



Department of Environment and Natural Resources  
Ecosystems Research and Development Bureau

OCT 13 2023

**MEMORANDUM**

**FOR :** **The Directors**  
Forest Management Bureau  
Biodiversity Management Bureau  
Land Management Bureau  
Mines and Geosciences Bureau

**The Executive Directors**  
Region I, II, III, IVa, IVb, V, VI, VII,  
VIII, IX, X, XI, XII, XIII

**FROM :** The Director

**SUBJECT :** **REPORTING OF FOREST PESTS AND DISEASES  
IN THE FIELD**

This has reference to the instructions and agreements during the Midyear Mindanao Field Operations Management Conference last 23-25 August 2023 at the Farm @ Carpenter Hill, Koronadal City in Region-XII. Please be informed that in concurrence with DAO 2012-05, all pests and diseases detected in the field should be reported to ERDB and FMB. Further, please be informed that ERDB is ready to assist Regional/Field offices in the conduct of assessment and capability building.

The assistance will be subjected to the existing ERDB TA guidelines attached hereto.

For your perusal.

  
**MARIA LOURDES G. FERRER, CESO III**



**MEMORANDUM ORDER**

No. 05

Series of 2019

**SUBJECT: REVISING THE ERDB MEMORANDUM ORDER NO. 4 SERIES OF 2007 GUIDELINES GOVERNING THE PROVISION OF TECHNICAL ASSISTANCE OR CONDUCT OF SIMILAR ACTIVITIES**

Pursuant to Executive Order Nos. 192 and 366, in consonance with the DENR Administrative Order No. 96-97, with reference to the ERDB Memorandum Order No. 4, series of 2007, guidelines governing the provision of technical assistance or conduct of similar activities, and cognizant of the need to define and rationalize the provision of technical assistance of the Ecosystems Research and Development Bureau (ERDB) to clientele, the following guidelines are promulgated for guidance and compliance of all concerned:

**SECTION 1. Policy**

It is the policy of ERDB to have a clearly defined and strengthened system of providing technical assistance on environment and natural resources (ENR) that is beneficial to both ERDB and its clients. This is consistent with the Bureau's mandates to generate and transfer technologies as a research, development and extension (RDE) institution.

**SECTION 2. Definition and Classification**

Under these guidelines, technical assistance shall be defined as any activity carried out by ERDB personnel, inside and outside the office, to provide knowledge, techniques, methodologies, guidance, or any combination thereof, to a requesting party. The type of technical assistance may take the following forms:

- 2.1 Attending to *simple queries and walk-in clients* – Provide answers or explanations to simple concerns, inquiries, and certain situations and phenomena relating to environment and natural resources;
- 2.2 *Deployment in the field* – Participate in the conduct of scientific investigation, diagnosis, analysis, and assessment of ENR-related circumstances;
- 2.3 *Technology briefings* – Act as Resource Person (RP) in presenting the nature, technical details, and utility of ERDB-developed technologies through the conduct of technology briefings such as orientations, fora, demonstrations, seminars, and other forms of technology dissemination;
- 2.4 Conduct of *capacity building and enhancement activities* – Conduct of trainings, workshops, and similar activities that will enhance the knowledge and develop the skills of ERDB clients on environment and natural resources;
- 2.5 Provision of *technical inputs to policies, programs, and projects* – Serve as resource person, technical reviewer, technical working group member or any similar capacity to provide inputs to policies, programs, projects and activities outside of ERDB;

- 2.6 Provision of *expertise on ENR under long-term engagements* (minimum of 3 years) – Extend technical advice and/or expertise to ENR programs and projects under long-term engagements, usually covered by a Memorandum of Agreement and ERDB/DENR Special Orders.

### **SECTION 3. Requesting parties**

Any party who wishes to avail of ENR technologies may request for technical assistance. The requesting party may be from any of the following:

- a. DENR offices, bureaus, and attached agencies;
- b. Local government units (LGUs),
- c. Other government agencies;
- d. Academe;
- e. Non-governmental organizations and other civil society organizations;
- f. International and intergovernmental organizations;
- g. Indigenous people;
- h. Private sector; and
- i. Other individuals, groups, or organizations belonging to the marginalized sector.

### **SECTION 4. Criteria in the grant of Technical Assistance**

Approval of the request for the provision of technical assistance shall be based on the following considerations:

- 4.1 Consistency with the mandates of ERDB and relevance with current and priority RDE thrusts and programs;
- 4.2 Priority on the promotion of ERDB-generated technology/ies;
- 4.3 Availability and commitment of the requesting party to allocate funds, personnel and other resources for the purpose;
- 4.4 Determination of all relevant benefits and costs; and
- 4.5 In consideration of other requests/instructions referred to or ordered by the Office of the DENR Secretary as part of ERDB's staff function.

### **SECTION 5. Processing of requests**

The provision of technical assistance shall be initiated by the requesting party's written request addressed and submitted to the ERDB Director except as provided for walk-in clients (Section 2.1) wherein this requirement may be optional (Annex 1).

The ERDB Director or his/her duly authorized representative is the approving authority for technical assistance requests. All requests for technical assistance shall be approved by the Director or his/her duly authorized representative. If approved, the provision of technical assistance shall follow the prescribed procedure as shown in *Annexes 1-5* (process flow of provision of TA).

- 5.1 Requests related to deployment in the field (Section 2.2), technology briefing (section 2.3), and provision of technical inputs to programs, projects, and policies (section 2.5), shall be referred to the division/s or Research Centers concerned for immediate assignment and deployment of technical personnel. Refer to Annexes 2, 3, and 5.
- 5.2 Requests related to capacity building and enhancement activities (Section 2.4) shall be referred to the Technology Transfer Division (TTD). Refer to Annex 4.

## **SECTION 6. Qualification of the technical assistance provider**

ERDB personnel who possess any of the following are qualified to provide technical assistance:

1. Designated focal person of the Bureau on the subject matter;
2. Proven track record of experience and expertise on the subject matter;
3. Conducted/technically involved in the study on the requested topic;
4. Acted as Resource Person (RP) on the topic;
5. Published materials on the subject matter; and
6. Formal training on the subject matter.

## **SECTION 7. Reporting of technical assistance provided**

Reports on technical assistance provided shall be submitted to the Director within five working days after the conduct of the technical assistance. Moreover, a summary of technical assistance conducted should be submitted by each division or research center as part of the quarterly accomplishment report through Planning and Management Information Services Unit (PMISU). The prescribed report template in Annex 6 shall be followed and a copy of these reports shall be provided to TTD. Client Satisfaction Surveys shall be summarized and analyzed by TTPEU/TTD every quarter.

## **SECTION 8. Client Satisfaction Survey (CSS)**

The CSS will serve as the feedback mechanism tool to determine the level or degree of acceptability of the TA rendered to the clientele. The standardized CSS forms (Annex 7) will gauge the clients' satisfaction of the TA services provided by ERDB. Result of the CSS will be the basis to make necessary adjustments to improve the ERDB's provision in extending technical services. CSS forms shall be made available at the Office of the Chief of each Division and RDEC. For walk-in clients, the CSS Form no. 1 shall be made available at the front desk. The form should be filled up upon completion of each TA and forwarded to TTD as indicated in the process flows (Annexes 1 to 5).

## **SECTION 9. Source of funds**

All expenses related to the requests of technical assistance from ERDB shall be shouldered by the requesting party except in the following cases:

- a. The requesting party is a people's organization;
- b. LGUs from 3<sup>rd</sup> to 5<sup>th</sup> class municipality;
- c. Non-profit oriented Civil Service Organizations;
- d. Indigenous people; and
- e. Other individuals, groups, or organizations belonging to the marginalized sector.

The expenses to be shouldered by the client shall cover the following:

- a. Travel/transportation allowance;
- b. Per diem or food and accommodation;
- c. Supplies and materials;
- d. Honorarium, if applicable; and
- e. Other incidental expenses.

## **SECTION 10. Memorandum of Agreement**

All long-term engagements as defined in Section 2.6 for technical assistance shall be covered by a Memorandum of Agreement (MOA) between the requesting party and ERDB unless deemed unnecessary as determined by the Director or his/her duly authorized representative. The MOA shall clearly define and incorporate the following, among others:

- 11.1 Nature and scope of the technical assistance;
- 11.2 Parties involved and their roles and responsibilities;
- 11.3 Obligations and commitments;
- 11.4 Allocation of funds and other logistical requirements;
- 11.5 Periodic monitoring and evaluation;
- 11.6 Confidentiality of the agreement;
- 11.7 Ownership of generated information and materials; and

All materials produced such as publications, articles, IEC materials, and project reports should indicate the name of ERDB as owner or co-owner of such. Moreover, the requesting party, should they have subsequent related events, should duly cite ERDB as the source of knowledge.

- 11.8 Effectivity and duration and ground for termination.

This does not preclude other engagements less than three years to be covered by a MOA.

#### **SECTION 11. Review of the Technical Assistance guidelines**

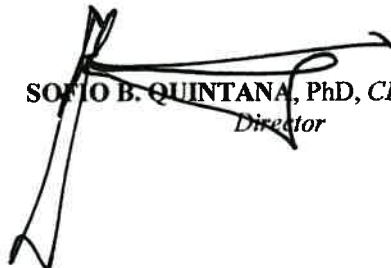
These guidelines shall be reviewed every three years or as the need arises to ensure its relevance and effectiveness. TTD shall take the lead in the conduct of the review with consultation from the technical and service divisions, RDECs and other personnel involved.

#### **SECTION 12. Repealing Clause**

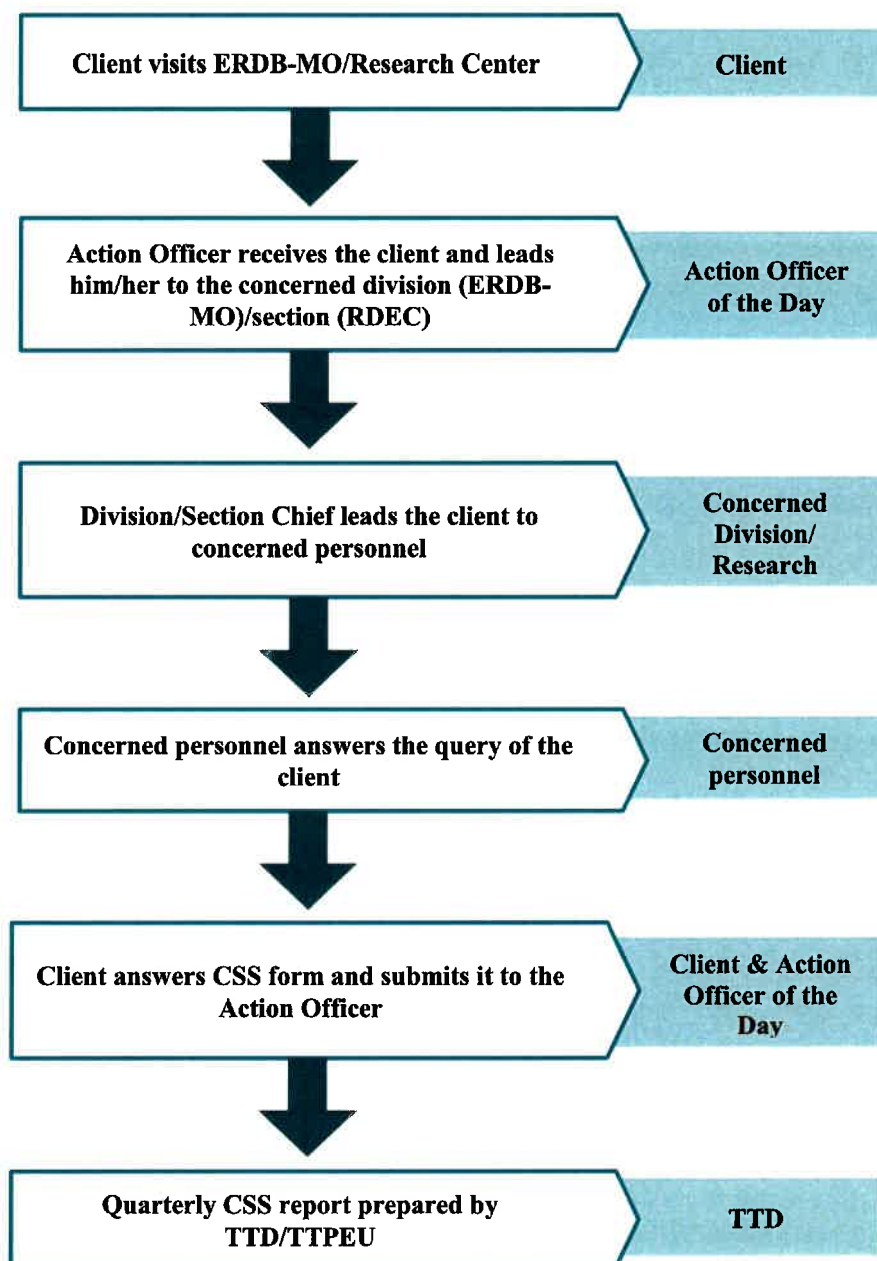
All orders and issuances inconsistent herewith are hereby amended or revoked accordingly.

#### **SECTION 13. Effectivity**

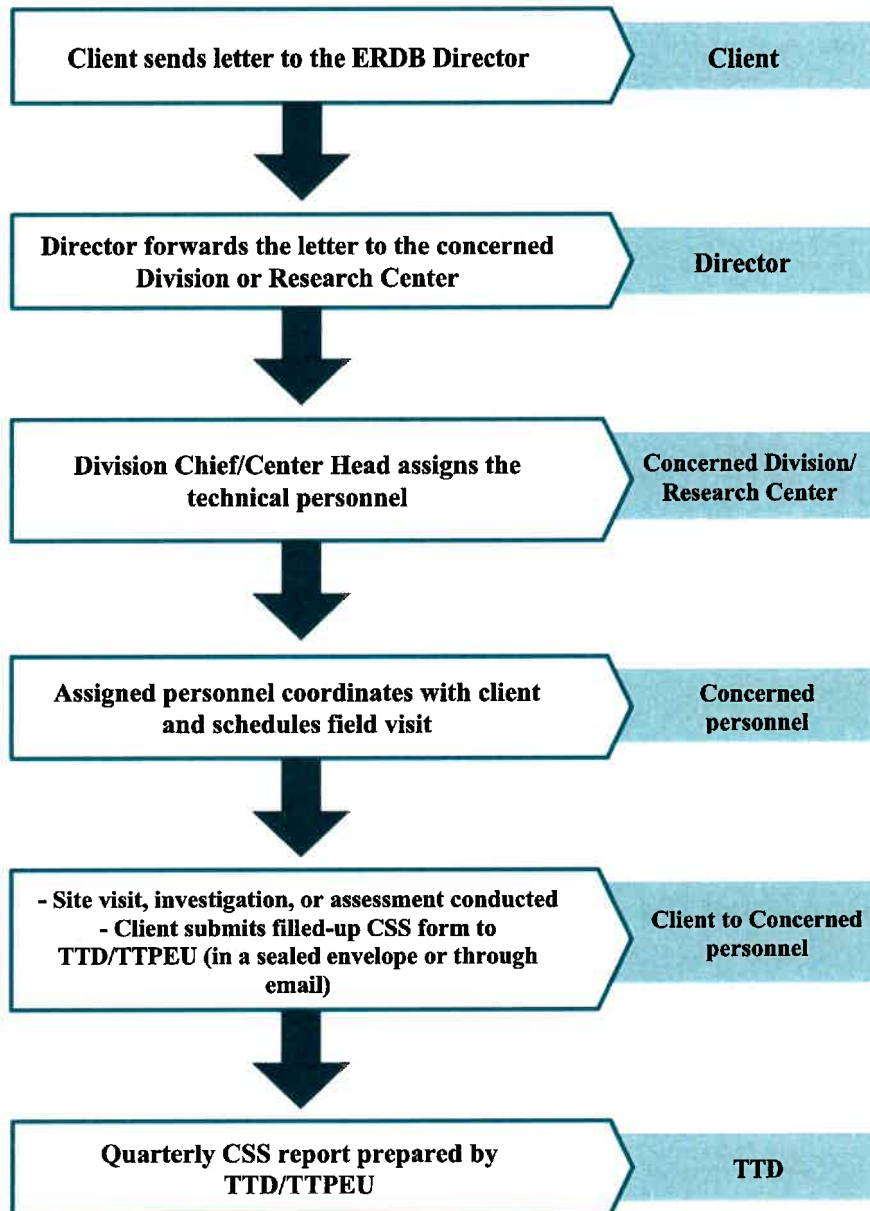
This order shall take effect immediately.

  
SOFIO B. QUINTANA, PhD, CESO III  
*Director*

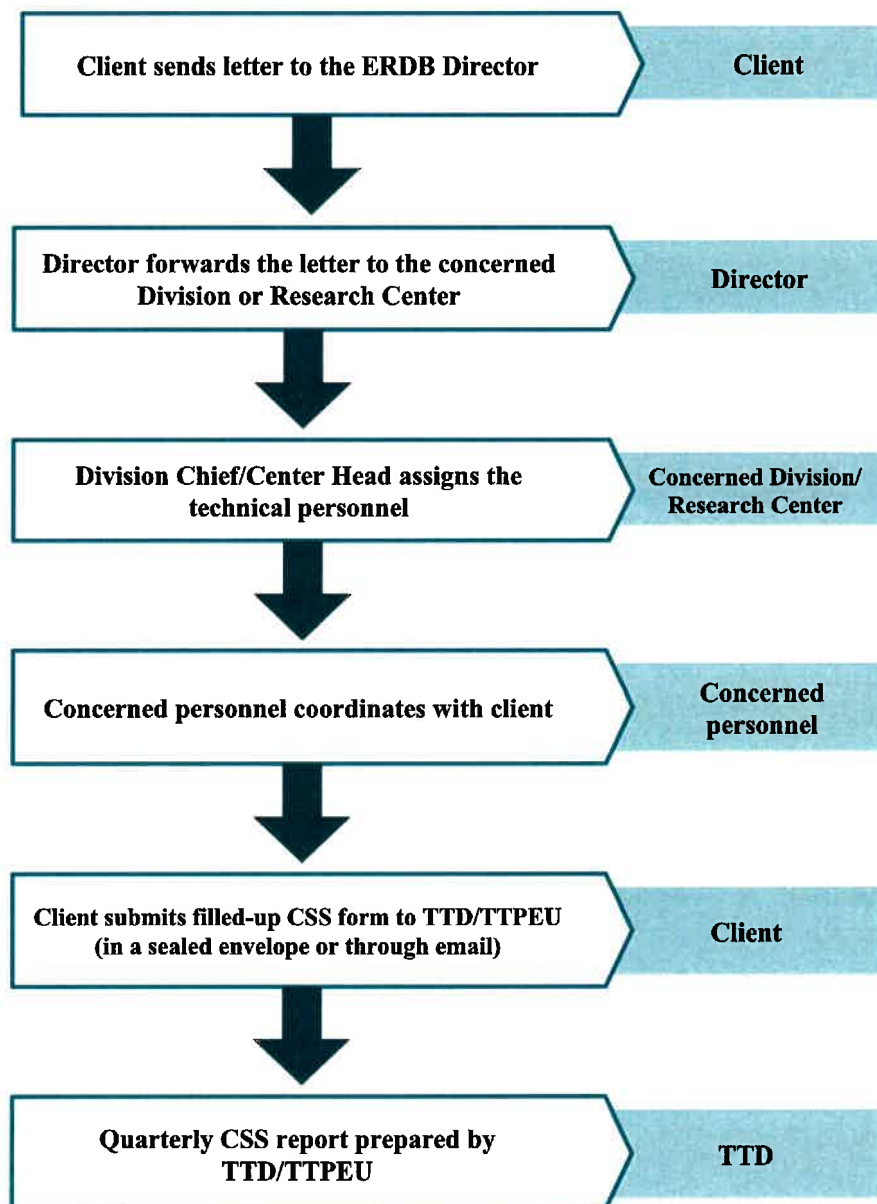
**Annex 1. Process flow for the provision of Technical Assistance - SIMPLE QUERY AND WALK-IN CLIENT**



**Annex 2. Process flow for the provision of Technical Assistance -  
DEPLOYMENT IN THE FIELD**

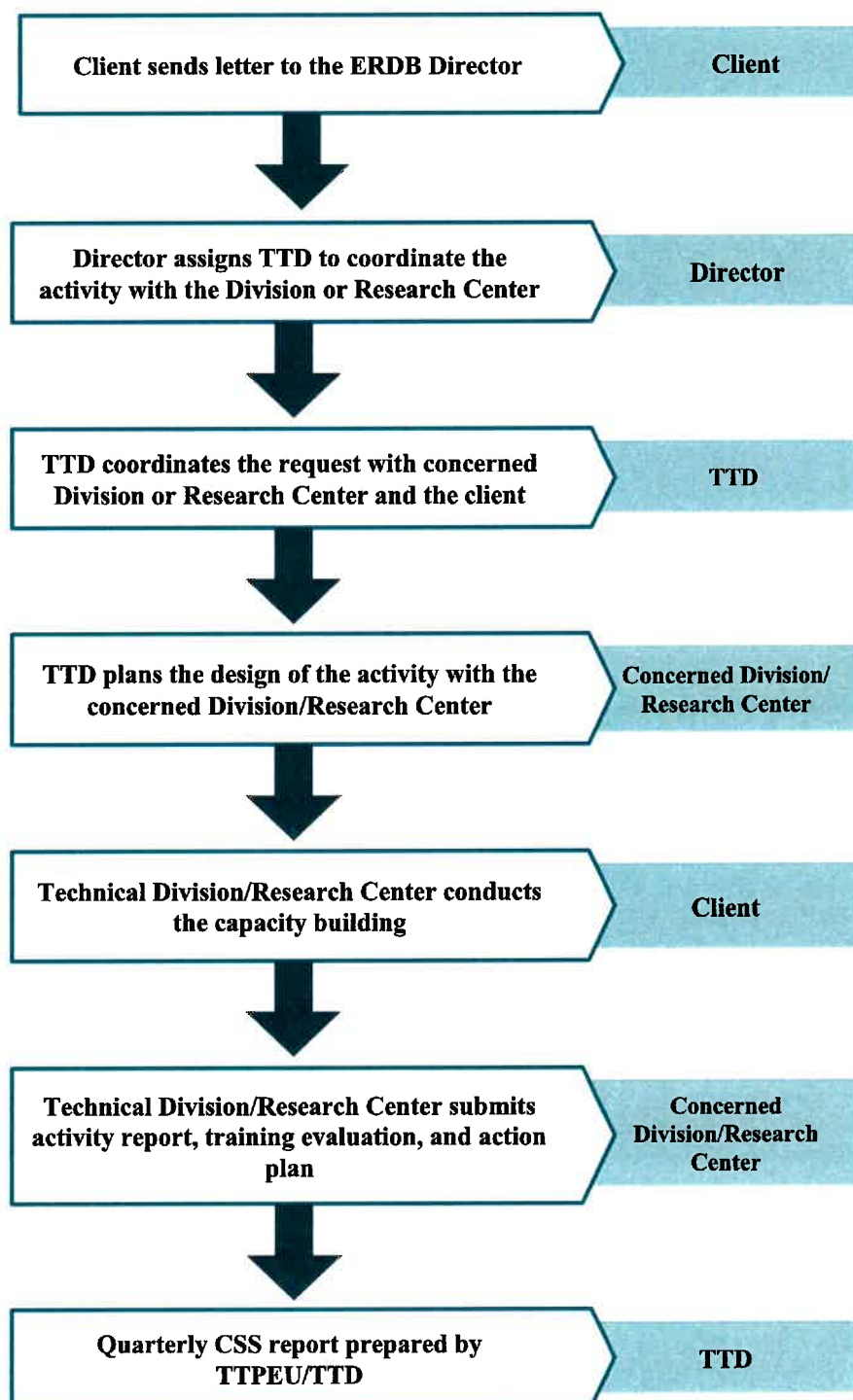


**Annex 3. Process flow for the provision of Technical Assistance -  
TECHNOLOGY BRIEFINGS**

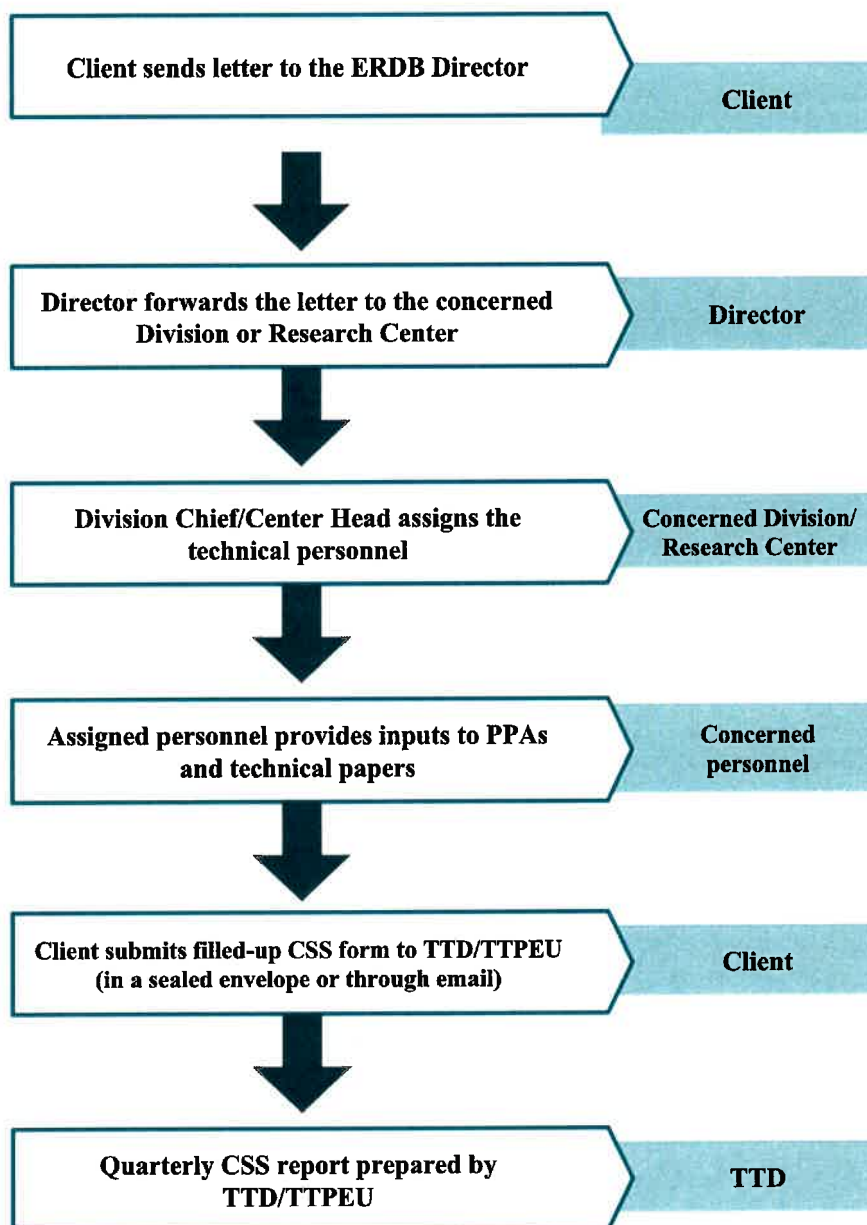




**Annex 4. Process flow for the provision of Technical Assistance - CAPACITY BUILDING AND ENHANCEMENT ACTIVITIES**



**Annex 5. Process flow for the provision of Technical Assistance - TECHNICAL INPUTS TO POLICIES, PROGRAMS, AND PROJECTS**



## Annex 6. Technical Assistance Quarterly Report Form

### Quarterly Report Form for Technical Assistance

#### A. Summary of Technical Assistance Provided

Type of technical assistance provided*	Topic and description	Technical Assistance Site or location	Date/ Inclusive Dates of Technical Assistance	Personnel in charge/ Resource person	Requesting Party (Name and address of organization, and focal person)					Name, address, and description of beneficiary			Remarks (e.g. client satisfaction rating)
					Name of organization	Address	Name	Contact details	Gender	Name of organization	Address	Description	
A. Walk-in													
B.													
C.													

(To be filled up by technical divisions and RDECs)

#### B. Summary of CSS for each TA type prepared by TTD/TTPEU and submitted to the Office of the Director


Note: Types of Technical Assistance:

- \*2.1 **Attending to simple queries and walk-in clients** - Provide answers or explanations to simple concerns, inquiries, and certain situations and phenomena relating to environment and natural resources;
- \*2.2 **Deployment in the field** - Participate in the conduct of scientific investigation, diagnosis, analysis, and assessment of ENR-related circumstances;
- \*2.3 **Technology briefings** - Act as Resource Person (RP) in presenting the nature, technical details, and utility of ERDB-developed technologies through the conduct of technology briefings such as orientations, fora, demonstrations, seminars, and other forms of technology dissemination;
- \*2.4 **Conduct of capacity building and enhancement activities** - Conduct of trainings, workshops, and similar activities that will enhance the knowledge and develop the skills of ERDB clients on environment and natural resources;
- \*2.5 **Provision of technical inputs to programs, projects, and policies** - Serve as resource person, technical reviewer, technical working group member or any similar capacity to provide inputs to policies, programs, projects and activities outside of ERDB;
- \*2.6 **Provision of expertise on ENR under long-term engagements (minimum of 3 years)** - Extend technical advice and/or expertise to ENR programs and projects under long-term engagements, usually covered by a Memorandum of agreement and ERDB/DENR Special Orders

## Annex 7. Client Satisfaction Survey (CSS) Forms

ERDB-CSS Form No.1 for the walk-in clients and simple query

*ERDB-CSS Form No. 1*



Department of Environment and Natural Resources  
ECOSYSTEMS RESEARCH AND DEVELOPMENT BUREAU

### CLIENT SATISFACTION SURVEY FORM

*Simple Query/ Walk-in Client*

Date: \_\_\_\_\_

Name & Signature: \_\_\_\_\_






Office/Agency/Organization: \_\_\_\_\_

Contact No: \_\_\_\_\_ Email Address: \_\_\_\_\_

Concerned Division/Personnel: \_\_\_\_\_

Inquiry: \_\_\_\_\_

**Instruction: Check (✓) the desired/appropriate answer(s).  
Kindly answer all items.**

 <b>1</b> VERY UNSATISFIED	 <b>2</b> UNSATISFIED	 <b>3</b> NEUTRAL	 <b>4</b> SATISFIED	 <b>5</b> VERY SATISFIED
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	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1) Courteousness of the staff	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Prompt action or service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Adequacy of information provided	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) Over-all satisfaction with the quality of service that you received:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments/suggestions to improve our service: \_\_\_\_\_

\_\_\_\_\_

*Thank you!*

# ERDB-CSS Form No.2 for acting as Resource Speaker during Technology Briefings

ERDB-CSS Form No.2



Department of Environment and Natural Resources  
ECOSYSTEMS RESEARCH AND DEVELOPMENT BUREAU

## CLIENT SATISFACTION SURVEY FORM

RESOURCE SPEAKER/TECHNICAL EXPERT

Name & Signature: \_\_\_\_\_

Topic: \_\_\_\_\_

Speaker: \_\_\_\_\_

Event: \_\_\_\_\_

Date: \_\_\_\_\_

Sex: ( ) Male ( ) Female

**Instruction: Check (✓) the desired/appropriate answer(s). Kindly answer all items.**

	1 VERY UNSATISFACTORY	2 UNSATISFACTORY	3 NEUTRAL	4 SATISFACTORY	5 VERY SATISFACTORY
1) Mastery of subject matter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Clarity in delivery/demonstration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Competence in answering questions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) Rapport with participants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other comments or suggestions to improve the speaker's presentation?

\_\_\_\_\_

\_\_\_\_\_



Department of Environment  
and Natural Resources  
ECOSYSTEMS RESEARCH  
AND DEVELOPMENT BUREAU  
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Facebook: fb.com/ERDBgovph

Use your phone  
camera to scan  
ERDB QR Code



ERDB-CSS Form No.3



Department of Environment and Natural Resources  
ECOSYSTEMS RESEARCH AND DEVELOPMENT BUREAU

## CLIENT SATISFACTION SURVEY FORM

TRAINING EVALUATION FOR PARTICIPANTS

Name and Signature: \_\_\_\_\_ Sex: ( ) Male ( ) Female

Title of Training/Workshop: \_\_\_\_\_

Date and Venue: \_\_\_\_\_

Office & Designation: \_\_\_\_\_

Office Address: \_\_\_\_\_

Contact number and email of office: \_\_\_\_\_

**Instruction A: Briefly explain your answers.**

1) What were your objectives/expectation in attending this training?

\_\_\_\_\_

\_\_\_\_\_

**Instruction B: Check (✓) the desired/appropriate answer(s).**

2) Were your objectives/expectations met? ☐ Yes ☐ No

Why or Why not? \_\_\_\_\_

**Instruction C: Shade your level of satisfaction with the following statements.**



1  
VERY  
UNSATISFACTORY



2  
UNSATISFACTORY



3  
NEUTRAL



4  
SATISFACTORY



5  
VERY  
SATISFACTORY

	1	2	3	4	5
3) Adequacy of knowledge gained	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4) Duration of the training workshop activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5) Technical competence of Resource Persons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6) Delivery of the training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7) Training design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8) Overall rating of the training/workshop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other comments and suggestions:

\_\_\_\_\_

\_\_\_\_\_

Based on the quality of service provided by ERDB, will you request for  
Technical Assistance from ERDB again? ☐ Yes ☐ No



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Use your phone  
camera to scan  
ERDB QR Code









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**DENR ADMINISTRATIVE ORDER**  
No. 2012- 05

**AUG 28 2012**

**SUBJECT : GUIDELINES ON SURVEILLANCE, MONITORING,  
PREVENTION, CONTROL AND REPORTING OF  
FOREST PESTS**

Pursuant to Sec. 37 of Presidential Decree No. 705, as amended, otherwise known as the "Revised Forestry Code of the Philippines", Executive Order No. 192 otherwise known as the "Reorganization Act of the Department of Environment and Natural Resources" and Executive Order No. 26 ordering and declaring the implementation of a National Greening Program (NGP) as a government priority, the following guidelines on surveillance, monitoring, prevention, control and reporting of forest pests are hereby promulgated and issued for compliance of all concerned.

**Section 1. Basic Policy.** It is the policy of the State to ensure the sustainable use, development, management and conservation of the country's forest resources not only for the present but also for the future generations. The government, through the Department of Environment and Natural Resources (DENR), shall promote the use of high quality planting materials in the establishment of tree plantations, tree farms, agro-forestry and other forestation activities for biodiversity conservation and sustainable production, and supply of wood and other forest products in the country.

**Section 2. Scope and Coverage.** The guidelines shall cover the surveillance, monitoring, prevention, control and reporting of pests in natural forests, plantations, agro-forestry areas, mining areas, protected areas, ancestral lands and private forest lands.

**Section 3. Definition of Terms.** For the purpose of this Order, the following shall be defined:

- a. **Action** - the measures being applied to address the pest infestation whether preventive, remedial, stop-gap or long term.
- b. **Ancestral land** - land, subject to property rights within the ancestral domain already existing and/or vested upon the effectivity of Republic Act No. 8371 or the Indigenous Peoples' Rights Act of 1997, occupied, possessed and utilized by individuals, families, clans who are members of the ICCs/IPs since time immemorial, by themselves or through their predecessors-in-interest, under claim of individual or traditional group ownership, continuously to the present except when interrupted by war, force majeure, deceit, stealth, or as a consequence of government projects and other voluntary dealings entered into by the government and private individuals/corporations, including, but not limited to, residential lots, rice terraces or paddies, private forests, swidden farms and tree lots.



Republic of the Philippines  
Department of Environment and Natural Resources  
AND ITS LOCAL OFFICES



**SENRO33416**

- c. Agro-forestry - the sustainable management of land, which increases its productivity by properly combining agricultural crops with forest crops simultaneously or sequentially over time through the application of management practices which are compatible with the local climate, topography and slope.
- d. Disease - a condition in which any part of a living organism is abnormal; the condition of a plant that is being continuously affected by some factors that interfere with the normal activity of the plant's cells or organs. Injury, in contrast, results from a momentary damage.
- e. Mining areas - portion of the contract area identified by the contractor for purposes of development, mining utilization and sites for support facilities or in the immediate vicinity of the mining operation.
- f. Monitoring - activities or research instruments that aim to detect change in the behavior, appearance, condition or performance of natural forests, forest plantations, agro-forestry areas, "reclaimed" (rehabilitated) mining "lands" (areas) and private forest lands, that may be attributable to pests and diseases.
- g. Natural Forest - a forest where majority of the stands are formed from natural regeneration, timber stand improvement (TSI) and assisted natural regeneration (ANR). It may, therefore, comprise other fast-growing forest tree species introduced for the purpose of rehabilitation and reforestation. (This definition recognizes the employment of appropriate silvicultural treatments in the management of natural forest).
- h. Plantation - a man-made forest stand established by planting or seeding for the purpose of land rehabilitation, protection and timber production.
- i. Private Forest Land - land titled to a person or juridical entity by virtue of statutory and/or customary laws developed or managed for timber production. Forest stands may be naturally occurring or planted.
- j. Pests - insects, fungi and other microorganisms capable of infesting and destroying the forests.
- k. Reporting - the process of documenting results of investigation or observation and submission of the documents duly signed by the Forest Pest Surveillance and Monitoring Officer to the official unit.
- l. Surveillance - the observation and monitoring of the progress or development of the pest disease.

**Section 4. Forest Pest Surveillance, Monitoring and Reporting.** The following procedures shall be observed in forest pest surveillance, monitoring and reporting:

- 4.1 Every Community Environment and Natural Resources Office (CENRO) with forest(s) under its jurisdiction shall designate a Forest Guard who shall concurrently act as Forest Pest Surveillance and Monitoring Officer (FPSMO).



OFFICE OF THE PROSECUTOR  
DEPARTMENT OF ENVIRONMENT  
AND NATURAL RESOURCES



8ENR033418



- 4.2 The FPSMO shall conduct regular forest inspection activities in his/her area of jurisdiction and coordinate with the forest tenure holder, private plantation owner, protected area supervisor, or indigenous people (IP) group, and local communities.
- 4.3 Forest Pest Surveillance and Monitoring shall be included under the Forest Protection activities of the concerned CENROs and reporting shall be regular with or without infestation. When there is no forest pest incidence monitored, the FPSMO will just note "No Observed Forest Pest Incidence" in his/her regular area patrol report.
- 4.4 In cases of actual infestation, the FPSMO shall conduct an initial evaluation of the nature and extent of forest pest infestation. He/She shall fill up the *DENR Forest Pest Surveillance Field Form* in Appendix 1a and prepare and submit a memorandum letter to the CENRO within two (2) working days after reporting back to the office, containing a brief narrative report of the infestation event.
- 4.5 The CENRO shall forward the report including his/her own recommendation to the Regional Executive Director (RED), copy furnished to the Provincial Environment and Natural Resources Officer (PENRO).
- 4.6 The RED, through channels, shall alert the Directors of the Ecosystems Research and Development Bureau (ERDB) and the Forest Management Bureau (FMB), and in case the infestation covers, or there is a threat to protected areas, the Protected Areas and Wildlife Bureau (PAWB), who shall recommend to the Supervising Undersecretary the creation of an ad hoc Forest Pest Assessment Team to verify, assist and recommend to the RED the appropriate control measures.
- 4.7 Upon the recommendation of the Ad Hoc Forest Pest Assessment Team, subject to the usual government regulations and the approval of higher authorities, the RED may engage into contract with private entities for the control of forest pest in his area of jurisdiction.
- 4.8 The Forest Pest Assessment Team shall inform the RED of the most appropriate time to re-assess the infestation after the forest pest control activities and shall conduct re-evaluation of the area as to the success or failure of the control measures. The Team may recommend to the RED the necessary further course of action to totally eliminate the pest and prevent similar incidence.
- 4.9 When infestations occur in forests occupied by IPs, close coordination shall be held by the CENRO with their leaders as to what specific courses of action shall be undertaken and shall be covered by an appropriate Memorandum of Agreement (MOA) between the DENR and the IP leader.

#### **Section 5. Other Responsibilities of the Concerned Bureaus**

- 5.1 The ERDB, FMB and PAWB, in coordination with the other DENR Offices and stakeholders, shall continue to devise ways and means in forest pest surveillance, monitoring, detection, prevention, control and reporting.



5.2 The ERDB shall take the lead in research, data base development and the conduct of capacity building and IEC activities on the biology of forest pests, infestations, prevention and control for DENR Central and field personnel, selected stakeholders, including members of indigenous communities.

5.3 The FMB shall lead the monitoring and evaluation of forest pest surveillance, prevention, control and reporting activities and the conduct of capacity building and IEC activities on silvicultural strategies towards the prevention and control of forest pests.

5.4 The PAWB shall lead the conduct of capacity building and IEC activities in forest pest prevention and control as a strategy in protected area management.

5.5 In the conduct of capacity building, the Bureaus may invite resource persons in and out of the DENR who have expertise in Forest Entomology, Forest Pathology, Integrated Pest Management, and related fields. Resource persons from outside DENR are entitled to honoraria subject to the usual accounting and auditing rules and regulations.

**Section 6. Funding.** The funds for the institutionalization of the forest pest surveillance, monitoring, prevention, control, training and capacity building, and other associated activities shall be charged to the regular appropriations specifically programmed or allotted to the forest protection funds of the DENR Regional Offices.

**Section 7. Repealing Clause.** All orders and issuances inconsistent herewith are hereby amended or revoked.

**Section 8. Effectivity.** This Order shall take effect immediately and shall remain in force unless repealed/revoked in writing.

  
**RAMON J.P. PAJE**  
Secretary



DEPARTMENT OF ENVIRONMENT  
AND NATURAL RESOURCES



8ENR033416

**DENR FOREST PESTS SURVEILLANCE FIELD FORM**

<b>SURVEILLANCE OFFICER</b> NAME _____ OFFICE _____ DATE _____ VALIDATED BY: _____	<b>REGION</b> _____ <b>PROVINCE</b> _____ <b>MUNICIPALITY</b> _____ <b>BARANGAY</b> _____ <b>SITIO</b> _____ LOGGING AREA, if applicable: _____ COMPARTMENT, if applicable: _____ GPS READING _____	<b>AREA AFFECTED</b> AREA INFESTED _____  <b>DISTRIBUTION</b> <input type="checkbox"/> SINGLE TREE <input type="checkbox"/> SCATTERED TREES <input type="checkbox"/> PATCHES <input type="checkbox"/> WIDESPREAD  <b>TOPOGRAPHY</b> <input type="checkbox"/> RIDGES <input type="checkbox"/> SLOPES <input type="checkbox"/> FLATS <input type="checkbox"/> DIRECTIONAL  <b>SEVERITY</b> <input type="checkbox"/> MINOR (1-10%) <input type="checkbox"/> MODERATE (11-20%) <input type="checkbox"/> SEVERE (21-100%)  INCIDENCE _____ %  <b>METHOD</b> <input type="checkbox"/> ESTIMATED <input type="checkbox"/> COUNTED
<b>TYPE</b> <input type="checkbox"/> PLANTATION <input type="checkbox"/> NATURAL FOREST <input type="checkbox"/> NURSERY <input type="checkbox"/> COMMUNITY FOREST <input type="checkbox"/> ROADSIDE TREES <input type="checkbox"/> PORTS <input type="checkbox"/> OTHERS _____	<b>OWNERSHIP</b> <input type="checkbox"/> CORPORATION <input type="checkbox"/> PUBLIC FOREST <input type="checkbox"/> PRIVATE <input type="checkbox"/> PARK  OWNER/SUPERVISOR _____	
<b>TREE SPECIES</b> COMMON NAME _____ SCI. NAME _____ AGE _____ SPACING _____	<b>PARTS AFFECTED</b> <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> LEAVES  <input type="checkbox"/> BUD  <input type="checkbox"/> SHOOT  <input type="checkbox"/> TWIG  <input type="checkbox"/> BRANCH  <input type="checkbox"/> LEADER  <input type="checkbox"/> STEM  <input type="checkbox"/> BUTT  <input type="checkbox"/> ROOT COLLAR  <input type="checkbox"/> ROOT           </div> <div> <input type="checkbox"/> FLOWER  <input type="checkbox"/> SEED  <input type="checkbox"/> BARK  <input type="checkbox"/> SAPWOOD  <input type="checkbox"/> HEARTWOOD   <input type="checkbox"/> UPPER  <input type="checkbox"/> MIDDLE  <input type="checkbox"/> LOWER  <input type="checkbox"/> DIRECTIONAL           </div> </div>	
<b>GROWTH STAGE</b> <input type="checkbox"/> SEEDLING <input type="checkbox"/> SAPLING <input type="checkbox"/> POLE <input type="checkbox"/> MATURE <input type="checkbox"/> OVERMATURE	<b>DAMAGE (insect pests)</b> <input type="checkbox"/> PUNCTURE <input type="checkbox"/> MINING <input type="checkbox"/> SKELETONIZING <input type="checkbox"/> CHEWING <input type="checkbox"/> DEFOLIATION <input type="checkbox"/> RING BARKING <input type="checkbox"/> BORING W/ FRASS <input type="checkbox"/> SAP SUCKING <input type="checkbox"/> FOLDING <input type="checkbox"/> BLOTCHING <input type="checkbox"/> ROLLING <input type="checkbox"/> SEVERING <input type="checkbox"/> TUNNELING <input type="checkbox"/> OTHERS _____	<b>SYMPTOMS &amp; SIGNS (Diseases)</b> <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> SPOT  <input type="checkbox"/> BLIGHT  <input type="checkbox"/> SCORCH  <input type="checkbox"/> CANKER  <input type="checkbox"/> DIEBACK  <input type="checkbox"/> STUNTING  <input type="checkbox"/> CHLOROSIS  <input type="checkbox"/> RESINOSIS  <input type="checkbox"/> MOSAIC/MOTTLING  <input type="checkbox"/> CURLING  <input type="checkbox"/> ROSETTING  <input type="checkbox"/> GALL  <input type="checkbox"/> SCAB  <input type="checkbox"/> WILTING  <input type="checkbox"/> DECAY/CAVITY  <input type="checkbox"/> OTHERS _____           </div> <div> <input type="checkbox"/> FUNGAL MYCELIUM  <input type="checkbox"/> SPORES  <input type="checkbox"/> FRUITING BODIES  <input type="checkbox"/> BACTERIAL OOZE  <input type="checkbox"/> SCLEROTIAL BODIES  <input type="checkbox"/> NEMATODES  <input type="checkbox"/> PARASITIC PLANTS  <input type="checkbox"/> OTHERS _____           </div> </div> <b>TYPE OF DECAY</b> <input type="checkbox"/> ACTIVE <input type="checkbox"/> PASSIVE
<b>STATUS</b> <input type="checkbox"/> LIVING <input type="checkbox"/> STANDING DEAD <input type="checkbox"/> FALLEN <input type="checkbox"/> OTHERS _____  <input type="checkbox"/> DOMINANT <input type="checkbox"/> CODOMINANT <input type="checkbox"/> SUPPRESSED <input type="checkbox"/> UNDERSTORY	<b>SUSPECTED CAUSE</b> <input type="checkbox"/> INSECT <input type="checkbox"/> FUNGUS <input type="checkbox"/> ANIMAL <input type="checkbox"/> PARASITIC PLANT <input type="checkbox"/> NEMATODES <input type="checkbox"/> OTHERS _____	<b>OTHER STRESS FACTORS</b> <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> WIND  <input type="checkbox"/> LIGHTNING  <input type="checkbox"/> INSOLATION  <input type="checkbox"/> FIRE  <input type="checkbox"/> WATER LOGGING  <input type="checkbox"/> SOIL COMPACTION           </div> <div> <input type="checkbox"/> NUTRIENT  <input type="checkbox"/> SALT  <input type="checkbox"/> HERBICIDE  <input type="checkbox"/> WEEDS  <input type="checkbox"/> DROUGHT  <input type="checkbox"/> OTHERS _____           </div> </div>
<b>PURPOSE OF RAISING THE SPECIES</b> _____  <b>SOIL ANALYSES</b> <input type="checkbox"/> PHYSICAL <input type="checkbox"/> CHEMICAL <input type="checkbox"/> NONE <b>CHEM APPLIED/AMT &amp; FREQ.</b> <input type="checkbox"/> LIME <input type="checkbox"/> FERTILIZER <input type="checkbox"/> FUNGICIDE <input type="checkbox"/> INSECTICIDE <input type="checkbox"/> OTHERS _____	<b>GENERAL ASSESSMENT OF THE SITUATION:</b> _____	

\_\_\_\_\_  
PENRO/CENRO OFFICER / SIGNATURE

# APPENDIX 1b

## GUIDE TO TECHNICAL TERMS IN THE DENR FOREST PESTS SURVEILLANCE FIELD FORM

TECHNICAL TERMS	DESCRIPTION
Active decay	The destruction or decomposition of organic matter/plant organ/tissues as a result of microbial action. A state of rotting evidenced by the causal agent as in sporophores of fungus or bacterial ooze.
Bacteria	Tiny unicellular organisms with dimensions ranging from 0.2 to 5.0 microns (1 micron = 0.001mm). They are not individually visible under a hand lens but can be seen with the aid of a compound microscope. Bacterial infections are sometimes characterized by appearance of slimy ooze and foul odor.
Blight	A general term used to describe the shriveling and death of some or all of the foliage and young shoots of a plant.
Blotching	A dark patch on a leaf caused by a minute insect larvae "mining" or burrowing between the upper and lower epidermis.
Boring	Damage caused by wood, bark and shoot feeding insects whose well developed mouth parts allow them to tunnel in or chew woody tissue.
Butt-rot	A rot characteristically confined to the base or lower bole of a tree.
Canker	Localized necrotic lesion primarily of the bark and cambium.
Chewing	Damage caused by insects and vertebrate pests that eat the leaf tissue.
Chlorosis	Characterized by yellowing often associated with tissues surrounding a necrotic area.
Curling	Distorting, flutting and puffing of a leaf due to unequal development of its sides.
Decay	Deterioration caused by wood destroying fungi.
Defoliation	Damage caused by certain insects that completely strip trees and other plants of their leaves.
Dieback	Progressive dying of stems and branches from the tip downward.



<b>Folding</b>	Refers to the wrapping, enclosing or enveloping as in a fold or folds by an insect.
<b>Frass</b>	A mixture of sawdust produced by the insect in the process of tunnel building under the bark of trees and insect excrement that is usually expelled out through holes.
<b>Fruiting bodies</b>	A complex fungus structure that contains or bears spores from which they are disseminated. The most important types are apothecia, perithecia, conidiospores, coremia, sporangia, pycnia or spermagonia, aecia, pycnidia, acervuli, and sperodochia. Mushrooms of the Basidiomycetes and Ascomycetes are fruiting bodies of perfect stage.
<b>Gall</b>	A pronounced swelling or outgrowth on a woody plant caused by a certain fungi, bacteria, nematodes or insects.
<b>Mining</b>	Damage caused by larvae of certain insects that consume interval leaf tissue while leaving the thin, papery skin of the epidermis intact.
<b>Mosaic</b>	Development of irregular, light and dark green blotches on the leaves.
<b>Mycelium</b>	A mass of hyphae which forms the vegetative filamentous body of a fungus.
<b>Nematodes</b>	A round worm having tubular body with a mouth and well-developed alimentary canal. The nematodes that cause plant disease pierce the cells of a plant with a stylet and suck up the juices.
<b>Parasitic plants</b>	Plants that vary in degree of dependence on other plants but all of them produce chlorophyll and are capable of manufacturing food from carbon dioxide and water although dependent on the host plant for certain minerals and organic substances.
<b>Passive decay</b>	Inactive state of rotting without the causal agent.
<b>Resinosis</b>	Resin exudates coming out from the injured/infested portion of the plants/trees.
<b>Rolling</b>	Refers to coiling round and round by itself.
<b>Rosetting</b>	Internodes of shoots or branches fail to elongate normally, making the leaves crowded into clusters.
<b>Sap sucking</b>	Damage caused by sap feeding insects having sucking mouth parts that allow them to draw liquid from the host plant.
<b>Scab</b>	Abnormal thickening of the outer layer of tissues resulting from one local irritation.

Severing	Refers to the detaching, dividing or cutting action by an insect.
Sclerotial bodies	Small seed-like structures of densely aggregated mycelium with a thick covering, color varying from brown to dark or black.
Scorch	A superficial burn usually caused by the sun on foliage causing browning/discoloration.
Signs	One of the two principal indications of a diseased plant. Signs are evidences and structures that the causal organism produced – usually either the vegetative or fruiting structures. The other indications of disease are certain symptoms expressed by the host plant such as the production of epicormic shoots.
Skeletonizing	Damage caused by the larvae of certain lepidopterans insects (moths) that consume all of the leaf tissue except the lattice of veins.
Spore	Reproductive structure of the fungi and other lower plants.
Spot	A definite diseased area usually on the leaves; a limited lesion usually sunken on the leaves.
Stunting	Abnormal dwarfing of the plant either caused by pest or mineral/nutritional deficiency.
Symptom	The external and internal evidences of the disturbance in the normal development and function of a host plant.
Tunneling	Damage caused by wood boring insect feeding in the cambial region beneath the bark or in shoots, or deeply into the sapwood and heartwood.
Wilting	The drooping of foliage from water deficiency, commonly as a result of the blocking of the conduction system of the plant.



Department of Environment and Natural Resources  
**ECOSYSTEMS RESEARCH AND DEVELOPMENT BUREAU**  
**FOREST AND WETLAND RESEARCH, DEVELOPMENT AND**  
**EXTENSION CENTER**  
Maharlika, Bislig City, Surigao del Sur, CARAGA  
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### **Rationale on the proposed Institutionalization of Pest Surveillance Team**

The Department of Environment and Natural Resources Administrative Order 2012-05 (DAO 2012-05) created guidelines on surveillance, monitoring, prevention, control and reporting of forest pests to ensure the sustainable use, development, management and conservation of the country's forest resources not only for the present but also for the future generations.

The increase of production of forest tree plantation species under Executive Order 26 declaring the implementation of a National Greening Program (NGP) and other private tree farmers also increases the number of incidence of pest and disease occurrence. Recent monitoring and assessment of the project titled "Development of Integrated Pest Management in response to climate change" of the Ecosystems Research and Development Bureau-Forest and Wetland Research Development and Extension Center (ERDB-FWRDEC), reported an increasing incidence of pest infestation in forest tree plantations. Moreover, pest and disease problem was also one of the identified important concern related to forest and timber that needs immediate action based on Technology Needs Assessment (TNA) conducted by the Center's Technology Transfer, Packaging, Promotion, and Extension Unit (TTPEU) of FWRDEC for CY 2018 and CY 2019. The TNA was attended by representatives from various agencies. The most frequent concern raised by representatives was information and technologies for management of Gall rust affecting *Falcata*. Gall rust disease is one of the major pests that can affect the productivity of *Falcata*. It is prevalent in Region 10 and continually affecting plantations in the nearby regions. In fact, infection of the disease in *Falcata* plantation is very alarming. The alarming spread of the disease has prompt various agencies to request for capacity building and technical assistance (Annex II). Additionally, problems on pink canker disease and carpenter borer has also arise recently which could be influenced by climate, introduction of IAS and monoculture farming system. Favorable weather condition and availability of food is an advantage for proliferation of pests. Moreover, increasing demands to address pest and disease problems was also common even on native tree species.

An increase in insect pest and disease problems in the forest and forest tree plantations can affect the production and quality of wood products. Hence, there's a need to institutionalization of forest pest surveillance team in order to fast tract the monitoring of pest and disease occurrence in the forest and forest tree plantations as part of the strategies for the maintenance and development of Integrated Pest Management (IPM).

**REVIEW AND ASSESSMENT OF MAJOR  
NATURAL RESOURCES (NR) LAW AND POLICIES**

**ANNEX I. ECOSYSTEMS RESEARCH AND DEVELOPMENT BUREAU**

NR Laws and Policies	Description	Amendment, if any	Policy Gaps/Issues/Concerns Identified	Policy Recommendation
DAO 2012-05	Guidelines on surveillance, monitoring, prevention, control and reporting of forest pests	<p>Institutionalization of forest pests surveillance team</p> <ul style="list-style-type: none"> <li>Please see Section 2.1 &amp; 2.6, and addition Section 2.4</li> </ul>	<ul style="list-style-type: none"> <li>The existing policy was not properly implemented in the field offices which is the frontline service.</li> <li>The increasing production of forest tree plantations also increases the number of insect pest and diseases that can affect the forest production and wood quality resulting to low yield.</li> <li>The field office has no designated Forest Pest Surveillance Monitoring Officer (FPSMO).</li> <li>Lack of basic knowledge on insect pest and diseases in forest and forest tree plantations.</li> <li>No data-base system developed</li> </ul>	<ul style="list-style-type: none"> <li>The policy on institutionalization of pest surveillance team must be properly implemented in order to have a systematic monitoring and assessment of the existing forest and forest tree plantation on insect pest and disease problem.</li> <li>The FPSMO must be identified and possess basic knowledge on pest and disease.</li> <li>The data-base system must be implemented in every field offices to have a comprehensive and accessible presentation of the data gathered on the health status of every plantations and also to have basis for the proper management strategies.</li> <li>Capacity building of the identified FSMPO, extension officers, and famers must be implemented.</li> </ul>



## **INSTITUTIONALIZATION OF PESTS SURVEILLANCE TEAM**

**WHEREAS**, Department of Environment and Natural Resources Administrative Order 2012-05 (DAO 2012-05) created guidelines on surveillance, monitoring, prevention, control and reporting of forest pests to ensure the sustainable use, development, management and conservation of the country's forest resources not only for the present but also for the future generations;

**WHEREAS**, the increase of production of forest tree plantation species under Executive Order 26 declaring the implementation of a National Greening Program (NGP) also increases the number of incidence of pest and disease occurrence;

**WHEREAS**, recent monitoring and assessment of Ecosystems Research and Development Bureau-Forest and Wetland Research Development and Extension Center (ERDB-FWRDEC) reported an increase in pest incidence occurrence within forest tree plantation;

**WHEREAS**, an increase in insect pest and disease problems in the forest and forest tree plantations can affect the production and quality of wood products. Hence, there's a need to Institutionalization pest surveillance team in order to fast tract the monitoring of pest and disease occurrence in the forest and forest tree plantations as part of the strategies for the maintenance and development of Integrated Pest Management (IPM);

**NOW, THEREFORE**, the following are hereby ordered.

**Section 1. Scope and Coverage.** The forest pest surveillance and monitoring shall cover the natural forests, plantations, agro-forestry areas, mining areas, protected areas, ancestral lands, and private forest lands.

**Section 2. Reactivation of Forest Pests Surveillance Team.** The forest pest and disease surveillance team shall be reactivated and the guidelines are as follows.

2.1 Every Provincial Environment and Natural Resources Office (PENRO) shall designate a Focal Person for the monitoring and surveillance of forest pests and every Community Environment and Natural Resources Office (CENRO) with forest(s) under its jurisdiction shall designate two Forest Officers with basic knowledge on pest and disease surveillance who shall act as Forest Pest Surveillance and Monitoring Officer (FPSMO).

2. 2 The FPSMO shall conduct regular forest inspection activities in his/her area of jurisdiction and coordinate with the forest tenure holder, private plantation owner, protected area supervisor, or indigenous people (IP) group, and local communities.

2. 3 Forest Pest Surveillance and Monitoring shall be included under the Forest Protection activities of the concerned CENROs and reporting shall be regular with or without infestation. When there is no forest pest incidence

monitored, the FPSMO will just note "No Observed Forest Pest Incidence" in his/her regular area patrol report.

- 2.4 A unified database system in every CENRO shall be undertaken to document the information gathered from the field assessed as part of the data case development.
- 2.5 In cases of actual infestation, the FPSMO shall conduct an initial evaluation of the nature and extent of forest pest infestation. He/She shall fill up the DENR *Forest Pest Surveillance Field Form* in Appendix 1a and refer to the guide on terms in Appendix 1b and prepare and submit a memorandum letter to the CENRO within two (2) working days after reporting back to the office, containing a brief narrative report of the infestation event.
- 2.6 The CENRO shall forward the report including his/her own recommendation to the Provincial Environment and Natural Resources Officer (PENRO). The focal person of the PENRO shall consolidate the data and submit to the Regional Executive Director (RED).
- 2.7 The RED, through channels, shall alert the Director of the Ecosystems Research and Development Bureau (ERDB) and the Forest Management Bureau (FMB), and in case the infestation covers, or there is a threat to protected areas, the Protected Areas and Wildlife Bureau (PAWB), who shall recommend to the Supervising Undersecretary the creation of an hoc Forest Pest Assessment Team to verify, assist and recommend to the RED the appropriate control measures.
- 2.8 Upon the recommendation of the Ad Hoc Forest Pest Assessment Team, subject to the usual government regulations and the approval of higher authorities, the RED may engage in a contract with private entities for the control of forest pests in his area of jurisdiction.
- 2.9 The Forest Pest Assessment Team shall inform the RED of the most appropriate time to re-assess the infestation after the forest pest control activities and shall conduct re-evaluation of the area as the success or failure of the control measures, the team may recommend to the RED the necessary further course of action to totally eliminate the pest and prevent similar incidence.
- 2.10 When infestations occur in forests occupied by IPs, close coordination shall be held by the CENRO with their leaders as to what specific courses of action shall be undertaken and shall be covered by an appropriate Memorandum of Agreement (MOA) between DENR and IP leader.

### **Section 3. Other Responsibilities of the Concerned Bureaus.**

- 3.1 ERDB, FMB, and PAWB, in coordination with the other DENR Offices and stakeholders, shall continue to advise ways and means is forest pest surveillance, monitoring, detection, prevention, control, and reporting.
- 3.2 The ERDB shall take the lead in research, data case development and the conduct of capacity building and IEC activity on the biology of forest pests, infestation, prevention and control for DENR Central and field personnel, selected stakeholders, including members of indigenous communities.
- 3.3 The FMB shall lead monitoring and evaluation of forest pest surveillance and monitoring activities and the conduct of capacity building and IEC activities on silvicultural strategies towards the prevention and control of forest pests.
- 3.4 The PAWB shall lead in the conduct of capacity building and IEC activities in the forest pest prevention and control as a strategy in protected area management.
- 3.5 In the conduct of capacity building, the Bureaus may invite resource persons in and out of the DENR who have expertise in Forest Entomology, Forest Pathology, Integrated Pest Management, and related fields. Resource persons from outside DENR and entitled to honoraria subject to the usual accounting and auditing rules and regulations.

**Section 6. Funding.** The funds for the institutionalization of the forest pest surveillance, monitoring, training, and capacity building, and other associated activities shall be charged to the regular appropriations specifically programmed or allotted to the forest protection funds of the DENR Central Office.

**Section 7. Repealing Clause.** All orders and issuances inconsistent herewith are hereby amended and modified accordingly.

**Section 8. Effectively.** This order shall take effect immediately and shall remain in force unless repealed/revoked in handwriting

## DENR FOREST PESTS SURVEILLANCE FIELD FORM

<b>SURVEILLANCE OFFICER</b> NAME _____ OFFICE _____ DATE _____ VALIDATED BY: _____		REGION _____ PROVINCE _____ MUNICIPALITY _____ BARANGAY _____ SITIO _____ LOGGING AREA, if applicable: _____ COMPARTMENT, if applicable: _____ GPS READING _____		AREA AFFECTED _____ AREA INFESTED _____  <b>DISTRIBUTION</b> <input type="checkbox"/> SINGLE TREE <input type="checkbox"/> SCATTERED TREES <input type="checkbox"/> PATCHES <input type="checkbox"/> WIDESPREAD  <b>TOPOGRAPHY</b> <input type="checkbox"/> RIDGES <input type="checkbox"/> SLOPES <input type="checkbox"/> FLATS <input type="checkbox"/> DIRECTIONAL  <b>SEVERITY</b> <input type="checkbox"/> MINOR (1-10%) <input type="checkbox"/> MODERATE (11-20%) <input type="checkbox"/> SEVERE (21-100%)  INCIDENCE _____ %  <b>METHOD</b> <input type="checkbox"/> ESTIMATED <input type="checkbox"/> COUNTED	
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## APPENDIX 1b

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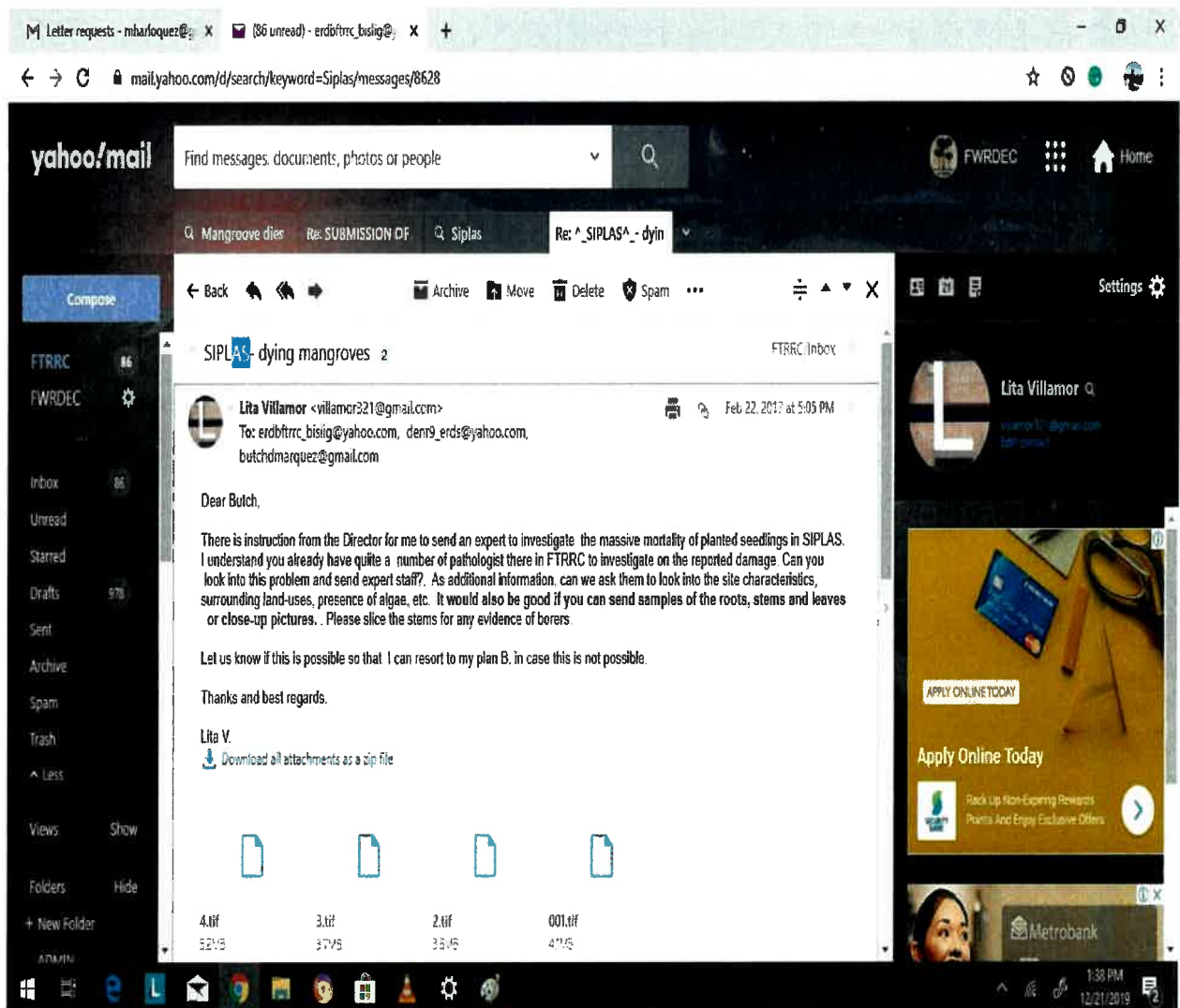
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<b>Mycelium</b>	A mass of hyphae which forms the vegetative filamentous body of a fungus.
<b>Nematodes</b>	A round worm having tubular body with a mouth and well-developed alimentary canal. The nematodes that cause plant disease pierce the cells of a plant with a stylet and suck up the juices.
<b>Parasitic plants</b>	Plants that vary in degree of dependence on other plants but all of them produce chlorophyll and are capable of manufacturing food from carbon dioxide and water although dependent on the host plant for certain minerals and organic substances.
<b>Passive decay</b>	Inactive state of rotting without the causal agent.
<b>Resinosis</b>	Resin exudates coming out from the injured/infested portion of the plants/trees.
<b>Rolling</b>	Refers to coiling round and round by itself.
<b>Rosetting</b>	Internodes of shoots or branches fail to elongate normally, making the leaves crowded into clusters.
<b>Sap sucking</b>	Damage caused by sap feeding insects having sucking mouth parts that allow them to draw liquid from the host plant.
<b>Scab</b>	Abnormal thickening of the outer layer of tissues resulting from one local irritation.



# ANNEX 2. Reports

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- 2a. Directive from ERDB re: Dying Mangroves of SIPLAS
- 2b. Report on Pest and Disease Infestation on the Mangrove Plantations at Siargao Islands Protected Landscape and Seascape (Siplas)
- 2c. Request for Treatment for Bokbok
- 2d. Management Strategies of Powderpost Beetles infesting Brazilian Fire Tree
- 2e. Request for field visitation in Falcata plantations at Agusan del Sur
- 2f. Assessment Report of Falcata Plantations Affected by Canker Disease in Agusan Del Sur
- 2g. Request for In-Depth Examination on Pine Trees
- 2h. Examination on the Causes of Death of Benguet Pine (Pinus Kesiya) Saplings and Treatments to Avoid Possible Dissemination of the Disease
- 2j. Report on Gall rust disease in Falcata plantation



**Annex 2b. Report on Pest and Disease Infestation on the Mangrove Plantations at Siargao Islands Protected Landscape and Seascape (Siplas)**





Department of Environment and Natural Resources  
**ECOSYSTEMS RESEARCH AND DEVELOPMENT BUREAU**  
**FOREST AND TIMBER RESOURCES RESEARCH CENTER**  
Maharlika, Bislig City, CARAGA



**FOR:** **DR. HENRY A. ADORNADO**  
Director, ERDB  
College, Laguna

**THRU:** **MR. CONRADO B. MARQUEZ**  
Head, FTRRC  
Bislig City, CARAGA

**FROM :** **LYDIA E. TIONGCO**, Science Research Analyst/Team Leader  
**MHAR O. LOQUEZ**, Forest Technician I/Plant Pathologist  
**ESPIE M. PRACA**, SRT I/Entomologist

**DATE:** **06 March 2017**

**SUBJECT:** **PEST AND DISEASE INFESTATION ON THE MANGROVE PLANTATIONS AT SIARGAO ISLANDS PROTECTED LANDSCAPE AND SEASCAPE (SIPLAS)**

In response to the letter request of Forester Eufancio D. Subayno, Park Superintendent of SIPLAS dated 17 January 2017, which was received last February 22, 2017 re: above-subject problem, please be informed that the undersigned have conducted an assessment and sampling on the affected areas last February 28-March 3, 2017.

Four mangrove plantation sites established through the Mangrove and Beach Forest Development Project, and the Philippine Climate Change Commission Project (PhilCCap) were evaluated. The plantations are located at Barangays Bagakay, Monserat and Sta Fe of the municipality of Dapa and Sitio Pangi, Brgy. Antipolo of the municipality of Del Carmen, Province of Surigao del Norte. Pest and disease incidence and severity was assessed based on signs and symptoms manifested by the mangrove plants. Generally, the mangrove plantation shows yellowing and wilting of leaves

Herewith are the preliminary findings of the assessment made at the aforementioned sites. This is hereby submitted for your information, record and endorsement to SIPLAS. Hope you'll find this in order.

Thank you very much.

  
**LYDIA E. TIONGCO**

  
**ESPIE M. PRACA**

  
**MHAR O. LOQUEZ**



Republic of the Philippines  
Department of Environment and Natural Resources, Region 10  
Macabalan, Cagayan de Oro City  
E-mail add: denr10@gmail.com Telephone No.: (088) 856-9066 Fax No.: 856-8200

67 DEC 2016  
86

**TO :** The Center Head  
Forest and Timber Resources Research Center (FTRRC)  
Sumpung, Malaybalay City

**FROM :** The Regional Director  
DENR-10, Cagayan de Oro City

**SUBJECT :** REQUEST FOR A RESEARCH ON THE TREATMENT OF  
BOKBOK INFESTATION IN THE BRAZILLIAN FIRE TREE  
TIMBERS

**DATE :** December 6, 2016

This pertains to the feedback from wood processors that Brazillian Fire Tree timbers reaching at their plants for processing are already attacked by Bokbok. The occurrence of Bokbok lowers the quality of lumbers and eventually its by-products.

In line with this, we are urgently requesting FTRRC to recommend on the treatments of Bokbok occurrence in Brazillian Fire Tree timbers inasmuch as NGP in Bukidnon planted the said tree species.

For information and consideration.

RUTH M. TAWANTAWAN, CESO III

Received:  
  
12/12/16

DENR-10 Macabalan Cagayan de Oro City

## Annex 2d. Management Strategies of Powder post Beetles infesting Brazilian Fire Tree



Republic of the Philippines  
Department of Environment and Natural Resources  
**ECOSYSTEMS RESEARCH AND DEVELOPMENT BUREAU**  
**Forest and Timber Resources Research Center**

**MANAGEMENT STRATEGIES OF POWDERPOST BEETLES INFESTING  
BRAZILIAN FIRE TREE**

In response to your letter dated 06 December 2016, re: treatments to control *bakbok* or powderpost beetles and wood boring beetles infesting Brazilian fire tree.

There are several families of powderpost beetles (such as *Lyctidae*, *Bostrichidae*, *Anobiidae*, and *Cerambycidae*) and wood boring beetles (such as *Scolytidae*) that attack timber. Thus, proper identification is a requisite for proper control measures application because this beetles has different characteristics therefore they also differ on ways of control. Nevertheless, this type of pest is hard to control thus no immediate control against was discovered. Besides, the larva which is the most destructive stage of this pest could last 1 year or more before they will pupate and turn into adult. Hence, prevention is the best means to control this pest. Consider these points on how to discourage beetle infestation:

- Avoiding scars to trees which later became their entry towards the xylem.
- Avoid pre-mature harvesting. High moisture is favourable for beetle infestation.
- Paint the exposed surface. The adult cannot penetrate or find cracks and crevices in the wood surface in order to deposit their eggs.
- If practical, remove the infested wood in the lumber mill to prevent dispersal of the pest.

In minor to moderate infestations in both plantations and saw mill, the following treatments can be applied:

- Baits. Some families of these beetles are attracted to alcohol based baits such as: *tuba* or *tuba* + *muscovado sugar*. Baits will attract the adults.
- Pheromone traps. Pheromone will attract the male adults therefore mating and reproduction will be reduced.
- *In-situ* application of insecticide through injection on the holes. This method is only applicable on early or low infestation hence this is very laborious. Spraying and brushing of insecticide periodically is also an alternative.

If severe infestation occurs, fumigate using sulfur fluoride or methyl bromide is applicable in close area (saw mill).

For your information and most favorable action.

  
**ESPIEM/PRACA**

Science Research Technician/Entomologist



Republic of the Philippines  
PROVINCE OF AGUSAN DEL SUR  
Gov. D. O. Plaza Government Center Prosperidad

**PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES OFFICE**  
**Local Government Unit**

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February 12, 2018

**MR. CONRADO B. MARQUEZ**  
Head, Forest and Timber Resources Research Center (FTRRC)  
Maharlika, Bislig City



Dear Sir Marquez,

We would like to inform you that our province had supported our small tree farmers in developing Falcata plantations through our USAD Program in pursuance of our Vision to reduce poverty incidence in the province. However, it was noted that some of the Falcata plantation is now affected with unidentified pest infestation which need preferential attention of an experts on Forest Tree Diseases and Its Control.

We believed that your institution is pooled with experts who are competent in the identification and control of causal pathogen of any forest pest infestation, hence, we would like to request your good office to send your experts to conduct field visitation and actual physical inspection of the Falcata plantation which were affected of the aforesaid pest infestation.

Kindly coordinate with our focal person, **For. Danilo J. Sarong**, Chief Forest Resources Management and Development Division, PENRO-LGU, Governor D.O.Plaza Government Center, Prosperidad, Agusan Del Sur.

Looking forward for your positive response on the matter.

  
**MR. RICARDO A. CALDEO**  
Acting PENR Officer-LGU



Department of Environment and Natural Resources  
**ECOSYSTEMS RESEARCH AND DEVELOPMENT BUREAU**  
**FOREST AND TIMBER RESOURCES RESEARCH CENTER**  
Maharlika, Bislig City, CARAGA



**MEMORANDUM**

**FOR** : **RICARDO A. CALDEO**  
Acting PENR Officer-LGU  
PENRO –LGU, Agusan del Sur

**THRU** : **CONRADO B. MARQUEZ**  
Center Head  
FTRRC, Bislig City

**FROM** : **LYDIA E. TIONGCO**, Project Leader, Dev't of IPM for ITPs  
**MHAR O. LOQUEZ**, Project Staff/Plant Pathologist  
**ESPIE M. PRACA**, Project Staff /Entomologist

**DATE** : **05 March 2018**

**SUBJECT** : **ASSESSMENT REPORT OF FALCATA PLANTATIONS  
AFFECTED BY CANKER DISEASE IN AGUSAN DEL  
SUR**

In response to the letter request of the Provincial Environment and Natural Resources Office- Local Government Unit (PENRO –LGU) Agusan del Sur through Acting PENR Officer Mr. Ricardo A. Caldeo dated February 12, 2018, re: to conduct field visitation and actual physical inspection of the Falcata (*Falcateria moluccana* (Miq) Barneby) plantation which are affected with undetermined pest. Please be informed the undersigned together with For. Danilo J. Sarong, Chief Forest Resource Management and his staff conducted an ocular inspection and assessment of the affected sites on February 13-16, 2018.

Herewith are the findings of the assessment made and recommendation of the disease infection. This is hereby submitted for your information, record and endorsement to PENRO-LGU of Agusan del Sur. Hope you'll find this in order.

  
**LYDIA E. TIONGCO**

  
**ESPIE M. PRACA**

  
**MHAR O. LOQUEZ**





## **ASSESSMENT REPORT OF FALCATA PLANTATIONS AFFECTED BY CANKER DISEASE IN AGUSAN DEL SUR**

There were three Falcata plantation site visited during the assessment. The first plantation site is situated in Poblacion, Prosperidad, Agusan del Sur that is estimated to be at 3-4 years old with irregular spacing, second is in Sta Irene, Prosperidad, Agusan del Sur that is 2 years old with 3x4 spacing and in Lapaz, Agusan del Sur that is 10 months old with 3x3 spacing.

During the inspection, 10 random strips were selected to identify the disease and extent of infection. A total 20 plants per strip were geo-tagged and assessed in terms of total height, diameter at breast height (DBH) and disease incidence. Infected part of trunk and branches were cross-examined to inspect for wood decay. Samples were collected and brought to FTRRC Laboratory in Bislig City, Surigao del Sur for analysis and identification of causal organism.

Field observation revealed that canker disease which is caused by a fungal organism generally affected all sites visited. Based on the mycelial structure and characteristics, the causal organism was *Corticium salmonicolor* Berk and Br. commonly known as the **Pink Canker Disease** which belongs to Phylum Basidiomycota. Percent incidence revealed that site 1, site 2 and site 3 has 90, 50 and 44 respectively. Moreover, most of the infection observed are in the trunk resulting to yellowing of leaves and subsequent dying of plant parts above the canker-infected portion due to the blockage of water and food transport system. Some of the upper portion of the stand fall off since the infected area were dried up resulting to breakage. Thus, the concentration of water and nutrients in the lower portion of the infected area induced the growth and development of epicormic shoots. Furthermore, two fungal organisms namely, *C. salmonicolor* and *Lasiodiplodia theobromae* (Pat.) Griffon & Maubl) were found on the infected sample collected during the microscopic examination. *L. theobromae* is a fungal organism belongs to Phylum Ascomycota which is also reported to cause canker disease in Falcata. On the other hand, scale insect and termites were also observed but in tolerable level thus no control measure is necessary.

Based on the above findings, the following are recommended:

1. Sanitation cutting and burning on severely infected stand should be done to avoid spreading of the disease. Cutting and burning of the infected plant part is also recommended. Wounds should be treated with fungicide or coal tar to prevent possible entry of disease.
  2. S
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Department of Environment and Natural Resources  
**ECOSYSTEMS RESEARCH AND DEVELOPMENT BUREAU**  
**FOREST AND TIMBER RESOURCES RESEARCH CENTER**  
Maharlika, Bislig City, CARAGA



3. select quality seeds and planting materials to increase tolerance and resistance of the plant.
4. Fungicide Mancozeb/Carbendazim/Copper base Fungicide) should be applied to control and manage the disease infection. The application of fungicide is strictly based on the prescribe amount and interval found on the label to avoid disease resistance.
5. Observe proper silvicultural practices in the area.
6. Handpicking of the insect pest observed should be done to minimize its population.
7. Constant monitoring and assessment should be done in the area.

Prepared and Submitted by:

  
**LYDIA E. NONGCO**

Project Leader, Development of  
Integrated Pest Management (IPM)  
for ITPs in Response to Climate  
change/ Soil Scientist

  
**MHAR O. LOQUEZ**

Project Staff, Plant Pathologist

  
**ESPIE PRACA**

Project Staff/ Entomologist

## **Annex 2g. Request for In-Depth Examination on Pine Trees**

Republic of the Philippines  
**PROVINCE OF BUKIDNON**  
Provincial Capitol 8700

**OFFICE OF THE PROVINCIAL GOVERNOR**  
Bukidnon Environment & Natural Resources Office

December 26, 2017

**MS. LYDIA E. TIONGCO**  
Station Supervisor  
FTRRC-ERDB Office  
Sumpung, Malaybalay City

Dear Ms. Tiongeo,

This pertains to the request dated December 14, 2017 from Ma. Joe-an P. Bayona, Officer-In-Charge, Provincial Tourism Office requesting ocular inspection of dead Benguet Pine samplings planted near in the Kaamulan Folk Art Theater, Malaybalay City.

Please be informed that based on BENRO inspections there were 34 hills of Benguet Pine sampling found standing dead located sporadically in the kaamulan park.

Relative to this, may I request technical personnel from your office to conduct in-depth examination on the causes of death and possible recommendations on the treatment to avoid possible spreading of disease.

Your usual cooperation is highly appreciated.

Very truly yours,

  
**CECILLE M. EGNAR**  
Provincial Environment & Natural Resources Officer

## **Annex 2h. Examination on the Causes of Death of Benguet Pine (Pinus Kesiya) Saplings and Treatments to Avoid Possible Dissemination of the Disease**





Department of Environment and Natural Resources  
**ECOSYSTEMS RESEARCH AND DEVELOPMENT BUREAU**  
**FOREST AND TIMBER RESOURCES RESEARCH CENTER**  
Maharlika, Bislig City, Surigao del Sur, CARAGA  
[erdbftrrc\\_bislig@yahoo.com](mailto:erdbftrrc_bislig@yahoo.com) ☎ 09177030253



January 22, 2018

**CONRADO B. MARQUEZ**  
**Head, FTRRC**  
**Maharlika, Bislig City, CARAGA**

Sir:

Greetings!

This refers to the request of the Bukidnon Environment and Natural Resources Office (BENRO) through their Chief Mrs. Cecille M. Egnar dated December 26, 2017, re: examination on the causes of death of Benguet Pine (*Pinus kesiya*) saplings and treatments to avoid possible dissemination of the disease. Please be informed that the undersigned together with the BENRO staffs have conducted ocular inspection and assessment of the reported diseased-Benguet pine plantation in Malaybalay City last January 3-5, 2018.

The plantation is situated in front of the Kaamulan Folk Arts Theatre within the Bukidnon Provincial Tree Park, Malaybalay City. Benguet pine saplings were under-planted in an existing decades-old Benguet Pine plantation. The tree park serves as an ecotourism area/tourist attraction with pine trees-filled vibe somewhat like Baguio. It is the best place for physical activities and relaxation of individuals, lovers, and families. Recently, with the trend on pictorials and photoshoots, the landscape of emerald-green park is the preferred venue of photographer and photography enthusiast. Unfortunately, the park's scenic beauty is devastated by the vast number of diseased saplings showing yellowing and wilting symptoms. This caught the attention of BENRO and Provincial Tourism Office. BENRO reported that 34 hills of Benguet Pine saplings died due to the undetermined pest.

During the inspection, three blocks (20 plants per block) were randomly established to determine the extent of disease infection. A total of sixty saplings (3 blocks at 20 plants per block) were geo-tagged and assessed in terms of total height, diameter at breast height (DBH), disease incidence and severity. Considering the soil factors (nutrient deficiency), soil samples was collected in the area which then subjected to routine analyses at CMU-Soil-Plant Analysis Laboratory (SPAL), Central Mindanao University, Musuan, Bukidnon. Foliage examination, uprooting and cross-section of the actively infected and wilted pine trees were also done to assess the presence of insect pest or infection on the

wood. Foliage, bark of the basal portion and primary root samples were collected and brought to the FTRRC laboratory in Bislig City, Surigao del Sur for identification and analysis.

Field observation revealed that needle blight followed by wilting are the general symptoms manifested by the infected saplings. Two symptoms of needle spots that eventually turn into blight were observed in the area. The first one is the black color bands in the needle with mycelial growth on the surface resulting to necrosis. Based on microscopic examination, conidia and septated mycelial structure of a fungus were observed on the symptom and the suspected causal pathogen was *Pseudocercospora* sp. or *Cercospora pini*, which belongs to Phylum Ascomycota. The other one is the yellow chlorosis bands on the needle, but no mycelial growth found. On the average, 3-year-old pine saplings stand 4.99 m tall with a DBH of 9.33 cm. Meanwhile, disease incidence and severity observed was 30 and 19 percent, respectively. Based on physical appearance, no damage observed on wood property of the stem yet the cambium on the main root and basal portion are compressed and started rotting, which secretes white resin that suppress nutrient and water transport resulting to death of infected trees. However, it was also noted that patches of Benguet pine saplings especially those planted within muddy soil are wilting to dying. Moreover, mowing was conducted which possibly caused disturbances on the basal portion of pines and might be one of the factor that caused wilting on some stands. Irregular spacing of pine saplings was generally observed which could affect the growth and development of pines and could encourage pest and disease susceptibility.

Based on the above findings, the following recommendations are given:

1. Select quality Benguet pine seedlings for replanting.
2. Avoid monoculture in establishing plantation.
3. Observe regular spacing between pines to promote balanced air flow.
4. Removed and burn all the wilted pines and dead branch to avoid disease spread.
5. Pruning must be done on the severely infected basal portion of pines to avoid disease spreading.
6. The pruned portion of the pine should be treated with fungicide (Mancozeb™) and coat with coal tar to close the wound and to avoid entry of any pathogenic diseases. Carefully read the fungicides label for cautions and proper application. To avoid pesticide resistance, cycle use of fungicides with different active ingredient every month is recommended.
7. Weeding/brushing must be cautiously done to avoid damage to the basal portion of the tree which can be an entry point of a root rot causing diseases.
8. Constant monitoring and assessment should be done in the area to detect disease infection, insect damage or any factors that could affect the growth of pines.

9. Soil analysis must be done to have a proper fertilization or nutrient management.

For your information, record and appropriate action.

Very truly yours,



**LYDIA TIONGCO**

Project Leader, Development of  
Integrated Pest Management (IPM) for  
ITPs in Response to Climate  
Change/Soil Scientist



**MHAR O. LOQUEZ**

Project Staff, Plant Pathologist



**ESPIE M. PRACA**

Project Staff, Entomologist

## Annex 2j. Report on Gall rust disease in Falcata plantation



Republic of the Philippines  
Department of Environment and Natural Resources  
**ECOSYSTEMS RESEARCH AND DEVELOPMENT BUREAU**  
Forest and Timber Resources Research Center

### REPORT ON GALL RUST DISEASE IN NGP 2012 ESTABLISHED FALCATA PLANTATION

In response to your letter dated 16 March 2016, re: infestation of Gall rust disease in the NGP 2012 established Falcata plantation located at Sitio Tintinaan, Brgy Can-Ayan, Malaybalay, City, please be informed that the undersigned have conducted an assessment of the pest and disease in the area last April 5, 2016.

Gall rust disease was generally observed at its advance stage with approximately 80-90% disease incidence while severity ranged from 30-40%. The area was located at approximately 844-866 meters above sea level which favors the growth and development of Gall rust. Besides, the weedy understory vegetation of the plantation serves as inoculum of the fungal disease.

Advance stage is the most damaging stage of the disease where occurrence of fungi eating insects are usually observed which may be the cause of death of some Falcata trees in the area. Gall rust disease caused by the fungi (*Uromycladium tepperianum*) is difficult to control once it has fully developed since it is air-borne. Rusts (fungal spores) will remain in the area even when the hosts are



eradicated. At present, there is no proven totally effective control strategy against the disease other than thinning/pruning and burning of infected parts of the tree at early stage of Gall rust. Thus, monitoring is very important in the control of the disease. Hence, planting of resistant variety such as *White Solomon variety* is still the most effective strategy in prevention of disease infestation. In addition, planting of indigenous tree species would be best to prevent infestation of other pests and diseases of Falcata. Sanitation/cleaning of the understory vegetation is also recommended and must be done in the area as soon as possible. It will suppress the



widespread of the diseases through the elimination of weeds which may serve as inoculum of the fungal disease and it will lessen the dispersal of the disease in the area. This recommendation is true to all NGP-falcata plantations in Bukidnon.

For your information and most favorable action.



**LYDIA E. TIONGCO**

Project Leader, Development of Integrated Pest Management  
for Forest Plantations in Response to Climate Change



**ESPIE M. PRACA**

Project Staff, Development of Integrated Pest Management  
for Forest Plantations in Response to Climate Change

# ANNEX 3. Capacity Building

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3A. REQUEST FOR TRAINING ON PEST AND DISEASE MANAGEMENT FOR FALCATA FARMERS AT POBLACION, VERUELA, AGUSAN DEL SUR

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3C. REQUEST FOR RESOURCE SPEAKER ON PEST AND DISEASE CONTROL AND MANAGEMENT

3D. TRAINING REPORT ON NURSERY AND PLANTATION ESTABLISHMENT AND INTEGRATED PEST & DISEASE MANAGEMENT USAD FALCATA FARMER ENROLLEES'

3E. REQUEST FOR RESOURCE SPEAKER ON PEST MANAGEMENT TRAINING

3F. TRAINING REPORT ON DISEASE MANAGEMENT OF GALL RUST IN FALCATA

3G. Technology Needs Assessment CY 2018 (Table 1) and CY 2019 (Table 2)



## ANNEX 3A. REQUEST FOR TRAINING ON PEST AND DISEASE MANAGEMENT FOR FALCATA FARMERS AT POBLACION, VERUELA, AGUSAN DEL SUR



Republic of the Philippines  
PROVINCE OF AGUSAN DEL SUR  
Gov. D. O. Plaza Government Center Prosperidad

### OFFICE OF THE PROVINCIAL GOVERNOR

May 21, 2019

**MR. CONRADO B. MARQUEZ**

Head, Forest and Timber Resources Research Center (FTRRC)  
Maharlika, Bislig City

Dear Sir Marquez,

It is our pleasure to inform you that the Provincial Government of Agusan Del Sur, on its 5<sup>th</sup> year of its Upland Sustainable Agri-forestry Development (USAD) Program has already developed Two Thousand Four Hundred Ninety Nine (2,499.0) has. of Small Scale Falcata Tree Farm for Timber Production.

Indeed, we are glad that your institution had contributed a lot by providing us with a good quality Falcata seeds. We firmly believed that high plantation yield depends on the quality of planting materials coupled with a good plantation management practices. However, despite of the good performance of the newly established plantation, yet, we can't assure of its future, the fact that our tree farmers don't have enough knowledge in eradicating pest and diseases infestations that may occur in-between years from planting up to harvesting period.

In the height of our project implementation, we observed that some of the newly planted and even those that were already Two (2) years old and older were affected with pest infestation of which our personnel could no longer attained considering the distance of some plantation from our station. Hence, we have to had our enrollees be trained and capacitated in the basic pest and diseases control management.

In this regard, we would like to request from your good office to provide us Resource Persons to give lectures on Insect Pest Infestations and Fungal Pest Infestation respectively during our scheduled training on Pest Infestation Control and Management on May 28-30, 2019 at the Municipal Training Center, Poblacion, Veruela, Agusan Del Sur.

Looking forward for your untiring support with our endeavor in uplifting the economic condition of our upland communities through Falcata Tree Farming.

Very Sincerely,

  
**MA. ANGELITA SALOME D. ACOPIADO**  
Acting PSDH, PENRO-LGU  
Agusan Del Sur



## **ANNEX 3B. TRAINING REPORT ON PEST AND DISEASE MANAGEMENT FOR FALCATA FARMERS AT POBLACION, VERUELA, AGUSAN DEL SUR**

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Department of Environment and Natural Resources  
**ECOSYSTEMS RESEARCH AND DEVELOPMENT BUREAU**  
**FOREST AND WETLAND RESEARCH, DEVELOPMENT AND**  
**EXTENSION CENTER**  
Maharlika, Bislig City, Surigao del Sur, CARAGA  
[erdbfmr\\_bislig@yahoo.com](mailto:erdbfmr_bislig@yahoo.com) ☎ 09177030253

### **TRAINING REPORT ON PEST AND DISEASE MANAGEMENT FOR FALCATA FARMERS AT POBLACION, VERUELA, AGUSAN DEL SUR**

In response to letter request sent by Ma. Angelita Salome D. Acapadio, Acting PGDH, PENRO-LGU of Agusan del Sur, 2 FWRDEC personnel served as resource speaker during the training on Insect Pest and Disease Management at Poblacion, Veruela, Agusan del Sur last May 28-30, 2019. Provincial Government of Agusan del Sur is on 5<sup>th</sup> year of its implementation of Upland Sustainable Agri-forestry Development (USAD) Program. One of the objectives of the program is to *uplift the economic condition of the upland communities through Falcata Farming*. However, insect pest infestation and disease infection was observed on the existing Falcata plantation which is considered as a hurdle in the attainment of this objective. Hence, knowledge of basic pest identification and management is crucial for Falcata tree farmers.

The training is composed of lecture series and hands-on training on pest and disease management. The training was participated by tree farmers that are enrollees of USAD program and Extension Officers (EOs) of PENRO-LGU. Disease Management in Falcata Plantation was tackled by Mr. Mhar O. Loquez (Plant Pathologist) while Pest Management in Falcata Plantation and Nursery was tackled by Ms. Espie M. Praca (Entomologist). The hands-on training was conducted in Falcata plantation infected with Pink canker disease. Mr. Loquez demonstrated the proper handling/application of chemical and other treatments to control the disease. It was followed by hands-on application of selected tree-farmers. On the other hand, Ms. Praca demonstrated how to identify the signs of insect infestation and disease infection in Falcata to minimize incorrect pest diagnosis and avoid improper use of pesticides. The training course is short but enough to address the need of farmers for knowledge on pest management.

  
**ESPIE M. PRACA**  
Science Research Specialist I

  
**MHAR O. LOQUEZ**  
Science Research Specialist I

## ANNEX 3C. REQUEST FOR RESOURCE SPEAKER ON PEST AND DISEASE CONTROL AND MANAGEMENT



Republic of the Philippines  
PROVINCE OF AGUSAN DEL SUR  
Gov. D. O. Plaza Government Center Prosperidad

### OFFICE OF THE PROVINCIAL GOVERNOR

April 3, 2018

**HENRY A. ADORNADO, PhD**  
Director  
Ecosystem Research and Development Bureau (ERDB)  
College, Laguna



Dear Director Adornado,

It is our pleasure to inform you that the Provincial Government of Agusan Del Sur, on its 4<sup>th</sup> year of its Upland Sustainable Agri-forestry Development (USAD) Program has already developed One Thousand Six Hundred Seventy Six (1,676.0) has. of Small Scale Falcata Tree Farm for Timber Production.

Indeed, we are glad that the Mindanao Tree Seed Center (MTSC) of the Forest and Timber Resources Research Center (FTRRC) in Maharlika, Bislig City of your Department had continuously supported said project by providing us with quality seeds of Falcata. We firmly believed that their continuing support would mean a lot for the success of our program, hence, help the provincial government in addressing poverty incidence comes the harvesting period. Yet, we can't assure the fact that our tree farmers don't have enough knowledge in eradicating pest infestation that may occur in-between years from planting up to harvesting period.

In the light of our project implementation, we need to assess the response of our project enrollees relative to the ups and downs of their individual Falcata Tree Farm, hence, an USAD Falcata forum is scheduled this coming May 4, 2018 to be held at the Covered Court, Gov. D.O. Plaza Government Center, this province.

To make the Forum successful, we are requesting your good office to send your Technical Personnel to give insight relative to the proper Nursery and Plantation Establishment Management and Integrated Pest and Disease Control Management.

Looking forward for your untiring support with our endeavor in uplifting the economic condition of our upland communities through Falcata Tree Farming.

For the Governor

**FOR. RONULFO R. PALER**  
Acting Provincial Administrator

## ANNEX 3D. TRAINING REPORT ON NURSERY AND PLANTATION ESTABLISHMENT AND INTEGRATED PEST & DISEASE MANAGEMENT USAD FALCATA FARMER ENROLLEES'



Department of Environment and Natural Resources  
ECOSYSTEMS RESEARCH AND DEVELOPMENT BUREAU  
FOREST AND TIMBER RESOURCES RESEARCH CENTER  
Maharlika, Bislig City, CARAGA



### REPORT ON NURSERY AND PLANTATION ESTABLISHMENT AND INTEGRATED PEST & DISEASE MANAGEMENT USAD FALCATA FARMER ENROLLEES'

In response to the letter sent by For. Ronulfo R. Palar, Acting Provincial Administrator of PLGU-Agusan del Sur regarding the request for technical personnel to give insights relative to proper Nursery and Plantation Establishment and Integrated Pest and Disease Management, the FTRRC personnel served as resource speaker during the *USAD Falcata Farmer Enrollees' Forum* with the theme "*Tree Farming: Viable Alternative In Sustaining Economy for the Upland Communities*" last May 4, 2018. The forum was held at Datu Lipus Makapandong Cultural Center, Gov. Democrito O. Plaza Government Center, Prosperidad, Agusan del Sur which was attend by nearly 400 farmers.

The forum proper started by the lecture regarding "Governing Issuances and Policies in Tree Production Establishment, Harvesting and Transport" tackled by For. Modesto U. Lagumbay, Chief Law Enforcement Division, DENR-13. It was then followed by a series of lecture from FTRRC personnel. Topics discussed were the following: MTSC History and Operationalization (For. Joan S. Gilbero); Nursery and Plantation Establishment and Management (For. Rustum A. Aguilos); and Common Nursery and Plantation Pest and Disease Management (Mhar O. Loquez and Espie M. Praca). Open forum followed deliberately after each topic was discussed, to answer the queries of farmers. Generally, the farmers' concern was on the growing threat of diseases infection in falcata plantation specially canker disease which is prevalent in the province.

  
**JOAN S. GILBERO**  
Supervising Science Research Specialist

  
**RUSTUM A. AGUILOS**  
Senior Science Research Specialist

  
**ESPIE M. PRACA**  
Science Research Specialist I

  
**MHAR O. LOQUEZ**  
Science Research Specialist I



## ANNEX 3E. REQUEST FOR RESOURCE SPEAKER ON PEST MANAGEMENT TRAINING



**University of Southeastern Philippines**  
*College of Agriculture and Related Sciences*

September 12, 2019

**CONRADO B. MARQUEZ**  
Head, FWRDEC  
Maharlika, Bialig SDS

ATTENTION: **ESPIE M. PRACA**  
Entomologist

**MHAR O. LOQUEZ**  
Pathologist

Sir:

The Falcata Project team of the University of Southeastern Philippines, Tagum City with the research project entitled "The Use of Geospatial Analysis of Gall Rust (*Uromycladium falcatarium*) in Falcata (*Falcateria moluccana*) to Determine Disease Occurrence in Compostela Valley, Philippines" would like to request for a pest management training of the falcata trees. Specifically, the training shall discuss from the selecting of seeds, proper planting, to maintaining its healthy growth, and pest management.

This training is necessary to fully equip the project team regarding to our research, in which we aimed to help the farmers on how to carefully select, reproduce falcata trees and control measures in gall-rust occurrence.

Furthermore, if this request warrants your approval, we prefer to set this training on October 10, 2019. There will be an estimate of 30 participants consisting of People Organization's Members and DENR personnel. For further details, please contact the Research Assistant, Elaica P. Gador on this number 09481074678 or email us on [cars\\_forestryproject@usep.edu.ph](mailto:cars_forestryproject@usep.edu.ph).

Hoping and looking forward to your positive consideration and approval on this matter.

Very truly yours,

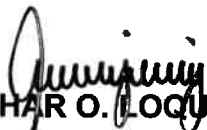
  
**NYMPHA E. BRANZUELA, Ph.D**  
Project Leader

### **ANNEX 3F. TRAINING REPORT ON DISEASE MANAGEMENT OF GALL RUST IN FALCATA**

In response to the request of Dr. Nympha E. Branzuela of the University of Southeastern Philippines (USEP) Tagum City to conduct pest management training in Falacta Trees under the project entitled "The Use of Geospatial Analysis of Gall Rust (*Uromycladium falcatarium*) in Falcata (*Falcataria moluccana*) to Determine Disease Occurrence in Compostella Valley, Philippines. The FWRDEC personnel namely Mr. Mhar O. Loquez and For. Eubie D. Andipa proceeded on the training and serves as the resource person. The training was conducted in Aguakan Inland Resort, Maragusan Compostella Valley last October 8 & 9, 2019. The two-day training was participated by different People Organization's members and DENR personnel to fully equip the project team and help the farmers on how to carefully select, reproduce falcata trees and control measures in gall-rust occurrence.

The training includes a series of lectures and field visits to widen the knowledge of the participants on Falcata Management. For the lecture proper, For. Eubie D. Andipa discussed the Nursery Establishment and Management where she presented the different types of nursery, criteria on selecting nursery areas and propagation activities of Falcata. She also discussed the Guide on Falcata Plantation Establishment and Management where she emphasizes the site preparation, care, and maintenance of Falcata. After the discussion on nursery and plantation management, Mr. Mhar O. Loquez discussed Falcata Diseases and Management also the Insect Pest and Management where he emphasized the factors on disease development and survival of insect pests in nursery and plantation. After the series of lectures, a field visit has proceeded where Ms. Eubie explains the proper practices in establishing Falcata plantation areas and Mr. Mhar expounds on insect pests and diseases in the area affecting Falcata production.

The two-day training ended successfully and thrill since the participants are highly interactive in sharing their problems and ideas in Falcata production. According to them, they are very thankful for this training where they learned a lot and enhanced their knowledge in Falcata Production.

  
**MHAR O. LOQUEZ**  
Science Research Specialist I

  
**FOR. EUBIE D. ANDIPA**  
ADA IV



### Annex 3G. Technology Needs Assessment CY 2018 (Table 1) and CY 2019 (Table 2)

The consolidated outputs were presented below highlighting the different issues and concerns regarding forest pest, technology/information needs, responsible agency, and potential agencies which can be tapped as collaborators to address these emerging issue/s within their respective areas/jurisdiction.

Table 1. Summary of ITNA results

Issues and Concern	Information/Technology Needs	Concerned Agencies	Concerned Agencies
<b>ZAMBONGA CITY</b>			
<b><i>On Integrated Pests Management...</i></b>			
Pest and diseases of diff. plant species (i.e. cacao trees) century tree	Training/Seminar Workshop	DENR-ERDB, DA, LGU, and academe	DA – provides training on agriculture aspects, technical assistance. FTRRC- provides training on Insect Pests and Diseases Management
<b>AGUSAN DEL NORTE</b>			
<b><i>on Integrated Pest Management...</i></b>			
Cacao Plantation infested (Leaf Borer)	-Training on Cacao Plantation pest and diseases management	-DAR -DA	-ERDB-FWRDEC- Technical assistance for training -LGU-Funding Source
Pest and diseases on Falcata and other fruit trees	-Training on IPM	-ERDB-FWRDEC	-ERDB-FWRDEC- Resource Persons/Technical Assistance -PLGU-Budget for training
<b>AGUSAN DEL NORTE</b>			
<b><i>on Integrated Pests Management...</i></b>			
Pests and diseases on nursery and plantation	Information on pests and diseases management	DENR, LGU	DENR- to revive pests and diseases surveillance team LGU-to provide funds for the training
Limited knowledge of LGU & farmer co-operators on pests and diseases prevention and control/Silvicultural practices	Training	DENR-FWRDEC, Academe, Research Ins, LGU	DENR-FWRDEC, Academe, Research Ins-technical capacity/support
Prevention and cure of Pest and disease of plantation (Gall Rust, Canker, Pink Disease, Stem Borer, dieback) and seedling production	Chemicals/technology to prevent and cure the pest and Diseases. Alternative species for Falcata	FWRDEC, DENR, Academe	FWRDEC and DENR- Manpower to assist

Table 2. Summary of ITNA results CY 2019

Issues and Concern	Information/Technology Needs	Concerned Agencies	Potential Collaboration/Partnership
<b>OZAMIZ CITY</b>			
Pests and diseases affecting the Falcata planting materials/high mortality of Falcata seedlings (Conception, Jimenez, Lopez Jaena, Tangub)	Trainings on integrated pest management; production of IEC materials; control and management of diseases	DENR/LGU/DA/ERDB-FWRDEC	DENR/ERDB-FWRDEC/DA-technical assistance LGUs/DENR/DA-funding sources
Pests and diseases infestation (rat, gall rust, parasitic vines)	Training on pests and diseases management	ERDB-FWRDEC/DENR/LGU/DA/Academe	FWRDEC-IEC and technical assistance LGU-funding source DENR (CENRO)-coordination DA-technical assistance
Low survival of the planted mangroves (improper site species matching and pest infestation)	IEC; training on the control of barnacles and crabs	ERDB/DENR/LGU	ERDB-IEC materials, training LGU-funding source
<b>DIPLOG CITY</b>			
Pests and diseases in plantation crops in ZDN Diseases: Gall rusts in Falcata in NGP sites (Tuburan, Don Eleno & San Jose in Sergio Osmena and Brgy. Alvenda in Mutia	Capability building on integrated pests management	FWRDEC/DENR/LGU	DENR/FWRDEC-technical assistance LGU-financial
Limited knowledge on forest pest and disease management	IEC on pest and diseases of forest trees and their management (IPM)		

# FOREST PEST REPORTING SYSTEM OF DENR OFFICES IN THE PHILIPPINES

