

**DYNAMIC CAPABILITIES IN WASTE MANAGEMENT:  
A STUDY OF THE BANGKALAN REGENCY  
RECYCLING HOUSE**

**UNDERGRADUATE THESIS**



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Surabaya, 20 May 2026

Danu Firman Cahya Sysnanda

## RESEARCH ABSTRACT

### DYNAMIC CAPABILITIES IN WASTE MANAGEMENT: A STUDY OF THE BANGKALAN REGENCY RECYCLING HOUSE

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Waste management remains a critical environmental issue in Bangkalan Regency due to the increasing volume of waste generation and the limited capacity of existing waste processing facilities. In response to this condition, the Environmental Agency (*DLH*) of Bangkalan Regency developed the Recycling House (*Rumah Daur Ulang/RDU*) as an innovation in waste management based on dynamic governance principles. This study aimed to analyze the implementation of dynamic capabilities in waste management at the RDU of Bangkalan Regency using the Dynamic Governance framework proposed by Neo and Chen, particularly through the dimensions of thinking ahead, thinking again, and thinking across. The research employed a qualitative approach with a case study design. Data were collected through in-depth interviews, observations, and documentation studies involving officials of the Environmental Agency, RDU managers, and surrounding communities. The findings showed that the DLH of Bangkalan Regency had demonstrated thinking ahead through strategic planning for infrastructure expansion, technological innovation, and the development of waste-based economic products such as briquettes, RDF, maggot cultivation, and plastic processing. The thinking again capability was reflected in continuous evaluations of operational constraints, waste accumulation, logistical limitations, and community complaints, which encouraged improvements in management systems, machinery, and operational procedures. Meanwhile, thinking across was implemented through benchmarking activities and cross-sector collaborations involving private companies, third parties, and academic institutions to strengthen technological capacity and sustainable waste governance. This study concludes that the implementation of dynamic capabilities has contributed to the transformation of waste management in Bangkalan Regency toward a more adaptive, collaborative, and sustainable governance model despite existing operational and fiscal challenges.

**Keywords:** Dynamic Capabilities, Dynamic Governance, Recycling House, Waste Management, Bangkalan Regency.

## **ABBREVIATIONS AND BRIEF DEFINITIONS**

The following abbreviations and terms are used throughout this thesis to improve readability and provide consistency in terminology related to waste management governance in Bangkalan Regency.

1. DLH (Dinas Lingkungan Hidup) Kabupaten Bangkalan: The Environmental Agency of Bangkalan Regency, a regional government institution responsible for environmental protection, waste management policies, environmental supervision, and the operation of waste management facilities within the regency.
2. RDU (Rumah Daur Ulang) Kabupaten Bangkalan: The Recycling House of Bangkalan Regency, an intermediary waste processing facility established to reduce waste accumulation through sorting, recycling, and waste conversion activities before final disposal.
3. SIPSAN (Sistem Informasi Pengelolaan Sampah Nasional): The National Waste Management Information System developed by the Indonesian government to collect, monitor, and provide national data related to waste generation, waste reduction, and waste handling performance across regions in Indonesia.
4. BPS RI (Badan Pusat Statistik Republik Indonesia): Statistics Indonesia, the national statistical agency responsible for providing official statistical data related to population, socio-economic conditions, regional development, and environmental indicators in Indonesia.
5. Ministry of Environment / Environmental Control Agency: Refers to the Indonesian governmental institution responsible for formulating national

environmental policies, environmental protection, pollution control, and waste management regulations. Within this thesis, the term may refer to the Ministry of Environment and Forestry of the Republic of Indonesia or its institutional transformation under the Environmental Control Agency structure.

6. Law / Act: Refers to Indonesian national legislation cited throughout this thesis, particularly regulations concerning environmental governance, regional administration, and waste management systems. Indonesian laws are commonly written in English as Law Number ... Year ... concerning ... or Act Number ... Year ... concerning ....
7. RPJMD (Rencana Pembangunan Jangka Menengah Daerah): Regional Medium-Term Development Plan, a five-year regional development planning document prepared by the local government as a guideline for development policies, programs, strategic priorities, and public service improvements, including environmental and waste management development in Bangkalan Regency.
8. APBD (Anggaran Pendapatan dan Belanja Daerah): Regional Revenue and Expenditure Budget, which refers to the annual financial plan of a regional government approved by the Regional House of Representatives (DPRD). The APBD functions as the primary source of funding for regional governance, public services, infrastructure development, and environmental management programs, including waste management activities carried out by the Government of Bangkalan Regency.

9. TPA (Tempat Pemrosesan Akhir): Final Waste Processing Site or landfill facility designated for the final treatment and disposal of municipal solid waste after collection and transportation processes.
10. TPST (Tempat Pengolahan Sampah Terpadu): Integrated Waste Processing Facility, a waste management facility designed to carry out integrated waste treatment activities, including sorting, recycling, composting, and processing residual waste before final disposal.
11. TPS3R (Tempat Pengolahan Sampah Reduce, Reuse, Recycle): A community-based waste processing facility that implements the principles of Reduce, Reuse, and Recycle (3R) through waste sorting, recycling, composting, and limited-scale waste treatment activities.
12. Waste Bank: A community-based waste management initiative in which recyclable waste is collected, sorted, and deposited by residents in exchange for economic value or savings incentives, aiming to encourage public participation in waste reduction activities.
13. RDF (Refuse Derived Fuel): A processed fuel product generated from combustible municipal solid waste materials through sorting, shredding, and drying processes, which can be utilized as an alternative energy source for industrial purposes.
14. PHE WMO (Pertamina Hulu Energi West Madura Offshore): A subsidiary of Pertamina operating in the upstream oil and gas sector in the West Madura Offshore working area, which collaborates in community empowerment and

environmental programs related to waste management innovation in Bangkalan Regency.

15. CSR (Corporate Social Responsibility): A corporate commitment to contribute to sustainable economic development through social, environmental, and community empowerment programs as part of business responsibility toward society and stakeholders.
16. SOP (Standard Operating Procedure): A standardized operational guideline containing sequential procedures and technical instructions used to ensure consistency, effectiveness, and accountability in organizational activities and public service implementation.
17. Dynamic Governance: A governance theory developed in Singapore by Boon Siong Neo and Geraldine Chen through their book “Dynamic Governance: Embedding Culture, Capabilities and Change in Singapore.” The theory emphasizes the ability of governments and public institutions to continuously adapt to complex and dynamic environmental changes through the capabilities of thinking ahead, thinking again, and thinking across. It highlights adaptive policymaking, continuous learning, innovation, and cross-sectoral adaptation in achieving effective governance.
18. Dynamic Capabilities: Organizational capabilities that enable institutions to adapt, integrate, and reconfigure resources, strategies, and operational processes in response to environmental changes and governance challenges.

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