCBC, zoom in at the inlet and outlet; vi) at location of slope protection structures, zoom in at the spot with defects or not complying to specifications; vii) at location of bridges-zoom in at the foundation, column/abutments, girder, slab, railings; viii) at location of signages-zoom in to the signs e.g. drawing of pedestrian crossing; ix) at location of construction workers-zoom in to what is being done, the equipment and laborers; x) at location of ongoing field testing-zoom in to the test activity, the Materials Engineer and helpers; and finally xi) end station showing road connectivity if it is an intersection or condition of the road connection.
6. Ensure an e-copy (word,excel,pdf) of all documents normally maintained as active file and or displayed in the field office to be uploaded in a platform being organized by M&E.

#### ***VIRTUAL SITE VISIT FOR VERTICAL STRUCTURES:***

1. An **AUV taken video** of the panoramic view of the facility (eg. Coffee Processing) and showing the site development.
2. **Videotag** of the field office showing the i) surroundings; ii) indoor office set-up showing the document filing, transparency board, SES corner, approved materials sample, PPE and medicine kits, covid-19 disinfectant; iii) comfort rooms, iv) waste disposal and v) curing pond.
3. **Videotag** of a livable living quarters showing the type and make of the facility or if liveout the videotag of working/quarantine pass documents/IDs.
4. **Videotag** of progress implementation and ongoing construction showing and highlighting the i) updated project billboard; ii) grievance poster; iii) foundation works; iv) column and beam; v) slab; vi) walls, doors and windows; vii) roof frame/truss members; viii) roofing; ix) painting; x) plumbing; xi) electrical; xii) mechanical; xiii) drainage; xiv) septic tank; xv) water supply; xvi) signages-zoom in to the signs e.g. deep excavation; xvii) at location of

construction workers-zoom in to what is being done, the equipment/tools and laborers; and xviii) at location of ongoing field testing-zoom in to the test activity, the Materials Engineer and helpers.

5. Ensure an e-copy (word,excel,pdf) of all documents normally maintained as active file and or displayed in the field office to be uploaded in a platform being organized by M&E.

### ***COMPONENT MEETING***

This is conducted with the following topics: i) performance of the component in terms of physical and financial targets, ii) compliance to previous mission findings, and iii) issues and concerns affecting the performance of the component and iv) observations during the virtual site visit. In this connection, there would be a power point presentation for items i and ii while item iii will be opened to the RPCO, PSO, NPCO and WB participants to raise and for the virtual field observation, it will be left to the WB mission members to discuss.

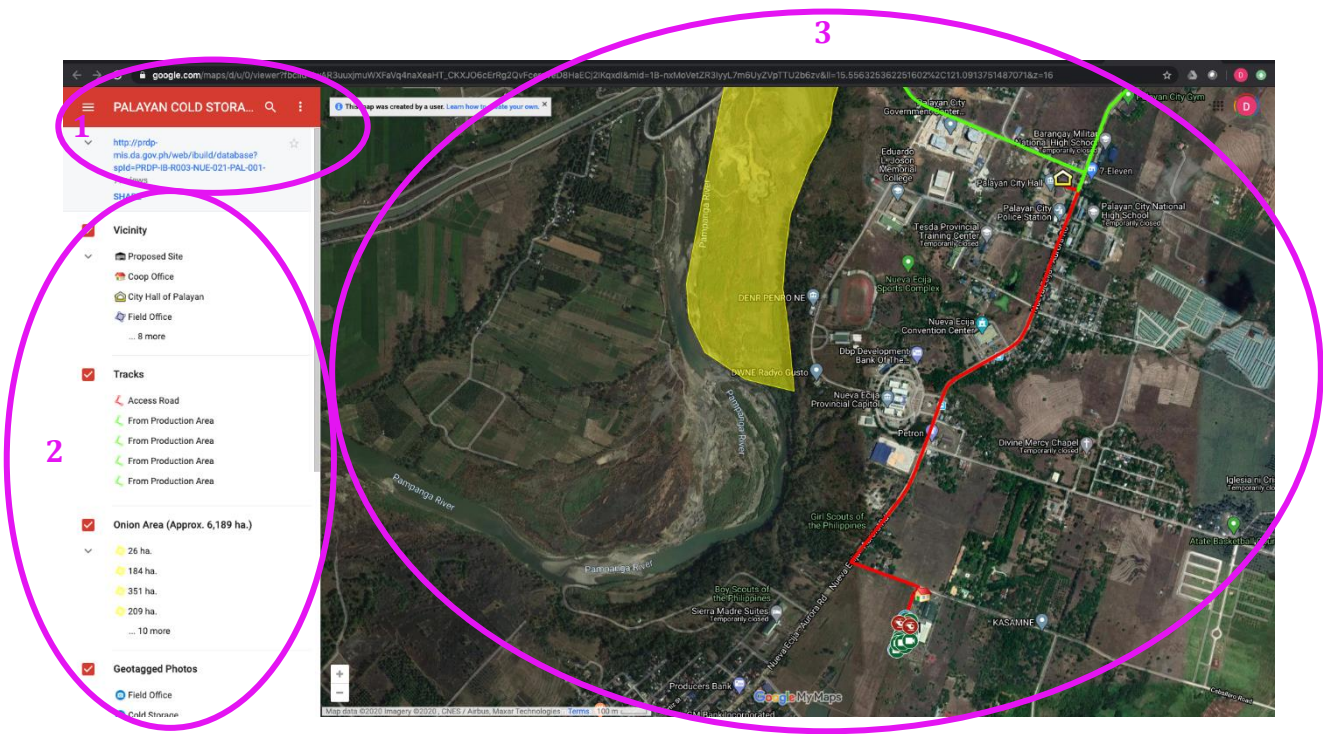
It was agreed that the virtual site documentation and the e-copy of construction documents shall be provided to the WB in advance so that any clarification will be provided prior to the actual virtual mission so that the Bank Representatives will just discuss their findings and recommendations during the component meeting.

### ***CONTRACTORS MEETING***

This is conducted with the following topics: i) powerpoint presentation of SP procurement updates and prospect opportunities for bidding, ii) powerpoint presentation of common issues and concerns affecting the SP implementation progress relative to the contract provisions, and iii) open forum to accommodate any concerns from the Contractors and other participants.

### **QUICK GUIDE FOR A VIRTUAL SITE VISIT OF A PRDP SUBPROJECT (Exploring the subprojects using Google My Maps)**

- All materials needed to simulate as close as possible the on-site experience of visiting a PRDP subproject are organized in **Google My Maps**. Hyperlinks will usually be provided to access or open the materials being referred to.
- The figure below is a typical graphical interface of **Google My Maps**, showing the 3 main parts: **1)** the map title and description; **2)** the list of feature layers; and **3)** the map view window displaying the listed layers.



- The **map title** would normally be the name of the subproject and the **description** would contain short narrative about the subproject. The description may also provide hyperlink that would redirect to a more detailed information about the subproject.
- The feature **layers** that are ‘checked’ from the list are respectively shown in the map view window as **placemarks, lines, or polygons**. The type of features should correspond to the layer being represented.
- Clicking a **sublayer** should highlight that specific feature (placemark, lines, or polygons) in the map view while also redirecting to its **attribute window**. This attribute window should contain a description field where hyperlinks are provided to show materials about the specific feature, it could be **photos, videos, and documents**.