

**APPLICATION FOR TECHNOLOGY NEEDS ASSESSMENT**

Name of Enterprise: <b>Mindoro State University – Main Campus</b>		
Contact Person: <b>Engr. Christian B. Hernandez</b>	Position in the Enterprise: <b>Instructor I</b>	
Office Address: <b>Alcate, Victoria, Oriental Mindoro</b>	Tel. No. <b>0977-075-9602</b>	Fax No. <b>None</b>
	E-mail Address: <b>cbhernandez1@up.edu.ph</b>	
Factory Address: <b>N/A</b>	Tel. No. <b>None</b>	Fax No. <b>None</b>
	E-mail Address: <b>None</b>	
Website: <b>None</b>		

**GENERAL AGREEMENTS:**

1. The applicant shall, at the earliest opportunity, make available to the DOST Regional Office No. IV-B (DOST-MIMAROPA) all information (manuals, procedures, etc.) required to establish the technology status of the selected core business functions and management systems;
2. If DOST-MIMAROPA is not satisfied that all the requirements for business registration are complied with, it shall inform the applicant of the observed deficiencies before starting the assessment;
3. When the required inputs to the assessment are already supplied by the applicant, including Attachment A, the DOST-MIMAROPA will assess the firm through the core business functions and management systems, whichever is applicable, to identify technology needs and verify compliance to standards vis-à-vis existing practices;
4. When the DOST-MIMAROPA has completed the technology assessment, a report will be prepared on the results of the assessment with accompanying recommendations and opportunities for improvement. The report prepared will define the scope of activities, functions, management practices and locations assessed. The applicant shall not claim or otherwise imply that the report applies to other locations, product or activities not covered by the report;

5. The applicant agrees that the report will not be used until permission has been granted by the DOST-MIMAROPA;
6. The applicant agrees that the receipt or acknowledgment of the report ends the assessment stage; any technical assistance ensuing from the recommendations of the report will be viewed as a separate project.

#### **UNDERTAKING**

**I agree to undertake and observe the above General Agreements as stipulated by the Department of Science and Technology Regional Office No. IV-B.**

  
\_\_\_\_\_  
**ENGR. CHRISTIAN B. HERNANDEZ**

**Signature over Printed Name**

\_\_\_\_\_  
**Director for Research**

**Position in the Enterprise**

\_\_\_\_\_  
**July 8, 2021**

**Date**

**Enterprise Profile**Name of Enterprise Mindoro State University – Main CampusProduction Site/Location Alcate, Victoria, Oriental MindoroBusiness Permit No. NA Year Established 1951**Brief Enterprise Background**

The Mindoro State University (MinSU) is a state college with flagship programs on agriculture, fishery and vocational technology. As a higher education institution, it is mandated to conduct research, advanced studies and progressive leadership on its flagship programs and in related fields for community development. Its main campus is located in Victoria, Oriental Mindoro and has two (2) other campuses located in Calapan City and Bongabong.

Year enterprise was established: 1951 Initial capitalization: \_\_\_\_\_

Type of Organization: ☐ Single proprietorship  
☐ Cooperative / Association  
☐ Partnership  
☐ Corporation  
☐ Profit  
☐ Non-profit  
☒ State Universities and Colleges

Enterprise Registration No. NA Year Registered NA

Classification according to capital (PhP) Present capitalization NA

- ☐ Micro (less than 1.5 M)  
☐ Small (1.5 – 15 M)  
☐ Medium (15 – 100 M)

Classification according to employment (number of employees)

- ☒ Micro (1 – 9)  
☐ Small (10 – 99)  
☐ Medium (100 – 199)

Number of Employees: *start-up*

Direct Workers	M: <u>1</u>	F: <u>4</u>
Production	M: <u>    </u>	F: <u>    </u>
Non-production	M: <u>    </u>	F: <u>    </u>
Indirect/Contract Workers	M: <u>    </u>	F: <u>    </u>
Total	M: <u>1</u>	F: <u>4</u>

Business Activity:

<input type="checkbox"/>	Food processing (please specify commodity)	_____
<input type="checkbox"/>	Furniture (please specify commodity)	_____
<input type="checkbox"/>	Gifts, decors, handicrafts (please specify commodity)	_____
<input type="checkbox"/>	Metals and engineering (please specify commodity)	_____
<input type="checkbox"/>	Agriculture/Marine/Aquaculture (please specify commodity)	_____
<input type="checkbox"/>	Health products and pharmaceuticals (please specify commodity)	_____
<input type="checkbox"/>	Information and Communications Technology (ICT) products (please specify commodity)	_____
<input type="checkbox"/>	Others, please specify	<u>Educational Institution</u>

1. Specific product or service the enterprise offers its customers:

Instruction, Research and Development, and Extension

2. Reasons why assistance is being sought:

To provide basic research on taxonomic identity of biya leading to more advance future studies

3. Have you consulted any other individual/organization for any assistance?

☐ If Yes, which company/ agency?

DA, DBM, CHED

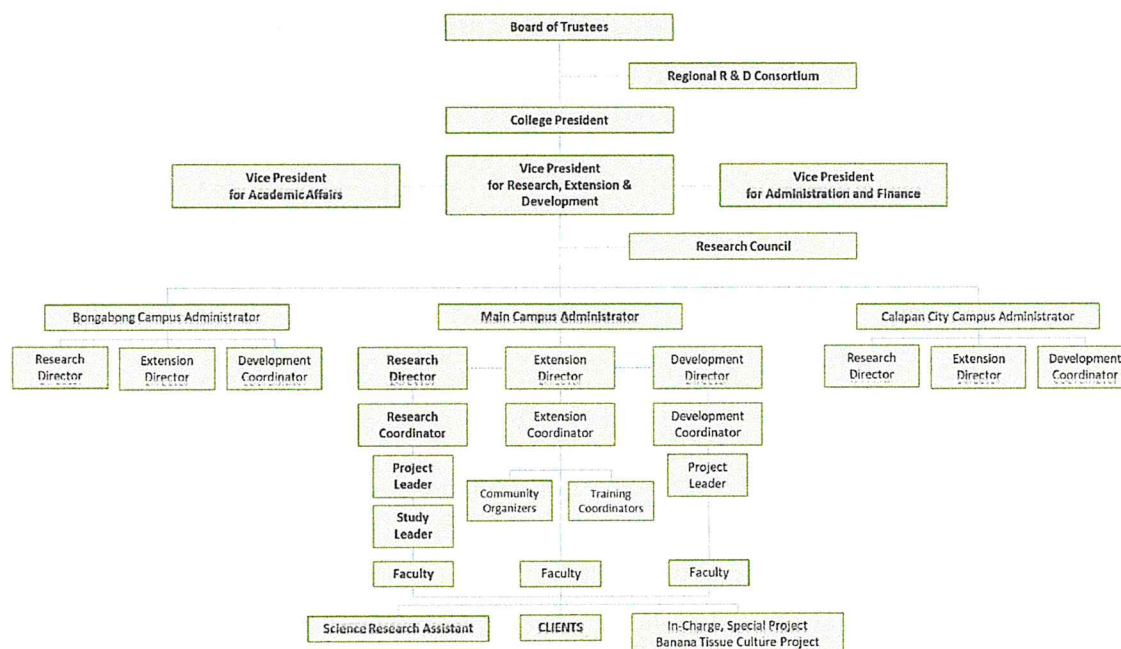
Please specify the type of assistance sought

Research Funding

☐ If No, why not?

\_\_\_\_\_

## Organizational Structure (as per Research Manual 2014)



### 4. Enterprise's plan for the next 5 years?

Development Plan of the Research, Extension and Development targets the establishment of Research Centers for each departments/Colleges that will serve as the research and development, and extension arm of the university. Capacity enhancement for research as well as physical development plan is focused on these centers.

Next 10 years?

For the next 10 years, the Research Centers are envisioned to have fuelled the development of the Colleges into Centers for Development and Centers of Excellence.

### 5. Current agreements and alliances undertaken

None

## BENCHMARK INFORMATION

### ■ Production and Supply Chain

#### ➤ Raw Material

Raw Material	Source	Unit Cost (P)	Volume Used/Year
N/A			

➤ Production

Product	Volume of Production/Year	Unit Cost of Production (₱)	Annual Cost of Production (₱)
N/A			

➤ Existing Functional Production Equipment

Type of Equipment	Specifications	Capacity	No. of Units	Year Acquired
None				

➤ Production Problems and Concerns

N/A

➤ Production Waste Management System

N/A

➤ Production Plan

N/A

➤ Plant Lay-Out -(start-up)

N/A

➤ Process Flow

N/A

➤ Inventory System

N/A

➤ Maintenance Program

N/A

➤ cGMP/HACCP Activities

N/A

➤ Supplies/Purchasing System

*MinSU has a permanent Supply Officer*

▪ **Marketing**

➤ Marketing Plan

*N/A*

➤ Market Outlets and Number

*N/A*

➤ Promotional Strategies

*N/A*

Market Competitors

*N/A*

➤ Packaging

○ Nutrition Evaluation *None*

○ Bar Code *None*

○ Product Label *None*

○ Expiry Date *None*

▪ **Finance**

➤ Cash Flow or other related documents

*The institution has designated officers for the purpose*

➤ Source(s) of capital/credit

*The association has its own funds*

➤ Accounting System

*MinSU has its own Accountant and follows the governing accounting rules*

▪ **Human Resources**

➤ Hiring and Criteria

At least graduate of baccalaureate degree

➤ Incentives to Employees

GSIS, PhilHealth, PAGIBIG and other benefits provided for by the government

➤ Training and Development

Faculty researchers are sent to trainings relevant to their field of expertise

➤ Safety Measures Practiced

None

➤ Other Employee Welfare

None

▪ **Other Concerns**

None

Prepared by:

Validated by:

  
**ENGR. CHRISTIAN B. HERNANDEZ**

Printed Name and Signature of  
Owner/Chair/Representative

**July 8, 2021**

Date

  
**JESSE M. PINE**

Printed Name and Signature of  
PSTD/Cluster Manager

**July 15, 2021**

Date



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### TECHNOLOGY NEEDS ASSESSMENT (TNA) REPORT

<b>COMPANY:</b>	Mindoro State University (MinSU) – Main Campus
<b>ADDRESS:</b>	Alcate, Victoria, Oriental Mindoro

#### SCOPE OF ASSESSMENT

- A. Strategic Directions
  - a. Vision and Mission
  - b. Goals and Objectives
  - c. Strategic Alliances
- B. Management Aspects
- C. Technical Aspects
- D. Marketing Aspects
- E. Financial Aspects


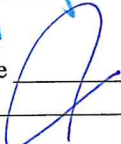
#### SUMMARY OF ASSESSMENT

#### BACKGROUND

The Mindoro State University (MinSU) is a state college with flagship programs on agriculture, fishery and vocational technology. As a higher education institution, it is mandated to conduct research, advanced studies and progressive leadership on its flagship programs and in related fields for community development. Its main campus is located in Victoria, Oriental Mindoro and has two (2) other campuses located in Calapan City and Bongabong.

#### METHODOLOGY

A one-on-one interview using a pre-assessment information sheet as a take-off point was conducted with, Engr. Christian B. Hernandez, Instructor I.

Reported by	<u>JESSE M. PINE</u>	Signature		Date	<u>July 15, 2021</u>
	Name of TNA Team Leader				
Attested by	<u>ENGR. JERRY B. MERCADO</u>	Signature		Date	<u>July 22, 2021</u>
	Name of ARD				

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**SUMMARY OF FINDINGS****1. Strategic Direction****a. Vision and mission**

For the next 10 years, the Research Centers are envisioned to have fuelled the development of the Colleges into Centers for Development and Centers of Excellence.

**b. Plans and Objectives**

Development Plan of the Research, Extension and Development targets the establishment of Research Centers for each departments/Colleges that will serve as the research and development, and extension arm of the university. Capacity enhancement for research as well as physical development plan is focused on these centers.

**c. Strategic alliances and current agreements**

None

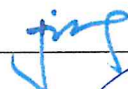

**2. Management Aspect****a. Human resources**

Faculties are hired based on the needed fields that can teach courses being offered. Baccalaureate degree and professional eligibility is among the minimum requirement to become an Instructor in MinSU.

**b. Purchasing**

All purchases related to MinSU's operation will be done by the assigned personnel.

Equipment to be provided by DOST-MIMAROPA will be purchased locally or in Manila and in Oriental Mindoro after a thorough canvass conducted beforehand.

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**c. Work environment**

MinSU is located in Alcate, Victoria, Oriental Mindoro. MinSU will ensure that it will comply with standards set by the local government to operate safely.

**d. Business ethics and social responsibility**

MinSU hires people based on its criteria. Payment of proper taxes are observed.

**e. Occupational health and safety management**

Safety measures are observed.

**3. Technical Aspect**

**a. Operational and outsourcing practices**

**Production system**

N/A

**Production planning and control**

N/A

**Production layout**

N/A

**Work Study/Improvement**


N/A

**Equipment management and maintenance**

Inspection and maintenance of facility and equipment will be strictly implemented.

**Quality assurance system**

N/A

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**Outsourcing practices**

N/A

**b. Product and process performance and improvement****Re-engineering and research development**

Research and development are commonly conducted through collaboration with other agencies or private institutions.

**Performance measures and results – Process**

MinSU's process flow will be documented once the operation started to monitor its efficiency.

**Performance measures and results – Product**

N/A

**Procedures for continuous improvement**

Continuous collaboration with appropriate agencies for the improvement of the institution will be done.

**Product quality standards**

N/A

**Environmental management system****Waste management**

Proper waste disposal is implemented by the institution to maintain environmental integrity.

**4. Marketing Aspect****a. Marketing plan**



N/A

**b. Market outlets**

N/A

**c. Promotional activities**

N/A

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**d. Market competitors**

N/A

**5. Finance**

**a. Cash flow and other related documents**

MinSU has designated officers for the purpose.

**b. Source of capital/credit**

The association has its own funds.


**c. Accounting system**

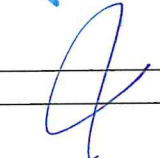
MinSU has designated officers for the purpose.

**CONCLUSIONS**

Based on the interview and ocular inspection the TNA team concludes the following:

1. Based on the initial coordination with concern authorities, it was identified that there is a scarcity of reliable data due to the absence of weather monitoring instrument installed within Mag-asawang Tubig Watershed;
2. Installed weather monitoring devices in the province are not strategically located since most of it requires signal connections for data transmission.
3. At present, there is no reliable and accurate hydrologic model for Mag-asawang Tubig that will serve as baseline data for DRRM planning;
4. MinSU has experts who have the technical capabilities to design and develop automated Arduino-based synoptic weather station that can strengthen real-time and reliable weather monitoring system in Mag-asawang Tubig Watershed in Naujan
5. MinSU has insufficient funds to finance the proposed R&D project for rge development of Arduino-based synoptic weather station due to high investment requirement;

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**RECOMMENDATIONS**

The following are recommended by the TNA team:

1. Provision of technological assistance for the conduct of R&D project on the development of Arduino-based synoptic weather station;
  - a) Deploy and evaluate the performance of the developed Arduino-based synoptic weather station in accordance with the required statistical weather parameters (rainfall, relative humidity, solar radiation, wind speed, wind direction, and stream flow);
  - b) Assess and analyze microclimate data transmitted by the deployed synoptic weather station;
  - c) Obtain comprehensive soil survey to define soil properties in more detailed approach and conduct topographic mapping in areas bounded by the proposed study site.
  - d) Evaluate the suitability of SWAT model in Mag-asawang Tubig watershed using remotely sensed climatic data as warm-up historical data that will be integrated to the designed synoptic weather station;
  - e) Simulate the hydrologic responses to land use and land cover change of Mag-asawang Tubig watershed;
  - f) Calibrate and validate the model at the streamflow monitoring point of the watershed using SUFI-2 algorithm in SWAT-CUP; and
  - g) Assess climate change impacts in the largest watershed in Oriental Mindoro using scenario analysis in the SWAT model.
2. MinSU to prepare and submit all the documentary requirements.

**TNA Team Composition:**

Team Leader: **JESSE M. PINE**  
 Members: **ZALDIE C. GAWAD**  
**MARY FRANCES RAE R. RAMIENTO**

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