

## RINGKASAN

Saputra Rio, 2025, Dampak Perubahan Iklim Terhadap Ketersediaan Pangan Lokal di Wilayah Pesisir dan Pulau-pulau Kecil (Studi Kasus Pulau Mapur Kabupaten Bintan), Magister Ilmu Lingkungan, Universitas Maritim Raja Ali Haji, Khodijah Ismail, Dony Apdillah.

Perubahan iklim merupakan tantangan global yang memberikan dampak signifikan terhadap ekosistem dan ketersediaan pangan lokal masyarakat di wilayah pesisir dan pulau-pulau kecil. Di pulau Mapur, ketergantungan masyarakat terhadap sumber daya laut dan pertanian tradisional menjadikan mereka semakin rentan terhadap dinamika iklim, seperti peningkatan suhu permukaan laut, fluktuasi suhu udara, perubahan pola curah hujan, serta kejadian cuaca ekstrem. Penelitian ini bertujuan untuk menganalisis dampak perubahan iklim terhadap ketersediaan pangan lokal serta mengidentifikasi strategi adaptasi yang relevan dalam konteks sosial-ekologis pulau kecil. Pendekatan metodologi yang digunakan adalah metode campuran (*mix methods*) mencakup pendekatan kuantitatif melalui analisis *Structural Equation Modeling–Partial Least Squares* (SEM–PLS) guna mengukur pengaruh variabel iklim terhadap hasil tangkapan ikan, pendapatan nelayan, dan ketersediaan pangan. Pendekatan kualitatif dilakukan melalui wawancara mendalam dan analisis *heatmap* untuk mengevaluasi korelasi antara variabel iklim lokal, persepsi masyarakat dan produksi pertanian. Hasil penelitian menunjukkan bahwa perubahan iklim memiliki pengaruh signifikan terhadap penurunan hasil tangkapan ikan dan produktivitas pertanian, yang berdampak langsung pada pendapatan rumah tangga dan ketersediaan pangan lokal. Temuan ini menunjukkan pentingnya strategi adaptasi sector ekologi, sosial dan ekonomi. Strategi adaptasi meliputi antara lain diversifikasi tanaman tahan iklim, pengembangan sistem akuakultur yang adaptif terhadap cuaca ekstrem, serta penguatan kapasitas masyarakat. Diskusi penelitian juga menekankan pentingnya dukungan kebijakan dan pemanfaatan inovasi teknologi dalam membangun sistem pangan lokal yang tangguh dan berkelanjutan. Dengan demikian, penelitian ini mempertegas bahwa perubahan iklim bersifat multidimensional dan menuntut pendekatan terpadu serta partisipatif dalam merespons tantangan yang dihadapi oleh komunitas pulau kecil. Temuan dan strategi yang dihasilkan diharapkan dapat menjadi referensi bagi pembuat kebijakan dan masyarakat lokal dalam merumuskan langkah-langkah adaptasi yang efektif demi menjaga keberlanjutan sistem pangan dan kesejahteraan masyarakat pesisir.

Kata kunci: Perubahan Iklim dan Ketersediaan Pangan, pulau Mapur

## **SUMMARY**

*Saputra Rio, 2025, The Impact of Climate Change on Local Food Security in Coastal Areas and Small Islands (Case Study of Mapur Island, Bintan Regency), Master of Environmental Science, Raja Ali Haji Maritime University, Khodijah Ismail, Dony Apdillah.*

*Climate change is a global challenge that has significant impacts on ecosystems and local food security for communities in coastal areas and small islands. On Mapur island, the community's dependence on marine resources and traditional agriculture makes them increasingly vulnerable to climate dynamics, such as rising sea levels, fluctuations in air temperature, changes in rainfall patterns, and extreme weather events. This study aims to analyze the impact of climate change on local food security and identify relevant adaptation strategies within the socio-ecological context of small islands. The methodological approach used is a mixed-methods approach, including a quantitative approach through Structural Equation Modeling–Partial Least Squares (SEM–PLS) analysis to measure the influence of climate variables on fish catch, fishermen's income, and food availability. The qualitative approach was conducted through in-depth interviews and heatmap analysis to evaluate the correlation between local climate variables, community perceptions, and agricultural production. The research findings indicate that climate change has a significant impact on the decline in fish catch yields and agricultural productivity, which directly affects household income and local food availability. These findings highlight the importance of adaptation strategies across ecological, social, and economic sectors. Adaptation strategies include, among others, diversifying climate-resilient crops, developing aquaculture systems adaptive to extreme weather, and strengthening community capacity. The research discussion also emphasizes the importance of policy support and the utilization of technological innovations in building resilient and sustainable local food systems. Thus, this study reinforces that climate change is multidimensional and requires an integrated and participatory approach in responding to the challenges faced by small island communities. The findings and strategies generated are expected to serve as a reference for policymakers and local communities in formulating effective adaptation measures to maintain the sustainability of food systems and the well-being of coastal communities.*

*Keywords: Climate Change and Food Security, Mapur Island*