



DOST Form 3
NON-R&D PROJECT PROPOSAL
(Technology Transfer, S&T Promotion and Linkages, Policy Advocacy,
Provision of S&T Services, Human Resource Development and Capacity-Building)

I. PROJECT PROFILE

	(1) Program Title: Grant-In-Aid Project Title: Driving Progress through Technology: An Integrated Web-Based System for MEEDO-Bataraza Town Center's Tenants' Information Management and Monitoring					
	(2) Project Leader/Sex: Jennifer G. Rabang / F Agency (smallest unit): Computer Studies Department, Palawan State University Address/Telephone/Fax/Email (Barangay, Municipality, District, Province, Region): Tiniguiban Heights, Puerto Princesa City					
	(3) Cooperating Agency/ies (Name/s and Address/es): LGU-Bataraza					
	(4) Implementing Agency (Municipality / District / Province / Region) Base Station: LGU-Bataraza Other Implementation Site (s): N/A_____					
	(5) Project Duration (number of months): 12 Project Start Date: December 2023 Project End Date: December 2024					
	(6) Total Project Cost: 453,744.03 (indicate Counterpart Funds; use Form 4 for the Line-Item Budget)					
	Implementing Agency/ies	PS	MOOE	EO	Fixed Asset	Total
	DOST-MIMAROPA		79,520			79,520.00
	Palawan State University	214,944.03				214,944.03
	LGU-Bataraza			186,400.00		186,400.00
	TOTAL					480,864.03

II. PROJECT SUMMARY

(7) Executive Summary (not to exceed 200 words)
<p>In today's digital age, leveraging technology has become imperative for organizational efficiency and growth. Recognizing this need, the collaborative efforts of the Palawan State University (PSU) Development Team, DOST-MIMAROPA, and LGU-Bataraza have been dedicated to the development of an integrated web-based system for MEEDO-Bataraza Town Center.</p> <p>This project aims to aid the Municipal Economic Enterprise Development Office (MEEDO) of LGU Bataraza Palawan by developing an efficient and reliable web-based system that will serve as management and monitoring platform for the MEEDO-Bataraza Town Center's tenants-related records and transactions.</p>
(8) Introduction (Not to exceed 15 pages)
<p>One of the municipalities in the southern Palawan, Bataraza is a 1st class municipality comprising twenty two (22) barangays and has a population of 85,439 people, with 49,375 registered voters as of July 2021. The said municipality is dominated by the Molbog peoples and is also the pineapple capital of Palawan.</p> <p>The local government unit of Bataraza has an income-generating project that is under the Municipal Economic Enterprise Development Office (MEEDO). The IGP uses the Bataraza Town Complex (BTC) for rental services to the business owners and residents of Bataraza. Tenants are allowed to use the rental spaces in forms of stalls and building units to sell a variety of products to the market. Each tenant has a contract with the LGU, stating the period and amount of space rentals. The MEEDO is the unit of LGU Bataraza that is in charge of managing the transactions and operations of the Bataraza Town Complex.</p>



Location of the Bataraza Town Center in Bataraza, Palawan.

Rationale/Significance (Not to exceed 300 words)

During the preliminary interviews conducted with the local officials of LGU Bataraza, one of the problem areas includes matters related to the operations and information management of tenants-related data. The personnel-in-charge of the IGP stated specific problems in manual organization and management of printed data, consolidation and summarization of reports and updating records. It takes too much time to perform said tasks which also needs constant updates. The MEEDO also signified their interest to look for alternative ways through the use of technology in order to manage the whole operations of the IGP with more efficiency and reliability.

Through this project proposal, the development team of Palawan State University will have the opportunity to help LGU-Bataraza by accommodating the requests of the MEEDO for the development of a web-based management information system.

By implementing this system, the MEEDO-BTC will benefit from improved data accessibility, streamlined operations, and enhanced decision-making capabilities. This project will serve as a long-term solution to efficiently manage and monitor tenant-related transactions within the MEEDO-BTC.

Project Description (Not to exceed 15 pages)

This project aims to aid the Municipal Economic Enterprise Development Office (MEEDO) of LGU Bataraza Palawan by developing an efficient and reliable web-based system that will serve as management and monitoring platform for the MEEDO-Bataraza Town Center's tenants-related records and transactions. The web-based management information system will serve as the main platform for the MEEDO-BTC in the long run to serve as its secured central storage of digital data, facilitator of transaction procedures and generator of real-time reports.

This project is a collaboration of three (3) government entities: DOST MIMAROPA, PSU, and LGU-Bataraza. The faculty members of PSU will serve as the system developers and the personnel of LGU Bataraza as the system administrators and end users.

Transactions involved in the proposed system includes: 1) Migration of existing data into the proposed system's database, 2) automation of rentals and bills computations, 3) automation of reports generations, and 4) real-time monitoring consolidated and computed financial data.

Objectives (General and Specific):

General Objective:

The main objective of this project is to aid the Municipal Economic Enterprise Development Office (MEEDO) of LGU Bataraza Palawan by developing an efficient and reliable web-based system that will serve as management and monitoring platform for the MEEDO-Bataraza Town Center's tenants-related records and transactions.

Specific Objective/s:

- Develop a relational database as a storehouse of the Bataraza Town Center's digital data.
- Develop a user-centered interface for the authorized employees of MEEDO.
- Secure the digital data from unauthorized access using SHA-256 hash function algorithm.

- Automate the computation of stall rental fees, electricity bills, and other financial charges for the tenants of the Bataraza Town Center.
- Automate the generation of backup data from the system's database.
- Automate the generation of reports for the authorized employees of MEEDO.
- Provide an online dashboard for real-time monitoring of data.
- Test and verify the system's efficiency and reliability.
- Deploy the proposed system to an online hosting server.
- Conduct orientations and training for the end-users of the system.

Methodology:

The team will use the Agile Methodology/Model during the development process of the system. This model is one of the simplest and most effective processes to turn a vision for a business need into software solutions. It employs continual planning, learning, improvement, team collaboration, and early delivery. It encourages flexible responses to change and to adapt to clients' inevitable demands easily.¹

Data gathering shall be in the form of interview sessions with the target clients. Reviews on existing business rules and documents shall be conducted as well in order to produce the conceptual data model for the organization. MySQL Workbench Modeler, a component of the MySQL Database Management System (DBMS) will be used to design the conceptual data model. The said DBMS will also be used for the development of database and population of its test data.

In developing the software, the proponents will use a free open source web framework, enabling the rapid development of secure and maintainable websites. Using a web framework takes care of much of the hassle of web development; therefore, proponents can focus more on the clients' needs.²

The selected framework is free and open-source, which is also foreseen to provide better documentation, improved performance, and multiple built-in functionalities than various web frameworks that make it time-efficient to build responsive web applications. A secure authentication system is necessary to manage the project's data; hence, the proponent opts to use built-in support for user authentication and authorization to organize authorization logic and control access to the resources.

A series of user testing and training for the end users of the project shall be conducted to hasten the users' system familiarization to the system as well as to validate the accuracy of the system's performance.

The proponent will evaluate the software based on ISO/IEC 25010:2011 Software Quality framework to identify the eight (8) quality characteristics, functional suitability, performance efficiency, compatibility, usability, reliability, security, maintainability, & portability. It will provide clarity of the purpose and operating capability of the software.

¹ <https://www.guru99.com/agile-scrum-extreme-testing.html>
² <https://developer.mozilla.org/en-US/docs/Learn/Server-side/Django/Introduction>

Outputs	Key Performance indicators	Means of Verification	Assumption and Risks
Online Management Information System for LGU Bataraza MEEDO-BTC	Live website deployed into one hosting site.	Management team survey. Actual monitoring	Assumptions: The website for the online management information system of LGU Bataraza MEEDO-BTC is accessible through the Internet 24 hours a day. Risks: Power interruptions and disconnection to internet access.
Implementation of key performance in terms of usability testing.	Usability testing to evaluate the system's ease of use and identify areas for improvement.	Usability testing will be conducted to assess the system's user-friendliness and pinpoint areas that need enhancement.	Assumption It is assumed that by conducting usability testing, developers will gather valuable information and suggestions on how to make the system easier to use and more user-friendly. Risk: If the developers do not have enough different kinds of users or don't test the system properly, developers might not get all the information needed about how easy it is to use, and the feedback might not be completely fair or accurate.

Expected Outputs (6Ps):

Product - Development of Online Management Information System for LGU Bataraza MEEDO-BTC
 People Service - Provision of Training to LGU-Bataraza on the use of the MIS
 Place and Partnership - Linkage forged among DOST-MIMAROPA, PSU, and LGU-Bataraza

Potential Outcomes:			
Outcomes	Key Performance Indicators	Means of Verification	Assumption and Risks
<ul style="list-style-type: none"> • A secured and organized collection of transaction records and reports related to the operations of the LGU-Bataraza MEEDO BTC. • A user-friendly online platform for the authorized employees of the LGU for their daily operations on BTC. • Automated generation of reports, computations of financial data on rental bills, surcharges, and electricity bills of the BTC tenants. • A real-time set of online information which can be used by the decision-makers of the LGU Bataraza for strategic planning. 	<ul style="list-style-type: none"> • 100% of the present data of the MEEDO-BTC Tenant are stored in the system's database. • A "very satisfactory" remark for the system if acquired from the 90% of MEEDO-BTC employees who are designated as system end-users. • 90% of the reports and financial computations that need to be provided by the MEEDO-BTC are provided by the system. • Daily monitoring of MEEDO-BTC data and information is accessible to all authorized employees 	<p>Actual monitoring</p> <p>Usability Survey questionnaire</p> <p>Actual monitoring</p> <p>Actual monitoring</p>	<p>Assumption:</p> <p>The tenants-related data are ready and available for migration to the new system with the assistance of MEEDO BTC employees.</p> <p>Financial data from external sources are available and according to the specified calculations during the requirements analysis.</p> <p>Internet connection is stable in the area of MEEDO.</p> <p>Risk:</p> <p>Unstable internet connection, power interruptions, untrained users, computer malfunctions.</p>
Potential Impacts (2Is): <i>Economic Impact</i> - The use of the MEEDO-BTC is expected to enhance the services of LGU-Bataraza in managing the Bataraza Town Center through faster and more reliable transaction processing, faster and accurate information from real-time data, and reports generations from the management information systems of the MEEDO-BTC			
Discussion on the results of related project handled by the same proponent (if any):			
Target Beneficiaries: MEEDO, LGU-BATARAZA			

<p>Sustainability Plan (if applicable):</p> <p>The proposed project will be beneficial to LGU-Bataraza specifically to its MEEDO and to other LGUs that will adopt the system in the future.</p> <p>Once accepted and adopted, the project can be further expanded and be adopted to other LGUs, due to the scalability and adaptability of the system, which is tailor-fit to the needs of MEEDO.</p> <p>Three (3) employees from MEEDO will be trained on how to use and maintain the developed system. They will also report encountered bugs during the use of the system to the development team to ensure that any issues or glitches encountered by users are promptly addressed and resolved, leading to an improved user experience and overall system performance.</p> <p>The system will be monitored for small integration to the system every six (6) months for three (3) years.</p> <p>Technical:</p> <p>The Continuous Integration / Continuous Development (CI/CD) method will be used throughout the lifecycle of this project to continuously deliver the updated version of the system to the client. This concept includes continuous integration, continuous delivery, and continuous development.</p> <p>Gender and Development (GAD) Score (refer to the attached GAD checklist):</p>
<p>(9) Workplan (See Form 5)</p>
<p>(10) Project Management (not to exceed one page)</p> <p>The PSU Development Team and MEEDO will collaborate to analyze the project requirements. The system will be developed by a team of faculty members from Palawan State University. The MEEDO-LGU Bataraza will provide essential documents and actively participate throughout the development process, including project monitoring.</p> <p>Regular checks and evaluations of the software will be conducted by DOST-MIMAROPA and MEEDO-LGU BATARAZA to ensure strict adherence to the team-identified requirements throughout the system's development process.</p> <p>The PSU Development Team will facilitate testing and training sessions for MEEDO employees. Additionally, the LGU-Bataraza will assign staff members to utilize and maintain the software, with guidance from the development team.</p>

III. OTHER SUPPORTING DOCUMENTS REQUIRED (Please refer to page 2 for the additional necessary documents.)



DOST Form 4

DEPARTMENT OF SCIENCE AND TECHNOLOGY
Project Line-Item Budget
CY ____

Program Title : Grant-In-Aid
Project Title : Driving Progress through Technology: An Integrated Web-Based System for MEEDO-Bataraza Town Center's Tenants' Information
Implementing Agency : DOST
Total Duration : 12 months
Current Duration : 12 months
Cooperating Agency : PSU, LGU-Bataraza
Program Leader :
Project Leader : Jennifer G. Rabang
Monitoring Agency : DOST

	DOST	Counterpart Funding	
		Implementing Agency PSU	Cooperating Agency LGU-Bataraza
I. Personal Services	P	P	P
<u>Direct Cost</u>			
Salaries		214,944.03	
Sub-total for PS	P	214,944.03	P
II. Maintenance and Other Operating Expenses			
<u>Direct Cost</u>			
Traveling Expenses			
Local	64,520.00		
Representation Expenses (e.g. food for meetings, etc.)	15,000.00		
Sub-Total for MOOE	P	P	P
III. Equipment Outlay			
Information and Communication Technology Equipment	P	P	P
			186,400.00
Sub-Total for EO	P	P	P
			186,400.00
GRAND TOTAL	P	P	P
	79,520.00	214,944.03	186,400.00

Certified Funds Available:

DOMINGO PALATINO
Accountant, PSU

XAVIER MAC DANIEL ORTIZ
Accountant III, DOST-MIMAROPA

Approved by:

DR. MA. JOSEFINA P. ABILAY
Regional Director, DOST-MIMAROPA



(2) Project Title: Driving Progress through Technology: An Integrated Web-Based System for MEEDO-Bataraza Town Center's Tenants' Information Management and Monitoring

(4) Project Start Date: December 2023

[illegible]

[illegible]

DOST Form 5
C – RISKS AND ASSUMPTIONS

(1) Program Title: Grant-In-Aid

(2) Project Title: Driving Progress through Technology: An Integrated Web-Based System for MEEDO-Bataraza Town Center's Tenants' Information Management and Monitoring

(3) Project Duration (number of months): 12

(4) Project Start Date: December 2023

(5) Project End Date: December 2024

OBJECTIVES	(11) RISKS AND ASSUMPTIONS	(12) ACTION PLAN (use separate sheet if necessary)
<p>Online Management Information System for LGU Bataraza MEEDO-BTC</p>	<p>Assumptions:</p> <p>The website for the online management information system of LGU Bataraza MEEDO-BTC is accessible through the Internet 24 hours a day.</p> <p>Risks:</p> <p>Power interruptions and disconnection to Internet access.</p>	<p>Install uninterruptible power supply (UPS) systems or backup generators to provide temporary power during power outages and ensure continuous operation of critical equipment and systems.</p> <p>Regularly back up the database and critical data to secure off-site locations or cloud storage. Conduct periodic tests to ensure data integrity and establish a reliable recovery process in case of data loss or corruption.</p>
<p>A secured and organized collection of transaction records and reports related to the operations of the LGU-Bataraza MEEDO BTC.</p> <p>A user-friendly online platform for the authorized employees of the LGU for their daily operations on BTC.</p> <p>Automated generation of reports, computations of financial data on rental bills, surcharges, and electricity bills of the BTC tenants.</p> <p>A real-time set of online information which can be used by the decision-makers of the LGU Bataraza for strategic planning.</p>	<p>Assumption:</p> <p>The tenants-related data are ready and available for migration to the new system with the assistance of MEEDO BTC employees.</p> <p>Financial data from external sources are available and according to the specified calculations during the requirements analysis.</p> <p>Internet connection is stable in the area of MEEDO.</p> <p>Risk:</p> <p>Unstable internet connection, power interruptions, untrained users, computer malfunctions.</p>	<p>User Training and Support:</p> <ol style="list-style-type: none"> Provide comprehensive training programs for users to familiarize them with the systems, software, and best practices. Develop user manuals, tutorials, or online resources to assist users in troubleshooting common issues. Establish a helpdesk or support system to address user queries and technical difficulties promptly. <p>Computer Maintenance:</p> <ol style="list-style-type: none"> Implement a regular maintenance schedule for computers, including software updates, security patches, and hardware checks. Perform routine system diagnostics to identify and resolve any potential malfunctions or performance issues. Ensure proper backup and recovery mechanisms are in place to safeguard important data in the event of computer failures.