COMPREHENSIVE SEMESTRAL REPORT ON FIELD PRACTICE AT NATIONAL IRRIGATION ADMINISTRATION – UPPER PAMPANGA RIVER INTEGRATED IRRIGATION SYSTEMS (NIA-UPRIIS) DIVISION V

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ABSTRACT

MERCADO, MARIELLE F., Department of Agricultural and Biosystems Engineering, College of Engineering, Central Luzon State University, Science City of Muñoz, Nueva Ecija, **JUNE 2023, COMPREHENSIVE SEMESTRAL REPORT ON FIELD PRACTICE AT NATIONAL IRRIGATION ADMINISTRATION – UPPER PAMPANGA RIVER INTEGRATED IRRIGATION SYSTEMS (NIA-UPRISS) DIVISION V**

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The Department of Agricultural and Biosystems Engineering has partnered with the NIA-UPRIIS Division V in Guimba, Nueva Ecija as the collaborating agency in their field practice program with the aim of providing practical experience and skills to students in their field of study. This endeavor in paper was focused on three main activities: digitizing individual lot parcels, creating printable maps using Quantum Geographic Information System (QGIS), and calibration of irrigation canal flow markers.

Throughout the digitization activity, the student was trained to proficiently use QGIS. Six turnout service area groups (TSAG) of A. Bonifacio Norte IA were successfully digitized,including the encoding in Microsoft Excel files to organize the TSAG information. This hands-on experience allowed the student to gain practical skill in data management and organization using GIS software.

In the map creation and layouting, the student learned to create print layouts of the digitized maps. She acquired skills in adding various elements such as maps, legends, text labels, and scale bars to produce visually appealing and informative printable files. This activity enhanced her ability to present and communicate spatial data effectively.

The student had the opportunity to calibrate irrigation canal flow markers by visiting different open channel canals within the NIA-UPRIIS Division V area to measure the actual physical parameters including cross-sectional area and velocity, enabling the determination of water discharge. These measurements were essential for simulating canal behavior and improving the overall performance of the irrigation system. Also, the student established rating tables and curves to show the stage-discharge relationship, contributing to accurate water resource management.

Overall, this study highlighted the significance of the field practice program in providing practical training, enhancing technical knowledge, and cultivating skills essential in the field of agricultural and biosystems engineering. The collaboration with NIA-UPRIIS Division V and the utilization of QGIS mapping and canal calibration techniques offered the student real-world experiences to overcome the industry challenges.

Keywords: QGIS; calibration; irrigation canals

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