



QUARTERLY RESEARCH PROGRESS REPORT

QUARTER: (1st, 2nd, 3rd)

**Research Title: PHYSICOCHEMICAL CHARACTERIZATION OF THE MAJOR
RIVER SYSTEMS IN LEYTE (ECH. 14-1420.15)**

I. Program/Project/Study Objectives *(Please specify if it is a program/ project/study):*

This project attempts to uncover the status of the major river systems in the Province of Leyte starting with Palhi River system in Baybay City in 2014 & 2018, Salog River system in Hilongos, Leyte in 2015, Pagbanganan River in Baybay City in 2016, Anilao River in Ormoc City in 2017, and Sibugay River in Albuera, Leyte in 2021. This academic year 2022 to 2023, the Daguitan-Marabong River System which crosses the towns of Burauen, Julita and Dulag, Leyte is the focus.

Specifically, the project aims to (1) investigate the levels of organic matter and carbonates in sediments of the major river systems in Leyte, (2) determine the physicochemical properties of the water in the major river systems in Leyte, (3) evaluate the presence of heavy metals in water and in the sediments of major river systems in Leyte, (4) assess the levels of N, P, and K of the water and the sediments of the major river systems in Leyte, and (5) characterize the water quality of the major river systems in Leyte through pigmental analyses of the freshwater algae.

II. Relevance to VSU & College's Thrust and Priorities:

The project is aligned with the university and college thrust and priorities on environmental health risk monitoring and evaluation.

III. Highlights of accomplishments within the quarter

A. Targets for the quarter

The targets for the 2nd and 3rd quarters included the submission and approval of the PPMP and the continuation of the data gathering for the different component studies of the project, reconnaissance survey of the river system of interest, and mentoring of the BSChem major students in the preparation of their research proposals.

B. Highlights of accomplishments

The following were accomplished on the 1st, 2nd, and 3rd quarters of 2022.

- a) The physicochemical analyses of water, heavy metal analysis of water, NPK analysis of sediments, and pigmental analyses of freshwater algae in Sibugay River, Albuera, Leyte were completed (1st and 2nd quarter)
- b) The Marabong-Daguitan River system was identified and selected as the river system of interest for 2022-2023 (2nd quarter)

- c) The sampling points along the Marabong-Daguitan river system were identified through reconnaissance survey (2nd quarter)
- d) Student-research proposals were successfully presented for evaluation (2nd quarter)
- e) PPMP for laboratory supplies and reagents were submitted and approved (3rd quarter)

IV. Physical Report of Operation

A. Research Program

	Particulars/Name and Brief Description of Utilized/ Commercialized Technologies	Number
Outcome Indicator		
1. Number of research outputs utilized by the industry or by other beneficiaries	NA	
Output Indicator		
1. Number of research outputs completed within the year	Physicochemical Characterization of Sibugay River System in Albura, Leyte	1
2. Percentage of research outputs published in internationally-referred or CHED recognized journal within the year	On-going	

B. Technologies/Information patented and commercialized

Technology Invention(s) New Information	Invention Patent Number	Date of Issue	Utilization of Invention		Name of Commercial Product
			Development	Service	
A. Technology Invention(s)	None				
B. New Information	None				

C. Research papers published (Identify if articles were for Research, Extension, Innovation or MSc/ PhD Studies)

	Title	Author (s)	Date/Year/Publication/ Publisher	Remarks (if Research, Extension, Innovation, Thesis, MSc/PhD)
a. Refereed Journal	None			
Institutional				
National				
International				
b. Semi-popular publ'n (newsletter, etc.)	None			
c. Popularized publ'n (technoguides, etc.)	None			

d. Book Chapter/s	None			
e. Books	None			

D. Citation

Research Output as Cited by Other Researcher(s) in Journal Activities									
Title of Research Output/ Published Journal Articles/ Book	Title of Journal & Vol. Issue/ Year	Keywords	Researcher (s)	Citation Details					
				Author(s) Who Cited the Research Output	Title of Article Where the Research Output Was Cited	Title of Journal	Vol. / Issue / Page No.	City/ Year Published	Publisher
Villarmino, Jerald & Quevedo, Elizabeth. (2021) Physicochemical Characterization of the Water in Pagbangan an River, Baybay City, Leyte, Philippines	IJISRT (International Journal of Innovative Science and Research Technology) Vol 6 Issue 7/2021		None	None	None	None	None	None	None

V. Issues, Problems, and Recommendations

Issues:

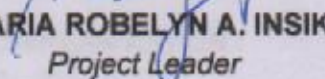
- Travel restrictions during Covid-19 pandemic
- Low research budget
- Slow procurement process of lab supplies and reagents especially the PNP regulated ones and replacement of worn-out instrument parts

Problems:

- Strict travel protocols due to Covid-19 limit the mobility of the researchers and student-researchers to access the site as well as the school premises. Low research budget as well limited or no stock of PNP regulated reagents/chemicals pushed the team to contact a third-party laboratory to analyze certain parameters. There was only one set of electrodes for the multimeter to analyze parameters on-site, replacement of worn-out electrodes was time-consuming.

Recommendations:

Research budget should be increased to defray expenses in the replacement of worn-out multimeter probes and in the purchase of new instrument to be used in the study.

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