

## STRATEGY FOR THE INSTITUTIONAL TRANSFORMATION OF REGIONAL RESEARCH AND INNOVATION IN STRENGTHENING DEVELOPMENT PLANNING IN NORTH MINAHASA REGENCY

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### ABSTRACT

The institutional transformation of regional research and innovation is mandated by the *Peraturan Presiden Nomor 78 Tahun 2021* concerning the National Research and Innovation Agency (*BRIN*) in the context of forming the Regional Research and Innovation Agency (*BRIDA*). This institutional transformation is a strategic step to strengthen evidence-based policy in regional development planning. In the aforementioned Presidential Regulation, local governments are required to establish *BRIDA*, which has two main duties: 1) Implementing policies for the coordination, synchronization, and control of research, development, assessment, and application, as well as invention and innovation in the region holistically and sustainably, and 2) Implementing the preparation of a master plan and roadmap for the advancement of science and technology in the region (*RIPJPID*) as a basis for regional development planning in all aspects of life guided by the values of Pancasila. North Minahasa Regency is a region that quickly undertook institutional transformation by establishing the Regional Research and Innovation Agency (*BRIDA*) through Regional Regulation (*Peraturan Daerah Nomor 9 Tahun 2022*), after receiving a letter of consideration from the National Research and Innovation Agency. This study will examine the factors that serve as drivers and challenges for *BRIDA* North Minahasa Regency in the institutional transformation process, as well as the strategies implemented by *BRIDA* North Minahasa Regency to ensure the institutional transformation process runs optimally. This research uses a qualitative method, employing interviews and questionnaire completion with respondents who consist of officials from 1) *BRIDA* North Minahasa Regency, 2) North Minahasa Regional Development Planning Agency, and 3) the Deputy for Regional Research and Innovation – *BRIN*, along with document review. The results show that the challenges in the institutional transformation process lie in four main aspects: leadership, institution/organizational structure, human resources, and budget. The strategies used by *BRIDA* North Minahasa Regency in the transformation process are: 1) Encouraging the Master Plan and Roadmap for the Advancement of Science and Technology in the Region (*RIPJPID*) as a mandatory document to be considered in the preparation of the North Minahasa Regency Regional Medium-Term Development Plan (*RPJMD*) and the Strategic Plan (*RENSTRA*) documents of regional apparatus through the establishment of a North Minahasa Regent's Regulation; 2) Promoting the implementation of evidence-based policy in the entire process of regional development planning and implementation by accelerating the internalization of evidence-based policy principles to other regional apparatus organizations; 3) Providing assistance to the community to

encourage a research and innovation culture to become a new culture in North Minahasa through breakthrough programs and activities that directly address community needs; and 4) Strengthening *BRIDA*'s role as an orchestrator in building the research and innovation ecosystem in North Minahasa Regency through cross-sector collaboration.

**Keywords:** *institutional transformation, research and innovation, collaboration, evidence-based policy*

## A. BACKGROUND

Sustainable development that is oriented towards community welfare and prioritizes innovation to ensure development outcomes align with contemporary advancements is the objective of implementing regional autonomy. In line with this, one of the government affairs that must be managed by the Local Government is the field of research and development, categorized as a supporting function of the Local Government. Research and innovation, or research and development, are conducted to support the Local Government in running its administration, primarily serving as a think tank, formulating necessary policies for the region, and creating innovations that can encourage the improved quality of local government performance (the *UU Nomor 23 Tahun 2014*).

In formulating policies related to research and innovation, the Local Government needs to ensure that the objectives of the research and innovation agenda promote efficiency, increase effectiveness, improve public services, prevent conflicts of interest, prioritize public welfare, maintain transparency, adhere to propriety values, and have accountable results (the *UU nomor 23 Tahun 2014*). To create large-scale innovation in local government administration, research and development activities must be strategically and coordinately enhanced. In line with this, the government mandated the establishment of an agency dedicated to research and innovation at the regional level, namely the Regional Research and Innovation Agency (*BRIDA*). The establishment of *BRIDA* is carried out by Provincial and Regency/City Local Governments in accordance with prevailing laws and regulations after obtaining consideration from the National Research and Innovation Agency (*BRIN*) (the *Peraturan Presiden Nomor 78 Tahun 2021*).

Several studies have shown that with the right strategies and policies, regional research and innovation are capable of driving the strengthening of local capacity and ability in regional development. For example, the study conducted by Philip Cooke, Mikel Gomez Uranga, and Goio Etxebarria from the Centre for Advanced Studies, University of Wales, UK, and the Dept. of Applied Economics, University of the Basque Country, Spain, which dissected the Regional Innovation System from an economic perspective, concluded by advocating for the strengthening of capacity at the regional level to encourage systemic learning and interactive innovation. Another study conducted by Sangwoo Shin from the Science and Policy Research Unit (SPRU), University of Sussex, Falmer, Brighton, UK, also showed a new bottom-up approach, which emphasizes a detailed analysis of local industry needs based on research and innovation at the

regional level.

In the operational structure, there are two options for the form of regional research and innovation institution that can be established by the Local Government: 1) The Regional Research and Innovation Agency (*BRIDA*), which is an autonomous agency responsible to the Regional Head through the Regional Secretary, and is led by a High-Ranking Official equivalent to Echelon II.a for the Provincial level, and a High-Ranking Official equivalent to Echelon II.b for the Regency/City level. 2) For a research and innovation institution integrated within the development planning function, a Regional Development Planning, Research, and Innovation Agency (*BAPPERIDA*) can be established, where the research and innovation function is carried out by a specific division led by an Administrator Position equivalent to Echelon III (the *Peraturan Mendagri Nomor 7 Tahun 2023*).

As of December 2024, *BRIN* (National Research and Innovation Agency) had issued 536 letters of technical consideration for the establishment of *BRIDA/BAPPERIDA* to local governments, detailing 32 letters for the Provincial level and 504 letters for the Regency/City level. Based on *BRIN*'s monitoring of the follow-up to these consideration letters, only 24 Provinces and 208 Regencies/Cities had established *BRIDA/BAPPERIDA* through Regional Regulations as of June 2025. This constitutes only 42.5% of the total Provinces, Regencies, and Cities in Indonesia. The failure to follow up the establishment of *BRIDA/BAPPERIDA* with a Regional Regulation is feared to cause legal uncertainty regarding the status of the institution responsible for local government affairs in research and development, both in terms of institutional status and the institution's own operations, such as work programs and budget. The Local Government is also indirectly failing to execute the mandate of the Law, which raises concerns that the function of local government administration will not run optimally.

The change in the structure of regional research and innovation institutions, as part of the institutional transformation of local government, is a process aimed at increasing bureaucratic efficiency, effectiveness, and accountability. However, this process often encounters obstacles stemming from various internal and external factors. On the internal side, inhibitors to government institutional transformation generally include resistance to change (Resistance to Change) caused by uncertainty and fear of change, attachment to old work methods, and a lack of motivation to change (*Lewin, 1951*). Organizations are also often trapped in old policy patterns that are difficult to alter due to path dependence. Factors contributing to this include high transition costs, reluctance to abandon long-established systems, and possible political interests that impede change (*Pierson, 2000*). Furthermore, this can be influenced by the organization's previously rigid hierarchical levels and excessive formality, which become major obstacles to institutional transformation (*Weber, 1947*).

The organizational culture within government agencies also affects how the institutional transformation process will proceed. Schein proposed that a strong organizational culture can impede institutional transformation if the existing values and norms do not support change. A conservative mindset that is difficult

to change, low awareness of the urgency of change, and a lack of trust in leadership to *BRING* about change are aspects of organizational culture that can hinder the transformation process (*Schein, 1985*).

From the external factors, DiMaggio and Powell proposed that government organizations often experience transformation barriers due to institutional pressure, which consists of coercive isomorphism (pressure from external regulation), normative isomorphism (pressure from professionalism and social norms), and mimetic isomorphism (the tendency to imitate the practices of other institutions without innovation) (*Di Maggio and Powell, 1983*). Differences in interest also become an external factor that can influence the transformation process. The difference in interests between the principal (the government or policymaker) and the agent (the bureaucrat or policy implementer) can cause obstacles in institutional transformation. These differing interests lead to imbalanced information between the policy makers and the policy implementers, as well as conflicts of interest over policies, causing policy implementation to run ineffectively (*Jensen and Meckling, 1976*).

It is necessary to conduct identification and analysis regarding the obstacles faced by Local Governments in establishing *BRIDA/BAPPERIDA* following the issuance of the letter of consideration for *BRIDA/BAPPERIDA* establishment. By identifying and analyzing the obstacles to *BRIDA/BAPPERIDA* institutional transformation, it is hoped that this study can serve as a basis for providing policy recommendations to relevant stakeholders to accelerate the formation of *BRIDA/BAPPERIDA* in accordance with applicable laws and regulations. In the long run, the accelerated formation of *BRIDA/BAPPERIDA* is expected to enable regions to resolve local development problems and leverage regional potential, based on evidence (evidence-based) and science (science-based), carried out collaboratively by multiple parties and led by *BRIDA/BAPPERIDA*.

North Minahasa Regency's Regional Research and Innovation Agency (*BRIDA*) is considered capable of capturing this phenomenon because it is one of the regions that most quickly undertook the institutional transformation of research and innovation. This process took a relatively short time, starting from when the local government received the letter of consideration from the National Research and Innovation Agency (*BRIN*) until the enactment of the Regional Regulation (*PERDA*) on the establishment of the Regional Research and Innovation Agency (*BRIDA*) of North Minahasa Regency.

The local government immediately followed up by enacting a Regional Regulation on the establishment of *BRIDA*. The initial phase of the institution's operations was then regulated through North Minahasa Regent's Regulation (the *Peraturan Bupati Minahasa Utara No. 39 Tahun 2022*). However, this regulation was short-lived, as it was replaced the following year by the newer North Minahasa Regent's Regulation (the *Peraturan Bupati Minahasa Utara No. 8 Tahun 2023*). This change was not purely administrative but indicated an adjustment to institutional needs. While the *Perbup No. 39 Tahun 2022* primarily served as the basis for *BRIDA*'s initial establishment, the *Perbup No. 8 Tahun 2023* arrived with a strengthening of its structural and functional aspects. This latest regulation reaffirms *BRIDA*'s position, clarifies the organizational structure, and

expands *BRIDA*'s scope in building coordination across regional apparatus organizations. Thus, North Minahasa's *BRIDA* did not just appear as a new institution resulting from the separation from *Bappeda* (Regional Development Planning Agency), but was truly positioned as the driving force for research and innovation that is integrated with regional development planning.

The speed of this transformation makes North Minahasa a compelling example for understanding the dynamics of research and innovation institutions at the regional level. Furthermore, North Minahasa's experience can provide important lessons regarding the factors driving the success of accelerated transformation, as well as the challenges faced in ensuring that *BRIDA* truly functions as the engine of research and innovation for evidence-based regional development. Thus, North Minahasa is relevant not only as an object for empirical study but also as a strategic case study in formulating a model for strengthening research and innovation institutions in other regions across Indonesia.

Based on the identification of the issues presented, the research questions for this study are (1) What are the factors that pose challenges in the institutional transformation process of regional research and innovation in North Minahasa Regency; (2) What is the strategy for optimizing the institutional transformation of regional research and innovation in North Minahasa Regency?

## **B. METHOD**

The research was conducted in North Minahasa Regency, North Sulawesi Province. North Minahasa Regency was selected as the research locus because it is one of the regions that entered the initial period of the institutional transformation process for regional research and innovation, starting from the receipt of the letter of consideration from *BRIN* (National Research and Innovation Agency) up to the issuance of related Regional Regulation (the *PERDA Nomor 9 Tahun 2022*) concerning the Second Amendment to older Regional Regulation (the *PERDA Nomor 5 Tahun 2016*) concerning the Establishment and Organizational Structure of Regional Apparatus of North Minahasa Regency.

The research method used is descriptive qualitative. The study was conducted by collecting primary and secondary data obtained through interviews and document review. Primary data collection through interviews involved 4 (four) respondents from *BRIDA* North Minahasa Regency (consisting of structural and functional officials), 4 (four) individuals from *BAPPEDA* North Minahasa Regency (consisting of structural and functional officials), and 4 (four) Regional Coordinators from the Deputy for Regional Research and Innovation – *BRIN*. The selection of respondents was made based on the needs required to understand the research problem. Secondary data was obtained from already available data in the form of documents, such as literature studies and government documents.

This research employs a qualitative data analysis technique. The process of qualitative data analysis presents a challenge due to the limited methodological development in this domain. Data analysis involves the systematic exploration and organization of data obtained from interviews, documentation, and other relevant

sources. The goal of this process is to facilitate the understanding and conversion of the collected data into meaningful information that can be utilized for the research findings. The qualitative method in this study largely rests upon elements that are exploratory, revelatory, and inductive in thought.

To ensure the truthfulness, reliability, and consistency of the data in this study, data validation was performed using the Triangulation method. This method is carried out by comparing and verifying data from various sources, methods, or perspectives to enhance the credibility of the research results.

### C. ANALYSIS AND DISCUSSION

The institutional transformation of regional research and innovation is a national ideal born from the desire to solve regional problems through a research-based approach. The Regional Research and Innovation Agency (*BRIDA*) is a new entity. Although *BRIDA* units are directly under the Local Government, their establishment and programs are coordinated with the National Research and Innovation Agency (*BRIN*). The expectation is that *BRIDA* will be able to strengthen research governance, promote evidence-based policy, and accelerate the innovation ecosystem in the regions. However, in reality, this process has not proceeded smoothly.

Based on the interview results with the Directorate of Regional Research and Innovation (DRID) *BRIN* and *BRIDA* Minahasa Utara, including *BAPPEDA* Minahasa Utara, which directly experienced the institutional transition towards an independent *BRIDA*, several findings regarding the optimization of *BRIDA*'s institutional transformation emerged. These findings do not stand alone but are interconnected within four main aspects: leadership, institutional structure, human resources, and budget.

This section will systematically discuss these findings across four subsections, before subsequently formulating transformation strategies that can be adopted to improve the institutional process of research and innovation at the regional level.

#### **Factors Affecting the Institutional Transformation Process**

##### **Leadership Aspect**

Leadership always plays a key role in every institutional transformation process. The role of the Regional Head, who holds a political position at both the provincial and regency/city levels, is inseparable from the evolving regional political dynamics. Political factors, especially concerning the leadership of the regional head and legislative support, are the primary determinants of the success or failure of this process. The Regional Head has full authority in determining policy direction through Regional Regulations (*PERDA*), Regional Head Regulations (*Perkada*), or administrative decisions, while the Regional House of Representatives (*DPRD*) acts as the legislative partner providing legal legitimacy for institutional changes. Thus, the leadership aspect is not just a managerial matter but a political issue that determines how far research and innovation can be positioned as a priority development agenda.

Based on the data obtained from the interviews with the respondents, several fundamental challenges exist in the institutional transformation process of

research and innovation.

Regional head leadership holds a key role in determining the direction of institutional transformation for research and innovation in the region. Some regional heads demonstrate a strong commitment by providing concrete support through policies, directives, and instructions to regional apparatus regarding the establishment of *BRIDA*. However, not a few regional heads treat research and innovation merely as a formality without positioning it as a development priority.

The integration of the regional head's vision, mission, and priority programs into planning documents, such as the *RIPJPID* (Master Plan and Roadmap for the Advancement of Science and Technology in the Region) and *RPJMD* (Regional Medium-Term Development Plan), becomes a challenge in itself. Some regions successfully incorporate research and innovation as the driving force for regional development, while others only understand research and innovation as a potential without concrete implementation in regional development planning. The role of the Regional House of Representatives (DPRD) is no less crucial, as the *PERDA* (Regional Regulation) that legally mandates *BRIDA*'s establishment requires *DPRD* support. The political process, with all its dynamics, often takes a considerable amount of time and poses a distinct challenge in the process of realizing institutional transformation.

Furthermore, other structural challenges, such as budget limitations, a lack of competent human resources, inadequate infrastructure, and cultural barriers like bureaucratic resistance and the perception that research is only an additional burden, further slow down the transformation process.

#### **North Minahasa Regency**

In North Minahasa Regency, regional head leadership plays a central role in accelerating the institutional transformation of regional research and innovation. The North Minahasa Regent is cited as actively promoting research and innovation as the driving force for regional development through policies, budget support, and cross-sector collaboration. This is reflected in a number of concrete steps, such as the preparation of the *RIPJPID* (Master Plan and Roadmap for the Advancement of Science and Technology in the Region), the improvement of the Regional Competitiveness Index (RCI), the increase in the Regional Innovation Index (IID), establishing partnerships with *BRIN*, and various community-based programs utilizing research and innovation, such as mentorship programs and free *HaKI* (Intellectual Property Rights) registration for MSMEs.

Nevertheless, this support is still limited in scope and not yet entirely systemic. From a regulatory standpoint, *BRIDA*'s establishment also faces challenges in its transformation process, particularly in alignment with the *DPRD* (Regional House of Representatives) and other regional apparatus organizations. Structural limitations, such as a lack of research human resources, budget constraints, and inadequate supporting infrastructure, also pose obstacles. Additionally, bureaucratic cultural challenges, such as bureaucratic resistance and a weak research culture, further slow down the institutional optimization of *BRIDA*. Another significant challenge is the uncertainty resulting from rapid changes in the strategic environment, which demands that regional leaders possess visionary and more adaptive leadership.

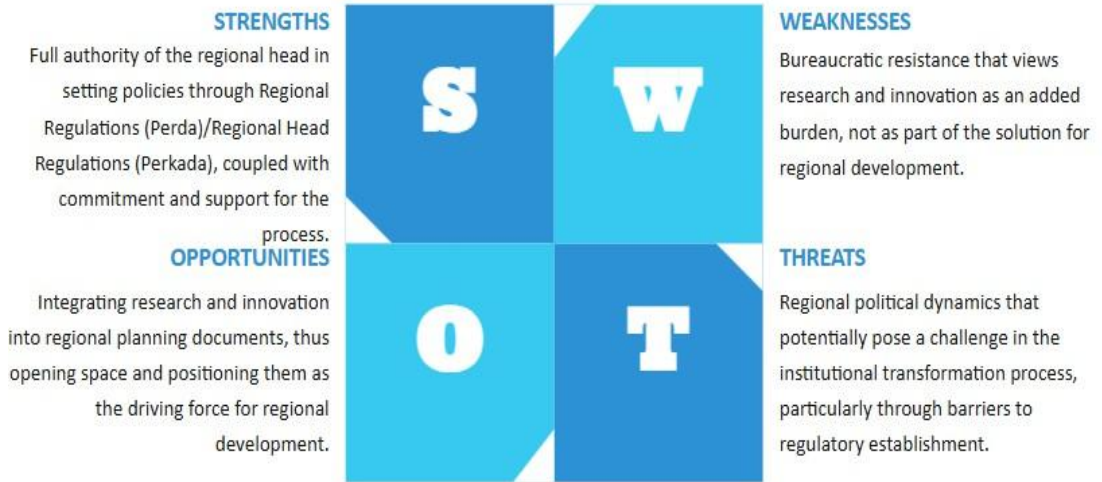


Figure 1. Leadership Aspect in SWOT Analysis

The leadership aspect in the institutional transformation of research and innovation shows strengths in the form of the regional head's full authority to set policies through Regional Regulations (*PERDA*)/Regional Head Regulations (*Perkada*), as well as a concrete commitment, as demonstrated by the North Minahasa Regent through policy, budget, and cross-sector collaboration. Weaknesses lie in the still-low commitment of some regional heads who place research only as a formality, budget limitations, a lack of human resources (HR), and bureaucratic resistance that views research as an added burden. From the perspective of opportunities, integrating research into regional planning documents such as the *RIPJPID* and *RPJMD* opens space to position research as the driving force for evidence-based development, as practiced in North Minahasa with the improvement of the Regional Innovation Index (IID), partnership with *BRIN*, and free HaKI facilitation. Meanwhile, threats come from political and legislative dynamics that can slow down *BRIDA*'s establishment, regulatory obstacles that require a long political process, and uncertainty due to technological changes that demand visionary leadership amid still-limited bureaucratic capacity.

### **Institutional Aspect**

The institutional structure is the most tangible dimension of regional research and innovation transformation, as it determines the organizational structure, governance, and the institution's role within the innovation ecosystem. Several institutional barriers can also be identified.

From an institutional perspective, the national transformation of regional research and innovation still faces significant challenges. First, the institutional structure remains diverse across regions and lacks uniformity. Most regions still merge the research and innovation function into the development planning function, adopting the *BAPPERIDA* (Regional Development Planning, Research, and Innovation Agency) nomenclature. Only a few regions have established an independent *BRIDA* (Regional Research and Innovation Agency), while some regions have not formed a *BRIDA/BAPPERIDA* at all. This condition indicates a gap in the implementation of national policy. Second, there are

structural and bureaucratic challenges. Complicated bureaucracy, resistance to changes in structural positions, and regulations requiring the discussion of institutional Regional Regulations (*PERDA*) to be conducted simultaneously with other regional apparatus organizations potentially slow down the *BRIDA* institutional transformation process. Third, institutional change is urgent but uneven. The transformation from *BAPPEDA* (Regional Development Planning Agency)/*BALITBANG* (Regional Research and Development Agency) to *BRIDA/BAPPERIDA* is necessary so that research does not merely cling to planning but becomes the driving force for regional development. This change also demands a shift from structural to functional positions and the strengthening of human resources capacity to ensure the institution is lean in structure but rich in function.

**North Minahasa Regency**

In North Minahasa Regency, the institutional formation process is relatively more advanced compared to many other regions. *BRIDA* has been established as an independent regional apparatus organization, separated from *BAPPEDA*, although this separation brings new challenges. *BRIDA* must now build its institutional legitimacy and a distinct organizational identity from *BAPPEDA*. From a structural and bureaucratic perspective, the main obstacles are resource limitations, including budget, infrastructure, and a lack of expert HR (Human Resources). Cross-regional apparatus coordination is also not yet optimal, meaning research and innovation programs to produce evidence-based policies are not fully integrated into development planning. Other challenges arise from political intervention and a lack of community participation, preventing *BRIDA*'s role from being maximally executed. The most urgent institutional transformation for *BRIDA* is to strengthen its authority and resources, including restructuring ex-Research and Development HR to increase competence. Furthermore, coordination with other regional apparatus organizations must be strengthened so that research and innovation truly become the strategic foundation for regional development.

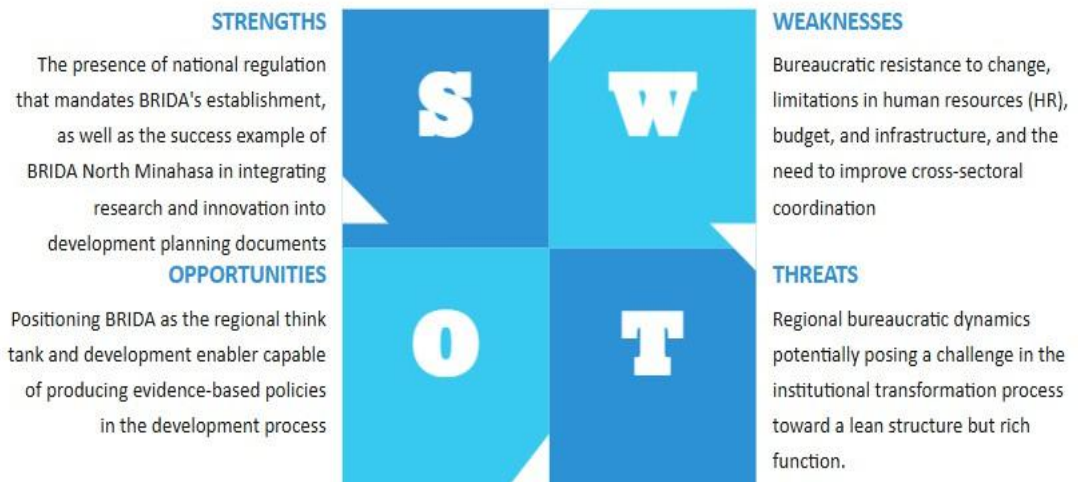


Figure 2. Institutional Aspect in SWOT Analysis

The institutional aspect in the transformation of regional research and innovation possesses strengths in the form of national regulation that encourages the establishment of *BRIDA* (Regional Research and Innovation Agency), as well as concrete examples of regional success, such as North Minahasa, which already has an independent *BRIDA* and has begun to integrate research into development planning. Weaknesses lie in the institutional structure not yet being uniform across regions (some regions still use the *BAPPERIDA* nomenclature), bureaucratic resistance to change, limitations in human resources (HR), budget, and infrastructure, and weak cross-regional apparatus coordination. From the perspective of opportunities, institutional transformation opens the door to positioning *BRIDA* as an institution that is not only administrative but also a think tank capable of producing evidence-based policy, strengthening institutional business processes, and expanding public participation in innovation. Meanwhile, threats emerge from political intervention, implementation gaps between regions, and the slow process of deliberating institutional Regional Regulations (*PERDA*), which are often tied to local political agendas, potentially hindering *BRIDA*'s legitimacy as a strategic institution in the regional innovation ecosystem.

#### **Human Resources Aspect**

The institutional transformation of regional research and innovation cannot be separated from the readiness and capacity of its human resources (HR). HR serves as the main engine that will execute research functions, manage innovation, and bridge study results with development policy needs. However, both at the national level and at the specific regional level, several fundamental challenges exist.

The limited quantity and competence of HR remains the main challenge in strengthening research and innovation in the regions. Most regencies/cities face a shortage of personnel who genuinely possess capacity in the research field, unlike some regions, such as those in Java, where HR conditions are relatively better. Many apparatus transition from structural to functional researcher positions without being accustomed to the culture of research, innovation, or scientific publication. This situation makes it difficult for research productivity to develop optimally because research requires extensive and cross-sector collaboration.

Capacity development efforts through training, internships, study scholarships, and collaboration with higher education institutions are indeed carried out, but their distribution is uneven. The technical guidance provided by *BRIN* to all *BRIDA/BAPPERIDA* is quite helpful for regions in increasing employee capacity, but it is insufficient to address the need for continuous development and the application of a more established merit system.

The issues of incentives and talent management also heavily influence the dynamics of regional research. A lack of appreciation, weak support, and a poorly functioning merit system discourage many researchers from improving their competence. The retention of innovative talent is difficult to maintain because many highly capable individuals seek clearer career opportunities outside the regional research environment.

On the other hand, the work culture and infrastructure availability are still inadequate. Research is often viewed merely as an additional burden, not as a

crucial instrument for development. Limitations in working tools, internet access, and minimal cross-sector support also hinder the integration of research findings into regional development policies.

**North Minahasa Regency**

A similar condition is also evident in North Minahasa Regency, where the number of research HR (Human Resources) is still very limited and their competence does not yet match the needs. The absence of adequate technically capable experts makes it difficult to manage the research burden maximally. Various capacity building programs such as technical guidance, workshops, and innovation competitions have been implemented. However, these activities are still sporadic and are often constrained by the HR capacity building budget policy managed by the Personnel Agency, instead of being entirely managed by *BRIDA*. Consequently, capacity strengthening has not been effective and sustainable.

The incentive aspect remains a major obstacle: low appreciation and the absence of a clear career guarantee make high-competence HR difficult to retain, thereby limiting opportunities for self-development and resulting in decreased motivation for research and innovation. Furthermore, the research culture has not developed well. Research activities are still viewed as an additional task, not as an essential part of regional development. Infrastructure limitations such as working facilities and internet access further exacerbate the condition, coupled with minimal integration of research results with regional policy due to a lack of cross-sector support and community participation.

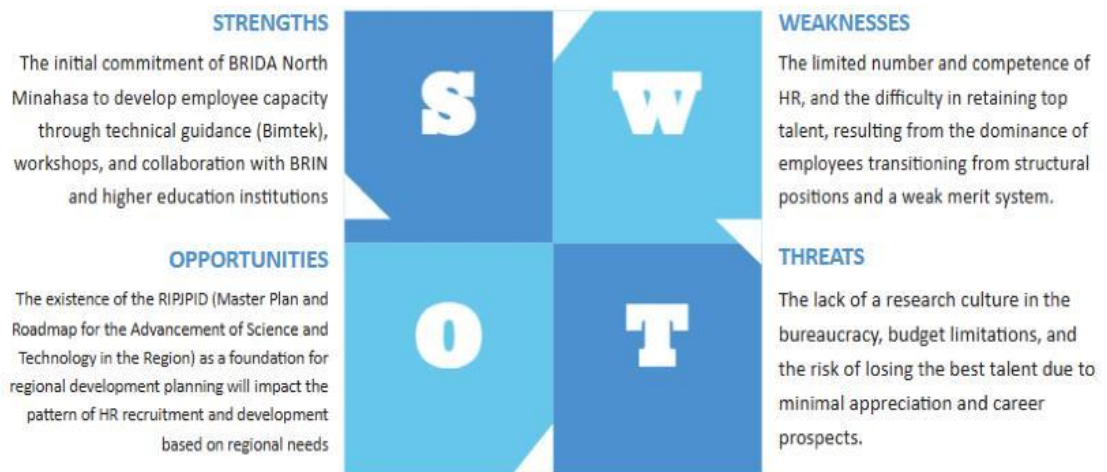


Figure 3. Human Resources Aspect in SWOT Analysis

The Human Resources (HR) aspect is a key determinant of the success of institutional transformation for regional research and innovation. The inherent strengths include the region's initial commitment to developing employee capacity through technical guidance (*Bimtek*), workshops, and collaboration with *BRIN* and higher education institutions, although this is still limited. However, the weaknesses are fundamental: a minimal number of HR, competence that does not yet align with needs, the dominance of employees transitioning from structural

positions, and a weak incentive and merit system that makes it difficult to retain talent. On the other hand, the momentum of institutional transformation toward *BRIDA* and the presence of the *RIPJPID* (Master Plan and Roadmap for the Advancement of Science and Technology in the Region) open up the opportunity to strengthen the role of HR based on regional needs. Meanwhile, the faced threats are the low research culture in the bureaucracy, budget limitations, and the risk of losing the best talent due to minimal appreciation and career prospects, as is genuinely felt in North Minahasa.

### **Budget Aspect**

The budget aspect is one of the critical points in the institutional transformation of regional research and innovation. Without adequate and sustainable funding support, the research institution will operate merely administratively without producing genuine breakthroughs. Based on the interview results, both the DRID (Directorate of Regional Research and Innovation) respondents and *BRIDA* North Minahasa highlighted several challenges related to the budget. The funding for research and innovation at the national level still faces significant challenges. The budget allocated by regions is generally not yet optimal, and the funding pattern tends to be inflexible. The focus is often directed more towards the aspect of administrative reporting than toward the essence of the research itself. The Regional Development Planning Forum (*MUSRENBANGDA*) mechanism, facilitated by *BAPPEDA*, often results in research and innovation rarely being placed as the primary priority of regional development.

Besides budget limitations, specific support for research and innovation programs is also very limited. Only a few regions have begun to initiate competitive funding schemes, such as those implemented by Riau Province. However, in most regions, the research budget still relies on minimal and inflexible routine Regional Budget (*APBD*) allocations. Consequently, research activities are often considered merely supplementary, not a primary instrument in the development process.

Another challenge lies in the minimal utilization of alternative funding sources. Various options are available, ranging from regional loans, bonds, government-business cooperation, grants, to industry/private support utilizing the super tax deduction prepared by the government. However, these opportunities are rarely seriously pursued to support research activities. Only a small fraction of regions successfully access competitive funding through the National Budget (*APBN*) or establish cooperation with national and international research institutions.

### **North Minahasa Regency**

The situation in North Minahasa Regency mirrors this national phenomenon. The allocation for research budgets is still severely limited and has not become a development priority. The available funds are scattered across various regional apparatus organizations, while strategic program proposals from *BRIDA* have not received adequate fiscal support. The policy on expenditure efficiency through Presidential Instruction (*INPRES*) Number 1 of 2025 further narrows the regional fiscal space, making it increasingly difficult for research and innovation to receive special attention. Existing budget support is mostly directed

towards basic operational needs, rather than substantive research activities. This means research in North Minahasa Regency has not truly become an integral part of the regional development process.

Despite this condition, *BRIDA* North Minahasa has begun moving forward by preparing the *RIPJPID* (Master Plan and Roadmap for the Advancement of Science and Technology in the Region) as an integral part of regional development planning. Furthermore, initial steps to seek alternative funding sources have started. Collaboration with *BRIN* has been established through the signing of a Synergy Memorandum of Understanding between the North Minahasa Regent and the Deputy for Regional Research and Innovation *BRIN*. This agreement opens opportunities for strengthening research through support outside the Regional Budget (*APBD*). However, this scheme is still limited and has not yet become a sustainable model. For research and innovation to genuinely support regional development, *BRIDA* North Minahasa needs to expand its funding network while strengthening the sustainability of the collaborative programs it has initiated.

The budget aspect in the institutional transformation of regional research and innovation presents complex dynamics. The emerging strengths include the initiative in several regions, including North Minahasa, to begin proposing strategic research programs through *BRIDA* and establishing funding collaborations with *BRIN* via a Synergy Memorandum of Understanding (NKS). However, the weaknesses are quite dominant, including the minimal research budget, a greater emphasis on administrative aspects rather than research substance, and the budget remaining scattered across various *OPD* (Regional Apparatus Organizations), leading to a lack of focus. Opportunities are open through alternative schemes such as grants, *KPBU* (Government-Business Cooperation), bonds, and competitive access to the *APBN* (National Budget), which if utilized, could strengthen the research funding ecosystem. The main threats arise from expenditure efficiency through Presidential Instruction (*Inpres*) No. 1 of 2025, which increasingly narrows the fiscal space, and the low political priority for research, making its allocation susceptible to reduction.

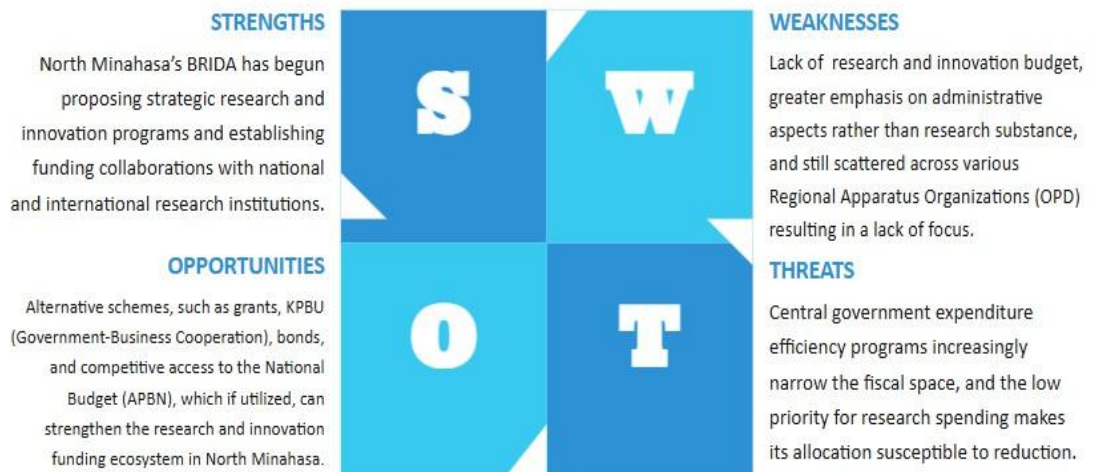


Figure 4. Budget Aspect in SWOT Analysis

### **Institutional Transformation Strategy**

The institutional transformation of regional research and innovation cannot be viewed solely as a change in administrative structure, but rather as a process that is intertwined with political, institutional, and technocratic aspects. This process demands a clear strategy, consistent implementation, and a mechanism for continuous evaluation. Based on the experience of *BRIN*, *BRIDA* North Minahasa, and *BAPPEDA* North Minahasa, there is a clear shared direction that research and innovation must be positioned as the primary basis for regional development planning, although each actor faces different challenges. The transformation strategy must therefore be built not only to address the institutional aspect but also bureaucratic mindset, budgeting mechanisms, and the institution's role within the regional development ecosystem.

The formulation of a regional research and innovation strategy, as emphasized by *BRIN*, is carried out through identifying strategic issues, analyzing the internal and external environment, determining success factors, and formulating the strategy itself in the form of the Master Plan and Roadmap for Regional Research and Innovation (*RIPJPID*) document. *BRIDA* North Minahasa confirms this approach by stressing the importance of synchronization between the *RIPJPID* and the Regional Medium-Term Development Plan (*RPJMD*), the Regional Government Work Plan (*RKPD*), and the *RENSTRA* (Strategic Plan) of Regional Apparatus Organizations (*OPD*). The process of formulating the strategy is not conducted behind closed doors; instead, it involves regional apparatus desks, Focus Group Discussions (FGD), and public dissemination to ensure the resulting document is not only legal-formal but also relevant to local needs. From the perspective of *BAPPEDA* North Minahasa, the presence of *BRIDA* clearly helps strengthen regional development planning. *BRIDA* provides substantial input based on evidence-based policy during the *RPJMD* formulation, ensuring that the resulting strategies no longer rely on assumptions but on in-depth studies of existing potential and problems.

Essentially, the main strategy of this transformation is to strengthen *BRIDA*'s position as the driving force for research and innovation in the region. *BRIDA* is positioned not only as an administrative unit but also as an enabler, connecting various actors involved in research and innovation, ranging from regional apparatus organizations, academics, the private sector, to civil society. Furthermore, *BRIDA* must also develop into a regional think tank that provides critical analysis, data-based recommendations, and acts as a strategic partner for the regional head in formulating public policy. In this framework, evidence-based policy must be the main principle, so that every regional policy no longer stems merely from assumptions but is supported by robust research data. Within this evidence-based policy framework, the *RIPJPID* (Master Plan and Roadmap for Regional Research and Innovation) is then present as a regional strategic document with legal and technocratic power, serving as a long-term guide for research and innovation-based development.

The emphasis on evidence-based policy in the strategy means that without a strong evidential foundation, policy will merely be a momentary response that is

difficult to sustain (*Head, 2010*). This underscores the importance of the reciprocal relationship between the government's need for reliable information and the research capacity capable of producing relevant evidence for decision-making. Therefore, regions must have an integrated research and innovation document as the basis for sustainable development planning. The *RIPJPID* (Master Plan and Roadmap for Regional Research and Innovation) here is not just a normative document but a technocratic instrument that ensures regional development proceeds with a consistent, measurable, and periodically evaluable direction.

In this matter, multi-stakeholder involvement is a crucial key. *BRIN* (National Research and Innovation Agency) asserts that academics, the business sector, the community, and *BRIN* need to be involved alongside regional apparatus organizations. *BRIDA* North Minahasa adds that the DPRD (Regional House of Representatives) and local communities also play a role in providing legitimacy and contextual perspectives. From the perspective of *BAPPEDA* North Minahasa, the involvement of *BRIDA* has enriched the quality of development planning documents with both conceptual and operational input. This collaborative pattern demonstrates that a participatory research and innovation strategy creates a sense of ownership among stakeholders while increasing the likelihood of effective implementation (*PERBRIN Nomor 5 Tahun 2023*).

However, the implementation of the research and innovation strategy faces considerable obstacles. DRID (Directorate of Regional Research and Innovation) highlights limitations in data and information as a basic input for strategy formulation, limited HR (Human Resources) capacity, and the difficulty of translating strategy into concrete action. *BRIDA* North Minahasa adds barriers such as budget constraints, weak coordination among regional apparatus organizations, and a low research culture among both the bureaucracy and the community. Meanwhile, *BAPPEDA* North Minahasa emphasizes the need to enhance *BRIDA*'s role in ensuring that every high-impact development program is thoroughly studied beforehand. These obstacles show that institutional transformation concerns not only the issue of institutional design but also involves data infrastructure, organizational culture, resource availability, and consistent political support.

Despite these challenges, several strategic implementations have been carried out. *BRIDA* (Regional Research and Innovation Agency) exemplifies collaborative research with *BRIN* (National Research and Innovation Agency) and higher education institutions, as well as regional innovation competitions. *BRIDA* North Minahasa practices a more applied strategy, such as facilitating free *HaKI* (Intellectual Property Rights) registration for MSMEs, innovation training and mentorship, and the development of local superior products like *Pancuran Tumatenden* through regional budgets and Corporate Social Responsibility (CSR). From the perspective of *BAPPEDA* North Minahasa, *BRIDA*'s contribution is evident in the form of evidence-based policy studies to strengthen the *RPJMD* (Regional Medium-Term Development Plan), annual thematic innovation competitions, and technical guidance and mentorship for MSMEs. These three perspectives demonstrate that the implementation of the research strategy does not

solely focus on document products but also produces tangible services felt by both regional apparatus organizations and the community.

Monitoring and evaluation are crucial instruments for guaranteeing the consistency and effectiveness of strategy implementation. Through monitoring and evaluation, the planning and implementation process can be continuously guided by reliable evidence while simultaneously strengthening the accountability and transparency of governance (*OECD, 2025*). DRID (Directorate of Regional Research and Innovation) highlights the need for clear Key Performance Indicators (KPIs), routine coordination forums, and periodic progress reports.

*BRIDA* North Minahasa is developing an annual evaluation mechanism that is not only conducted internally but also involves academics as independent parties. *BAPPEDA* North Minahasa feels that *BRIDA*'s input in the monitoring and evaluation of regional development programs has helped strengthen the focus on achieving *RPJMD* (Regional Medium-Term Development Plan) targets, while also providing an empirical basis for policy revision or adjustment. Thus, evaluation functions not only as a control tool but also as a means of collective learning for the local government in refining the direction of development policy. Looking ahead, all three respondents share complementary expectations. *BRIN* (National Research and Innovation Agency) emphasizes the necessity of positioning the research and innovation institution as a center of excellence capable of formulating and overseeing a research agenda based on local needs.

*BRIDA* North Minahasa hopes the institution will be structurally strengthened with adequate budget support and competent human resources, enabling it to play its role as the regional think tank. *BAPPEDA* North Minahasa adds that the biggest benefit of *BRIDA*'s presence is its contribution to making the *RPJMD* (Regional Medium-Term Development Plan) document more focused, sharp, and realistic. All these hopes culminate in one major idea: that research and innovation must become the foundation of development policy, not merely an administrative supplement.

To this end, respondents from *BRIN* (National Research and Innovation Agency) emphasize the importance of synchronizing regional policies with the *RPJMD* (Regional Medium-Term Development Plan), increasing HR (Human Resources) capacity, and providing intensive facilitation from *BRIN* to ensure regions have adequate mentorship. *BRIDA* North Minahasa stresses the need for active collaboration with *BRIN*, enhancing an inclusive innovation ecosystem, and stronger budget advocacy for research, even proposing a minimal allocation of 1% of the APBD (Regional Budget) for research and innovation. *BAPPEDA* North Minahasa underscores the necessity for every high-impact program to be thoroughly studied by *BRIDA* beforehand, as well as the need for increased intensity in technical guidance and mentorship for MSMEs.

Another role that *BRIDA* (Regional Research and Innovation Agency) can assume in this transformation is to strengthen the coordination and synchronization of all research, development, assessment, and application (*LITBANGJIRAP*), invention, and innovation activities in the region, in accordance with Presidential Regulation (the *PERPRES Nomor 78 Tahun 2021*). This function was absent in the previous institution (*BALITBANGDA* - Regional Research and

Development Agency), making it a distinguishing feature and an added value of *BRIDA*. With the mandate for cross-actor coordination, *BRIDA* can ensure that research conducted by various parties—including the local government, higher education institutions, the business sector, and the community—is complementary, avoids duplication, and is genuinely directed toward addressing strategic regional development issues.

This entire transformation strategy is highly relevant for North Minahasa Regency. *BRIDA* North Minahasa needs to position itself as a regional center of excellence capable of driving a paradigm shift in development—from merely executing administrative tasks to a development paradigm based on research and innovation. Political support from the regional head and the *DPRD* (Regional House of Representatives) must be directed toward strengthening *BRIDA*'s capacity, both in terms of budget and human resources. Furthermore, *BAPPEDA* North Minahasa and other regional apparatus organizations need to utilize the *RIPJPID* (Master Plan and Roadmap for Regional Research and Innovation) as the main reference in formulating programs and activities. Consequently, every development policy in North Minahasa will be connected to a large, evidence-based research and innovation framework.

#### **D. CLOSING**

##### **Conclusion**

By consolidating the perspectives of *BRIN* (National Research and Innovation Agency), *BRIDA* North Minahasa (Regional Research and Innovation Agency), and *BAPPEDA* North Minahasa (Regional Development Planning Agency), the strategy for the institutional transformation of regional research and innovation can be formulated more comprehensively. 1] This transformation must start with visionary, adaptive leadership that takes concrete action to drive research and innovation as the engine of regional development. 2] This must be supported by a solid institutional structure capable of formulating development strategies that are participatory and synchronized with national policy. 3] Competent and adequate human resources (HR) are necessary to ensure and oversee that the implementation of planned programs and activities is executed correctly. 4] Clear budget allocation support is essential to properly implement programs and activities that directly address community needs and regional development, complemented by a sustainable evaluation mechanism.

Ultimately, the institutional transformation of research and innovation will only succeed if research and innovation are positioned as the primary instrument in formulating regional development policy, making the region more adaptive to challenges, while simultaneously being able to create sustainable innovative solutions for the community.

##### **Policy Recommendations**

Based on the data analysis and conclusions obtained, the results of this study provide policy recommendations to the *BRIDA* (Regional Research and Innovation Agency) of North Minahasa Regency to undertake the following steps:

1. Promote the *RIPJPID* (Master Plan and Roadmap for Regional Research and Innovation) as a mandatory document to be referenced in the preparation of the *RPJMD* (Regional Medium-Term Development Plan), *RKPD* (Regional

Government Work Plan), and Strategic Plans (*RENSTRA*) of regional apparatus organizations through the enactment of a North Minahasa Regent's Regulation, thereby providing leverage for regional apparatus organizations to adhere to the *RIPJPID*'s substance.

2. Encourage the implementation of evidence-based policy throughout the entire regional development planning process by accelerating the internalization of evidence-based policy principles to all regional apparatus organizations in North Minahasa Regency.
3. Provide mentorship to the community to foster a research and innovation culture as a new culture in North Minahasa through breakthrough programs and activities that directly address community needs, thus making the community more productive.
4. Strengthen *BRIDA*'s role as an orchestrator in building the regional research and innovation ecosystem in North Minahasa Regency through cross-sector collaboration with all research and innovation entities in North Minahasa, including higher education institutions.

With this strategy, *BRIDA* North Minahasa not only executes the institutional transformation flow for research and innovation correctly and properly, but also utilizes it to create a model for regional development that is innovative, inclusive, and sustainable.

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