

LUTFI LUGOWO, 21.240.0058

SISTEM INFORMASI MANAJEMEN BUDIDAYA DAN *MONITORING* KUALITAS AIR TAMBAK PADA BUDIDAYA UDANG *VANAME* BERBASIS *MOBILE* DI PEMALANG, di bawah bimbingan Ibu Devi Sugianti, M.Kom., dan Bapak Anas Syaifudin, M.Kom.

247 + xvii halaman / 149 gambar / 23 tabel / 5 lampiran / 30 pustaka (2020 – 2025)

ABSTRAK

Tambak budidaya udang vaname milik Bapak Sutadi di Desa Ketapang, Kecamatan Ulujami, Kabupaten Pemalang masih menggunakan pencatatan konvensional dalam pengelolaan kegiatan budidaya dan monitoring kualitas air. Pencatatan konvensional seperti jadwal pemberian pakan, data panen, pengelolaan kolam, serta stok pakan menimbulkan berbagai kendala, seperti data yang mudah rusak, kesalahan pencatatan, serta kesulitan dalam evaluasi dan pelacakan. Untuk mengatasi hal tersebut, dikembangkan sistem informasi manajemen budidaya dan monitoring kualitas air tambak berbasis mobile. Sistem ini mencakup fitur pencatatan jadwal dan histori pemberian pakan, pemantauan parameter kualitas air (suhu, pH, dan salinitas), pengelolaan stok pakan, serta pencatatan hasil panen. Pengembangan sistem menggunakan metode Waterfall yang meliputi tahap Communication, Planning, Modelling, Construction, dan Deployment. Desain sistem dibuat menggunakan Unified Modelling Language (UML) dan Lembar Kerja Tampilan (LKT). Implementasi sistem dilakukan menggunakan bahasa Dart dan framework Flutter, serta basis data Firebase. Pengujian dilakukan menggunakan metode White Box untuk menguji logika program, Black Box untuk menguji fungsi-fungsi sistem, dan User Acceptance Test (UAT). Hasil pengujian menunjukkan bahwa sistem berjalan sesuai rancangan, semua fitur berfungsi dengan baik, serta mendapat respon positif dari pemilik dan pekerja tambak. Diharapkan sistem ini mampu meningkatkan efisiensi pencatatan, akurasi data, dan produktivitas dalam budidaya udang vaname secara menyeluruh.

Kata Kunci: *Sistem Informasi, Pengelolaan Budidaya Udang Vaname, Mobile, Waterfall*

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247 + xvii pages / 149 figures / 23 tables / 5 appendices / 30 references (2020–2025)

ABSTRACT

Mr. Sutadi's vannamei shrimp farming pond in Ketapang Village, Ulujami District, Pemalang Regency still uses conventional record-keeping for managing farming activities and Monitoring water quality. Conventional records such as feeding schedules, harvest data, pond management, and feed stock create various challenges, including data vulnerability, recording errors, and difficulties in evaluation and tracking. To address these issues, a mobile-based aquaculture management and water quality Monitoring information system was developed. The system includes features for recording feeding schedules and history, Monitoring water quality parameters (temperature, pH, and salinity), managing feed stock, and recording harvest results. The system was developed using the Waterfall method, which consists of the stages of Communication, Planning, Modelling, Construction, and Deployment. System design was created using Unified Modelling Language (UML) and Screen Design Worksheets. The system was implemented using the Dart programming language and Flutter framework, with Firebase as the database. Testing was carried out using White Box testing to examine program logic, Black Box Testing to validate system functions, and User Acceptance Testing (UAT). The test results show that the system operates as designed, all features work properly, and it received positive responses from the pond owner and workers. This system is expected to improve recording efficiency, data accuracy, and overall productivity in vannamei shrimp farming.

Keywords: *Sistem Informasi, Pengelolaan Budidaya Udang Vaname, Mobile, Waterfall*