

# The Application of Uav & Remote Sensing for Rural Development in Western Province of Png

Clifford Jr. Mespuk, Sujoy Kumar Jana and Tingneyuc Sekac (Papua New Guinea)

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## SUMMARY

The field of town planning is one of the many areas in city life where “Unmanned Aerial Vehicles” (UAVs) and drones could find use. When compared to traditional surveying options, drones may offer planners a more accurate, precise, flexible, and economical means of obtaining information. To maximize the public benefit from the use of ‘drone technology’ in town planning, town planners and surveyors require flexible, practical drone regulations that address the numerous concerns surrounding the use of UAVs in urban areas.

This research presents a case study on the application of ‘Unmanned Aerial Vehicles’ and ‘Remote Sensing technologies’ for rural development in Papua New Guinea, specifically focusing on the Nomad District Planning in the Western Province. The study aims to examine the potential of UAVs and remote sensing in addressing the challenges faced by rural communities in terms of land-use planning, infrastructure development, and natural resource management. The case study begins by providing an overview of the current state of rural development in Papua New Guinea and highlighting the specific issues faced by the Nomad District.

‘Unmanned Aerial Vehicles’ and ‘Remote Sensing technologies’ are increasingly becoming vital tools for rural development, offering high-resolution data acquisition with flexibility and relative cost-effectiveness. This study investigates the application of these technologies in the Nomad District of Western Province, Papua New Guinea, an area characterized by remote and difficult-to-access terrains. Through a qualitative case study approach, we analyze how UAV-enabled remote sensing can assist in the planning and execution of development projects such as land use mapping, infrastructure development, agricultural monitoring, and disaster risk management. Key findings demonstrate that UAVs enhance the capacity for timely and accurate data collection, enabling better-informed decision-making. Furthermore, the integration of remote

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sensing data with Geographic Information System platforms has provided planners and stakeholders with a comprehensive overview of the district's resources and needs. The study also addresses the logistical challenges and technical limitations encountered during the UAV deployment in this rural setting and highlights the importance of local capacity building for sustainable technology adoption. The implications of this research are significant for stakeholders involved in rural development within PNG and other similar contexts, paving the way for a more integrated and strategic approach to rural development using UAV and remote sensing technologies

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