

# The Role of Government and Financial Sector on Economic Growth: Case Study in Food Security

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**Abstract.** Regional development aims to improve the welfare and standard of living of the community to achieve regional independence and equitable progress throughout the region. For this reason, it is necessary to mitigate the food crisis in a resilient and sustainable manner to anticipate this condition. This research examines how stakeholders, especially the financial sector in North Sumatra, contribute to efforts to increase food security. Specifically, this research analyzes the role of the central government, regional government, regional authorities, financial industry, individuals/private parties and others in carrying out their duties and responsibilities for creating food sovereignty. The research focuses on a qualitative approach that analyzes the influence and ability of financial access in increasing economic growth. The qualitative methods of analysis by using NVIVO, prove the identification of the basic sector, namely indicators of the success of the real sector and the financial sector which can synergy to achieve the goal of food sovereignty in question. Regional stakeholders are obliged to commit, including building human resources, integrated systems and policies to prevent the severe impact of the food crisis on regional communities' lives.

Keywords: financial ecosystem, food security, food sovereignty.

#### 1 Introduction

Energy security and food security are two sectors that dilever vital input to the entire national product process and can result in an imbalance between the demand and supply sides within the medium and long term (Juhro, 2015). Food is of course a fundamental need for humans that must be met each day and encompasses a vital role in the life of a nation. The United Nations (UN) together with all countries in the world, including Indonesia, are currently proceeding to strive to realize sustainable development or commonly known as Sustainable Development Goals (SDG's). Food security is one of them, since not everyone has easy access to food, and this is critical to pay attention to so that people can live healthy, active and productive lives in a sustainable way. Population growth will increase food needs, this should be considered in preventing food insecurity since it can have an affect on several areas, including security, health, finance, education and other areas. As an essential basic need for every human being, the Indonesian Government has included food security and sovereignty within the 2022-2024 National Development Agenda, by prioritizing programs to extend the accessibility, access and quality of food consumption (ekon.go.id, 2021). The fiscal policy taken by the Government through the 2022

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APBN with the theme Accelerating Economic Recovery and Structural Reform, also includes food security as a priority development agenda and encouraging economic growth (Limanseto, 2021).

The imbalance that happens within the food sector, for example based on Indonesia's population in 2023 which has reached 277 million people and is predicted to increase at a relatively high population growth rate (1.13% per year), will have an affect on the trend of increasing food consumption in this nation. However, the limited progress in food production in Indonesia is still not able to keep up with the increase in consumption. The import policy emerged as a short-term arrangement due to the dissimilarity between production and consumption of the food balance of a number of essential and vital commodities. The financial services sector, as one of the sectors that has the potential to have a significant affect on regional and national economic growth, also plays an important role in impelling regional economic expansion, including the banking industry, is often considered the heart and driving force of a country's economy, where as an intermediary institution in collecting and channeling public funds or financing activities within the economic sector, it helps strengthen the nation's economic structure, banking institutions are the center of the financial system in every country. Banking, which acts as a transmission institution, must of course be able to control the sum and flow of money circulating in the economy (such as currency by the central bank and demand deposits by commercial banks), so banking can influence the majority of money in circulation (money supply), which can be utilized as a means of exchange (medium of exchange) or means of payment (unit of account). For this reason, banking is considered important in supporting economic progress and society's quality of life.

This research was conducted on a multi-dimensional topic and focused on food security in the North Sumatra region which has various impacts depending on the specific context, including the influence of the financial ecosystem, economic conditions and other factors. Shock factors also influence the inflation rate, which is one of the reasons for consideration in this research, as well as paying attention to the implementation of collaboration and coordination throughout the ecosystem and stakeholders through integrated macroeconomic policies that are needed to achieve the goal of controlling inflation.

North Sumatra Province can construct a solid food security ecosystem through a combination of favorable geographic contours, a developing agricultural culture, and proactive banking involvement in providing financial and technical support. These coordinated efforts not only increase food production but also improve local social and economic stability. North Sumatra has a geographical contour with diverse topography that includes high mountains and plains. Fertile land ideal for horticultural production can be found in mountainous areas such as Tapanuli and Karo. Rice, coffee, rubber, palm oil and other tropical plants flourish in regions with high rainfall and tropical climates. Abundance of natural resources, such as water, fertile land, and a climate that bolsters agriculture and fisheries. The local wisdom of the people of North Sumatra through culture in the field of agriculture and management of their native resources (farmers) implies that conventional agricultural practices and the habit of cooperation are still often carried out. To decrease the risk of crop failure and maintain the stability of food production, people often vary crop planting. The agricultural and plantation sectors play a huge part in the economy of agrarian regions. Apart from providing food, this economic activity provides employment opportunities for the surrounding community.

The following are observations made on the role of the financial ecosystem which significantly impacts a region's food sovereignty, some of which have been discussed in previous literature or journals, as follows;

- i. Access to capital to financial services such as loans or credit can provide farmers and agricultural business actors to increase food production,
- ii. Financial instruments such as agricultural insurance can help protect farmers from the risk of crop loss due to natural disasters or other factors thereby increasing their strength to market fluctuations,
- iii. Investment in financial services to finance modern agricultural technology infrastructure and preparing for farmers that can increase productivity and food security.
- iv. Financing and financial support that can help in developing market infrastructure, distribution systems and supply chain management.
- v. Increase financial inclusion among small farming communities to help better manage finances and fortify local food security.

Food insecurity is a global problem in North Sumatra because it is the highest contributor to inflation. The source of the staple food contributing to the highest inflation is rice, this is due to several assumptions, namely from the production side in North Sumatra there is no rice deficit, but it is suspected that rice from North Sumatra flows to neighboring areas due to high price discrimination so that there is a lot of North Sumatra rice.

# 2 Literature Review

# 2.1 Financial Ecosystem Theory

To understand how the financial ecosystem in North Sumatra is organized and functions, through understanding the role of local banks, microfinance institutions, and regional capital markets in providing financial resources for economic actors, including farmers and food producers. Several concepts or theories related to vital approaches have been put forward by various researchers, professionals or organizations in different contexts to answer the issue of food security, through three models of approach, including; The Local Economic System Model, focuses on local community empowerment and independence, the Green Economic Model, emphasizes environmental sustainability, and the Equal Partnership Model, emphasizes mutually beneficial collaboration. Implementing strategies from each model simultaneously can certainly give a comprehensive solution for handling issues related to food security.

#### 2.2 Empirical Study

Apart from theoretical reviews, it is important to include relevant empirical studies in the literature review, this is in the form of statistical data on inflation, food production, or food security indices in North Sumatra, as well as the results of previous research conducted by academics or related research institutions, including:

i. Rusmulyadi (2022) believes that food price anomalies at both the producer and consumer levels occur at extreme levels from year to year. The main reason for this food price anomaly to occur is more due to political-economic factors and national food which tends to be patronized by market mechanisms. Its significance and relevance

- encourage the formation of food markets to tend towards oligopoly or even monopoly. This market formation is the main cause of long distribution chains, high logistics costs and very random consumer and producer relationships. Producers and consumers are easily influenced by capital owners (large business actors).
- ii. Based on research by the Asian Development Bank (2015), with the theme Microfinance in Indonesia: Bringing Banks into the Community, which exemplifies Grameen Bank's pioneering microfinance program, where Bank Sumut in 2015 provided small loans to groups consisting of fifteen to twenty women microfinance program in North Sumatra helps small businesses, including food-related businesses, access financial services. This program, run by Bank Sumut, provides small loans to groups, especially women, thereby enabling them to develop their businesses and increasing microfinance for women, most of whom are housewives working in small businesses. The loans are repaid through small weekly payments and subsequent larger loans are offered as each previous loan is repaid. Banks charge minimal interest on these loans but the large borrower base makes them profitable.
- iii. According to Lumbanraja & Fahreza (2023), building North Sumatra's food security requires a series of institutional collaborations between regions to increase superior agricultural commodities in ensuring food availability. This policy is important to provide quality, safety and food security at the local level, which is oriented towards community empowerment. Food politics implemented in policies and programs requires strategic planning for aspects of food politics that lead to decisions and policies related to food production, distribution and access. These conditions encourage stakeholders to strengthen agricultural innovation such as the use of agricultural technology (smart farming) and develop diversification programs to ensure food availability in North Sumatra.
- iv. Mzuyanda's research (2024), explores how agricultural cooperatives are able to empower small farmers by increasing their participation in sustainable agricultural food chains. Although this study focuses on the Eastern Cape, South Africa, the findings can be applied to similar contexts such as North Sumatra, where the study highlights the importance of cooperatives in providing access to finance and supporting agricultural productivity in the region.

# 3 Research Methodology

#### 3.1 Research design

The financial ecosystem's influence is quite large, especially in supporting the regional economy, where directly and indirectly the role of banking is important in supporting the regional economy. This research uses a type with coding techniques part of the qualitative Grounded Theory approach.

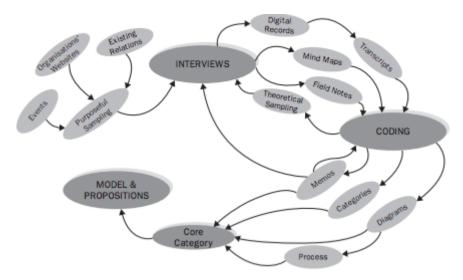


Fig. 1. Grounded Theory Methods (Source: Bryant, 2017)

Furthermore, the flow of the data collection process was carried out through the implementation of Focus Group Discussions (FGD) involving stakeholders in accordance with the problem formulation that was developed in accordance with the characteristics of qualitative research which was outlined in the form of transcripts from each informant involved and processed in coding with assistance NVIVO software.

# 3.2 Data Types and Sources

This research uses secondary data obtained from other parties related to previous research. Meanwhile, primary data in this research was obtained through presentations from relevant informants/stakeholders, through FGD. Bandur (2019) stated that data in qualitative research is relatively rich due to the many different forms and sources with varying data collection techniques.

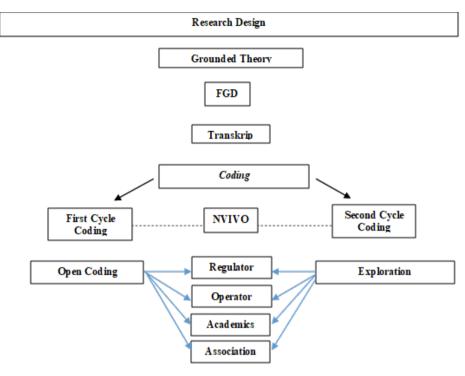


Fig. 2. Research Design (Source: Author, 2024)

### 3.3 Sampling Techniques

Qualitative research samples are purposive, which are in accordance with the research's aims and objectives. Apart from that, the sample used does not emphasize a certain number but rather the quality of information, credibility and richness of information that can be obtained. This research uses FGD techniques in data collection, considering the selection of participants with credibility, as many as 10 informants who represent stakeholder perspectives. The FGD was organized by the Indonesian Christian Intelligence Association (DPD PIKI) North Sumatra organization, with the role of researchers as well as administrators in the organization. The event was held on 14 October 2023 at the Bank Sumut Ballroom, 10th floor, Medan, North Sumatra.

The following is the informant profile which shows the classification of informant categories and is also a resource person in food security seminars which is very relevant to this research, with the following description:

NO	INFORMANT	RESPONSIBILITIES	INSTITUTION	CATEGORIES
1	Dr. Naslindo Sirait SE, MM	Head Of The Department Of	North Sumatra Provincial	Regulators
		Cooperative & Small Medium	Government	
		Enterprises (KUKM)		
2	Dr. Khadijah EL. Ramjah S.Pi.MP	Head Of The Center For	Ministry Of Agriculture	
		Implementation Of		
		Agricultural Instrument		
		Standards		
3	Radiapoh Hasiloan Sinaga	Regent	Simalungun Regency	
4	Indra Kuspriyadi	Director Of The North	Bank Indonesia	
		Sumatra Regional	Representative Office	
		Representative Office		
5	Babay Parid Wazdi	President Director	PT Bank Sumut	Operator
6	Effendy Aritonang	Director	Food For The Hungry	
7	Dr. Ir. Erika Pardede, M.App. Sc	Lecturer / Food Observer	Universitas Sumatera Utara	Akademic
8	Dr. Ir. Charloq, MP	Lecturer / Food Observer	Universitas Sumatera Utara	
9	Prof. Dr. Ir. Posman Sebuea	Dean Of The Faculty Of	Universitas Katolik Medan	Association
		Agriculture		
10	Luluk Ida William	Entrepreneur	Socfindo Conservation	
			Foundation	

Fig. 3. Informant Categorizations

# 3.4 Data Analyzing

The main procedures or several stages in conducting qualitative research, including the data analysis and coding stages (Creswell, 2009). Several stages are part of the coding procedure that need to be followed before analyzing data using NVIVO (Bandur, 2019), with the following description:

- Data management. Researchers begin to store all types of qualitative data in folders created in NVIVO at this stage, for example: FGD or interview transcript folders, recording folders, photo folders, website content, and so on.
- ii. Exploratory analysis. Researchers began to explore each data to get a general picture through skimming techniques (fast reading) to get the main ideas at the next stage, such as: (a) knowing the facts and ideas stored in data; (b) thinking about how the data will be organized; and © determine whether existing data is sufficient or additional data is still needed.
- iii. Node system. Researchers at this stage will create categories or sub-categories of concepts based on the information obtained through data.
- iv. Coding. Researchers will fill the nodes at this stage with information related to the concept categories that have been formed in the nodes system.
- Integration and Disintegration. Researchers will unite all nodes that have the same information characteristics and remove them from the node system. The process at this stage is known as data reduction; and
- Visualization of data reports. Researchers at this stage will explore various analysis schemes in NVIVO.

#### Coding

According to Saldana (2013), coding analysis is a crucial part in qualitative studies which usually takes the shape of words or brief sentences that symbolically (essencecapturing) indicate parts of sentences or visual information. Coding is an interpretive act, not an exact science. This implies that there are numerous ways to carry out coding analysis according to the needs of the study being carried out. Furthermore, coding types can be divided into two, namely: (i). Decoding. It is a technique for decomposing a group of sentences into their original meaning; and (ii). Encoding. This is the most appropriate code labeling technique. The types of data that can be coded can be interview transcripts, field observation notes, journal articles, images, artifacts photographs, recordings, literature, and so on. Coding can also be utilized to build/explore/discover patterns, theories, categorization, and other analysis processes. Furthermore, the coding technique in the second cycle is often called Axial Coding (Miles et al., 2014). Axial coding or more frequently alluded to as Pattern Codes refers to the advanced coding stage which carries out categorization of the code labels that have been formed in the first coding cycle which leads to more narrow categories with several objectives. Hierarchies, matrix codes, comparison diagrams, food security problem mapping, and policy connectivity design are other data exploration instruments that have been established in this research. So that researchers can carry out further research on nodes with certain progressions, according to QRS International (2013), which states that the purpose of hierarchical analysis in NVIVO is to compare the quantity of coding activity at each node and observe coding patterns. Next, the matrix code is utilized to recognize the significance of each item, where the matrix code is used in this research to see the relationship between each existing node. Next is project mapping, where in this case a brief mapping of the problems will be carried out through existing sub-nodes. The concept map is used to compile a concept map based on reasoning and organize the information obtained through connecting lines.

#### **Data Triangulation**

Qualitative research involves a process of validity and reliability, which can be achieved in various ways, one of which is data triangulation. Triangulation is a way to examine each different data source by examining evidence from each existing data source and then creating a coherent justification. There are four types of triangulations used, namely: (i). Triangulation of data/sources; (ii). Triangulation of researchers; (iii). Methodological triangulation; and (iv). Theoretical triangulation. Based on the existing types, in this research triangulation of sources (informants) will be carried out.

# 4 Result / Finding

Regional economic performance is influenced by regional development priorities and the way development funds are allocated. To maximize its role, the state and stakeholders have regulated this through various policies. The main factor is the financial and economic ecosystem in North Sumatra, so it can be understood that the rate of food security inflation is the decision variable in

this research, while the regional financial and economic ecosystem is the independent variable in this research, so that through the relationship between variables it can be explained.

In the context of this food security case study research, several relevant variables, along with their operational definitions, are used by the Government and all stakeholders in North Sumatra to be more effective in implementing food security policies and ensuring adequate financial access for farmers and food sector entrepreneurs. to help improve food security in the region and support community welfare, especially in regulatory and/or policy aspects, with the following description;

- i. Availability of Food, referring to Undang-Undang No.18 Tahun 2012 tentang Pangan, that the Government must ensure sufficient food availability through domestic production and imports, where operational variables are based on the amount of domestic food production, the amount of food imports, regional food reserve capacity.
- ii. Access to Food, referring to Peraturan Pemerintah No.7 Tahun 2015 tentang Ketahanan Pangan dan Gizi, to regulate food subsidies and financing support with operational variables in the form of number of food subsidy recipients, level of access to credit/financing for farmers and food, credit interest rate.
- iii. Food Price Stability, referring to the Peraturan Menteri Pertanian No.3/Permentan/OT.140/10/2019 tentang Penyelenggaraan Cadangan Pangan, which regulates the implementation of food reserves for price stabilization, with variable operations, namely food prices in local markets, fluctuations in food prices, the amount of available food reserves.
- iv. Financing Support which is no less important, refers to POJK No.9/POJK.03/2019 tentang Kredit atau Pembiayaan terhadap Usaha Mikro, Kecil dan Menengah (UMKM), and SEOJK No.20/SEOJK.03/2019 tentang Pedoman Pelaksanaan Kredit Usaha Rakyat and Peraturan Pemerintah (PP) Republik Indonesia No. 7 Tahun 2021 tentang Kemudahan, Pelindungan, dan Pemberdayaan Koperasi dan Usaha Mikro, Kecil dan Menengah (UMKM), to regulate general policies and technical guidelines for channeling banks regarding the provision of credit or financing to UMKM, including Kredit Usaha Rakyat (KUR).

The government is additionally implementing a number of initiatives through four steps, considering the importance of maintaining national food security, specifically; First, in terms of affordability in terms of easy public access to food, promoting the use of market digitalization and collaboration with BUMN/BUMD in order to distribute food from overabundance areas to areas that need it; Second, food availability is maintained by the Government through increasing domestic production and replacing activities that depend on foreign resources; Third, the Government implements good agricultural cultivation and good handling practices (post-harvest) to improve food quality and safety. Including meeting Sanitary and Phytosanitary (SPS) requirements and Indonesian National Standards (SNI); Fourth, the final thing which is no less important, namely maintaining the resilience and sustainability of natural resources, for example through establishing protected rice fields or controlling the conversion of rice fields, diversifying cultivation, using organic fertilizer and maintaining irrigation networks. In general, the highland food crop agriculture sub sector is classified as a superior commodity or mainstay commodity for food crop agriculture in the highlands in North Sumatra Province.



Fig.4. Contribution of the Agricultural Sector to the Economic Growth of North Sumatra Province 2018-2022 (Source: BPS, 2023)

#### 4.1 Controlling Regional for Inflation

Analysis of inflation in the North Sumatra region is also influenced by factors such as monetary policy, food imports and exports, as well as internal factors such as local production and distribution, including:

- Monetary policies implemented by BI such as the reference interest rate (BI Rate) can
  influence borrowing costs and consumption levels. When interest rates are increased,
  borrowing costs increase so that consumption and investment decrease, which can reduce inflationary pressures.
- ii. Food by import and export, where North Sumatra is one of the agribusiness centers in Indonesia, has significant reliance on food imports and exports. Dependence on imports of certain foodstuffs, such as rice, sugar or meat, can make the region vulnerable to international price fluctuations. When the price of imported food rises, production costs also increase, which can then be passed on to consumers in the form of higher prices, thereby triggering inflation. On the other hand, exports of superior commodities such as palm oil and rubber also influence inflation through the income of local farmers and entrepreneurs, as well as the dynamics of local supply and demand.
- iii. Internal factors such as local production and distribution are very important in maintaining price stability in North Sumatra. If agricultural, fishing and other industrial production runs smoothly and efficiently, the supply of goods on the market will be sufficient to meet demand, thereby reducing the rate of inflation. However, problems such as bad weather, pests, or disruptions in the supply chain can reduce production and increase distribution costs, which can ultimately push prices up.
- iv. Apart from the three main factors above, there are several additional factors that also influence inflation in North Sumatra, including fiscal policy, the rupiah exchange rate against foreign currencies (currency exchange) affecting import costs, where depreciation of the rupiah can increase import costs thereby encouraging inflation, seasonal

demand, especially during holidays or harvest season, can cause short-term price fluctuations which have an impact on inflation, and so on.

# 4.2 Regional Food Availability

Food security refers to the ability of a region or country to ensure adequate food availability for its population. A review of the condition of food security in North Sumatra, including factors that influence food production, distribution and accessibility, is important in this context. Despite obstacles such as plant diseases, climate change and fluctuating market prices, this potential can significantly improve the regional and national economy in the plantation and agricultural sectors, including:

- Palm Oil, this area is the largest producer of palm oil in Indonesia,
- Rubber with well-known rubber latex quality in both domestic and export markets,
- Arabica coffee is known for its high quality, especially from Sidikalang and Mandailing areas, has a rich and distinctive taste, and is often used in premium coffee blends.
- Deli tobacco is very famous and is used in making high-end cigars,
- Cocoa is an important part of the Indonesian chocolate industry, despite challenges from plant diseases and market price fluctuations,
- Rice as one of the staple foods, its production and contribution is significant to local food needs.
- Tropical fruits such as durian, mango, mangosteen, and rambutan, avocado are not only
  consumed locally but also exported to various other regions in Indonesia,
- Vegetables such as cabbage, carrots, tomatoes and potatoes are grown under climatic conditions and fertile soil that support abundant vegetable production,
- Fisheries, both freshwater and marine, play an important role in providing protein for local communities and also as export commodities, and
- Spices such as nutmeg and pepper are used in various local dishes and have high selling value.

#### 4.3 Role and Access to Finance in North Sumatra

#### **Banking**

Financial or banking interventions in overcoming inflation and food security problems in other regions can provide valuable insights. Analysis of the success or failure of such interventions and the lessons that can be learned from these experiences can be important considerations in designing policy strategies in North Sumatra, and one of the banks in the region that has a role in encouraging the regional economy and is the object of research is Bank Sumut, in terms of channeling funding for the development of infrastructure, facilities and infrastructure that support the food sector, such as irrigation, distribution networks, and storage and processing facilities. Adequate infrastructure will increase productivity and efficiency in the food supply chain and reduce post-harvest losses. Bank Sumut has demonstrated a history of excellent business growth, recording financial performance that has proven to be able to survive and even continue to grow serving the people of North Sumatra over the last sixty-one years. As a regional bank, Bank

Sumut role cannot be separated from its main business functions, namely funding and distribution, as well as bank activities in general which are integrated into programs related to food security, including:

- Providing funding support to producers/suppliers/market managers so that they can
  produce/maintain the availability of goods or food. This is implemented through a superior program coordinated by Bank Indonesia through the National Movement for
  Inflation Control program (Gerakan Nasional Pengendalian Inflasi Pangan [GNPIP])
- ii. Support the distribution of subsidies from the government, both in cash and non-cash, so that they are transparent and right on target so that people's purchasing power increases, such as the distribution of oil palm rejuvenation fund assistance, or the distribution of KUR with a description of the distribution, as follows:

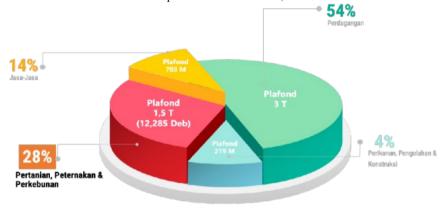


Fig. 5. KUR Realization of Economic Sector (Source: Bank Sumut Financial Report, 2022)

Controlling inflation through funding and distribution to bank customers can be seen in the realization of KUR achievements in the agriculture, livestock and plantation sectors, namely 28% of 5.5 trillion rupiah, the 2nd largest sector after trade. Bank Sumut supports strengthening food security through agricultural clusters and forming an integrated ecosystem, namely between farmers, banks, suppliers, off-takers, insurance, extension officers and field assistants in the North Sumatra region. Through the credit scoring method, banking credit requirements are simplified by using a system that makes it easier for UMKM to gain wider access, especially for beginner UMKM.

#### Role of Relevant Authorities

Bank Indonesia (BI) in terms of developing UMKM centers on corporatization efforts, providing a supporting environment, and ease of doing business through licensing. Apart from that, increasing capacity, the key to cluster success is human resources, the higher the education, the greater the success of the cluster (production, management and marketing). From the financing side, especially the Bank Indonesia Representative of North Sumatra who is committed to collaborating to realize food security in North Sumatra through reflection and perspective of sustainability and bottom up. Regional Inflation Control Team (Tim Pengendali Inflasi Daerah [TPID]) was formed by Bank Indonesia with the aim of helping to reduce inflation rates in various regions as

an effort to control inflation caused by shocks from the supply side, through efforts to control inflation.

This synergy to strengthen food security in the era of globalization was launched by Bank Indonesia through the North Sumatra TPID and began to be implemented in 2013. Bank Indonesia again launched a flagship program for expanding integrated Inter-Regional Cooperation (upstream to downstream) and digitizing the food supply chain through the GNPIP, for example, will raise the theme "Synergy and Innovation for Food Security through Increasing Productivity, Added Value and Integrated (Kerjasama Antar Daerah [KAD]): Bringing North Sumatra to Become More Dignified".

The launch of this program also draws attention to two other superior programs, namely the first program focuses on maximizing and strengthening food production to reduce the possibility of *el nino*, and this program is achieved by providing agricultural equipment, soil and weather sensors, poly bags and red chilies. Second, highlighting the added value of the food sector as a support for the economy in North Sumatra, including highlighting derivative products from the food sector which are supported by Bank Indonesia Representative Offices throughout North Sumatra and the Regional Government, as well as the KUR support program in the food sector carried out by State-Owned Banks and Bank of North Sumatra. The most basic problem of food decline is the regeneration of farmers who are already in trouble, but this can be tolerated considering the low exchange rate of farmers so that it does not raise the intention of the younger generation to develop farming businesses (Guspriyadi, 2023).

Farmer Exchange Value (Nilai Tukar Petani [NTP]) is a comparison of the price index received by farmers (it) to the price index paid by farmers (ib). NTP is an indicator to see the level of ability/purchasing power based on the agricultural products they produce, the goods and services they use, as well as the costs associated with their production. BPS data shows that the average NTP for this sub sector in Semester II 2023 was 125.87. This shows that farmers in North Sumatra on average have a surplus, that is, their income is 25.87% higher than their own expenditure, meaning that for every 100 units of expenditure they receive 125.87 units of money.

Otoritas Jasa Keuangan (OJK) through the concept of "Roadmap for Strengthening Regional Development Banks 2024-2027" reminds the current conditions in regional development banks specifically, OJK encourages the contribution of a reliable, stable, competitive and inclusive financial services sector in facing economic dynamics global. Based on the OJK Report for the first quarter of 2022, forecasts for a number of indicators in 2022 show optimism regarding the performance of the financial services sector, including banking credit which is estimated to grow in the range of  $7.5\% \pm 1\%$  (6.5%-8.5%) and third party funds which are estimated to increase will grow in the range of  $10\% \pm 1\%$  (9%-11%). Capital market fund collections are also predicted to increase by 125 trillion to 175 trillion rupiah, while financing receivables by finance companies are also predicted to grow in the range of  $12\% \pm 1\%$  (11%-13%).

However, it is estimated that the financial services industry will continue to be faced with several challenges in the future. To maintain optimism and safeguard the financial services sector in facing various challenges, based on its publication OJK in 2022 has anticipated this through the delivery of five priority policies for the financial services sector, including that the financial services sector must play a greater role in accelerating the country's economic recovery. Countries must also face the normalization of developed country policies and develop sustainable financing schemes to support green economic development.

#### **UMKM Actors**

According to Law Number 20 of 2008, UMKM are productive businesses possessed by individuals or business entities that meet the criteria for being a micro business. Increasing public financial access, especially UMKM, to meet the industry target of 30% of UMKM credit dissemination by 2024 using the cluster model is the Government's target in empowering the use of digital finance to ensure consumers and offer fast and affordable access. In general, financing issues are still the main problem in the development of UMKM, apart from market conditions, limited human resources, the need to adapt to technological developments, the need for time to understand and learn about business, time limitations, stock management, sales channel requirements and so on.

This condition in Indonesia cannot be separated from the contribution of UMKM to the workforce in Indonesia. The absorption of the UMKM workforce in 2019 was 119.6 million people from all over Indonesia, of which 96.92% came from UMKM, with the largest percentage being 89% of the workforce from micro businesses. For the distribution of Industri Kecil Menengah (IKM), namely the sub sector that manages types of small or medium scale industries such as home industries, and other small scale industries that are easier to be formed by lower middle economic communities, it is 63% of the total number of IKM in Indonesia and centered on Java Island, the largest in Central Java Province, namely 898,162 IKM. Meanwhile in North Sumatra Province there were 120,163 UKM recorded with several challenges in supporting UMKM development, especially UMKM financing faced by banks, as follows;

- i. Credit Qualification. Strict requirements are mandatory for borrowers, UMKM players do not yet can provide guarantees or collateral;
- Business Plan. Investors will be reluctant to invest in a business without a solid proof of concept or a strong history of performance; and
- Financial Recording. In general, many UMKM still do not have clear financial records, financial projections and strong financial reports, so their chances of getting credit are low.

The contribution of UMKM to GDP based on the Indonesian business landscape is dominated by micro and large businesses, most of which are in the informal sector. There is a hollow in the middle phenomenon, namely the contribution of small and medium enterprises is smaller than that of micro and large enterprises. Institutions or individuals extending credit to UMKM in North Sumatra in 2023 vary, starting from bank financial institutions such as large banks and commercial banks, which usually have special programs to provide credit to UMKM. As an illustration, the contribution of UMKM to Indonesia's GDP in 2021 is 37. % from micro businesses, 9.5% from small businesses, and 13.6% from medium businesses.

#### **Regional Government Officials**

Through his famous theory, Adam Smith stated that the government only has three functions, namely: a) the function of the government is to preserve national defense and security; b) the function of the government is to administer justice, and c) the government's function is to provide goods that are not provided by the private sector. The government, as an economic actor (government household), has a vital function in the economy, namely stabilization, allocation and distribution. There are 4 roles that can be taken by regional governments within the regional economic development process in North Sumatra, is coordinators, facilitators and stimulators for the birth of regional development initiatives, which are reflected in the roles of some regional agencies related to this research, that is:

- i. Department of Food and Livestock Security Service, North Sumatra Province. Research, development and coordination in the field of increasing food security, as well as encouraging the stabilization of food availability through its role in improving coordination in food availability or policy, overcoming food insecurity and development. Food reserves are maintained by the Government and the community, referring to Law Number 18 of 2012 Article 46 concerning food which states that the Central Government and Regional Governments are tasked with ensuring the affordability of food for communities, homes and individuals. Food distribution and access are components of food affordability. Efforts in distribution and stabilizing staple food prices to achieve food affordability.
- ii. Department of Cooperatives, Small and Medium Enterprises, North Sumatra Province. The Strategic Plan for KUMKM Financing for 2024-2026 which was prepared targets strengthening the institutions of Cooperatives and UKM, strengthening professional and accountable management human resources, building data that can be used by financing parties as a basis for decision making, strengthening KUMKM businesses and Investment Plans, strengthening partnerships, strengthening policies on cheap sources of financing and strengthening supervision so that all programs run effectively. The North Sumatra Province KUKM Service Office is also developing KUMKM business models and financing to support down streaming. Down streaming is an effort to create added value for products or services produced by UMKM by integrating production, processing and distribution stages into a more complex value chain. Product diversification and synergy with other parties are needed in the supply chain. Efforts to reduce exports of raw materials and encourage domestic industry to use these materials are known as down streaming or value addition because they can increase domestic added value and create jobs. Down streaming has the potential to improve the Indonesian economy in several ways, including the creation of large numbers of new jobs. Apart from that, down streaming makes a significant contribution to state revenues, having a positive impact on the expansion of the regional economy. Up streaming food and agricultural products is important because it not only influences the way people think about agriculture but also how farmers and the economy will develop in the future

#### The Role of Business Actors or Other Parties

Business and private actors also play a role in increasing synergy. One of these actors is the Indonesian Entrepreneurs Association (Asosiasi Pengusaha Indonesia [APINDO]) which developed the *Simitrasumut.com* application in collaboration with the North Sumatra Provincial Government. This innovation aims to encourage cooperation between UMKM, Large and Medium Enterprises (Usaha Besar Menengah [UBM]), and other business world stakeholders in improving the local business ecosystem, improving community welfare, and promising a more effective and efficient partnership process that facilitates connectivity and cooperation between UMKM and UMB.

This is the right step in helping UMKM in their expansion and development. With the help of the *Simitrasumut.com* platform, UMKM will easily exchange information, collaborate, and get the resources needed to improve their competitiveness and business performance. These resources will enable them to overcome the problems that UMKM have faced in the past, such as capital, stakeholder synergy, marketing, technology, human resources, and downstream. By using this application, UMKM and cooperatives can collaborate with large corporations and other

stakeholders, including academic institutions. Through six digitalization features, transformation and governance of UMKM in product downstreaming is expected to be improved. First, profiles of cooperatives and UMKM are presented starting from identity, type of business and legality, making it easier for business actors to get to know potential partners. Second, an algorithm will be used by this application to suggest potential. Third, this application makes it easy to communicate via the chat feature. Fourth, the availability of discussion forums, business ideas, suggestions and consultations. Fifth, the availability of product and service promotions, and these six applications provide location maps of business actors to make things easier for work partners (Naslindo, 2023).

PT Pupuk Indonesia as part of the food-related supply chain through down streaming and diversification of agricultural products is implementing the "Prosperous Ecosystem Program" which involves several indicators. The need for downstreaming and diversification of fertilizer at this time is because Indonesia is still very dependent on imported fertilizer, by carrying out a downstream program in order to; establishment of the food and beverage industry; packaging packaging; export of processed products; agritourism; processing of processed products; innovative product development; hydroponic cultivation; and bio product development. As well as diversification programs towards; mixed crops, crop rotation, organic farming, non-food agricultural products. This is necessary in responding to the challenge of strengthening the food supply chain by obtaining support from scientific technology and research as well as investment, the key to realizing the transformation of the National Food System.

Apart from PT Pupuk Indonesia, Socfindo is part of the Socfin Group and is a joint venture between Socfin Group (90% shares) and the Indonesian Government (10% shares) with a long presence in North Sumatra and an inter-generational workforce, as well become part of the food supply chain in the community structure. This was realized through the Socfindo Conservation Foundation by establishing a family medicinal plant conservation, which is in Dolok Masihul, Serdang Begadai regency

# 5 Discussion

# 5.1 Results of Focus Group Discussion (FGD)

Before discussing the results of the FGD, the following is first presented regarding the characteristics of the informants, which are divided into several categories to simplify the coding process. In this research, informants were divided into 4, with designation: *Regulators, Operators, Academics and Associations*.

#### 5.2 Coding Analysis

In this case, there are 11 transcripts that will be processed for coding. The following is an aggregate coding hierarchy to see which nodes are the most dominant (or have the highest number of coding activities) of all informants, as follows:

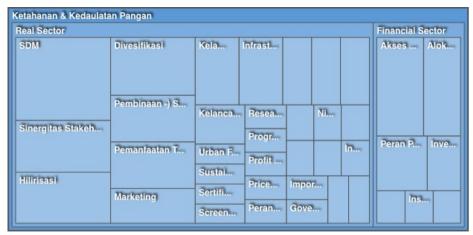


Fig.6. Aggregate Hierarchy (Source: Data Processed, 2024)

In the figure above, the node system is divided into 2 (two) sub nodes which alue to the formulation or research objectives that have been developed previously, specifically the *real sector and the financial sector*. This grouping was made based on the research objective of mapping the influence of the real sector and the financial sector in building food security. The following will show the mapping of System Nodes 1.

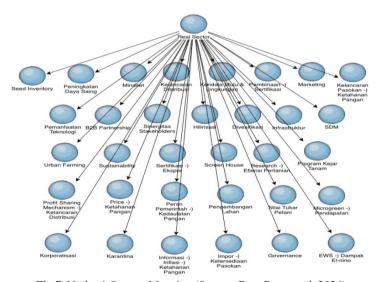


Fig.7. Nodes 1 System Mapping (Source: Data Processed, 2024)

The following is a table that describes the aggregate number of references (including sub-nodes, if any) from each node, as follows:

Table 1. Aggregate Hierarchy Nodes Reference

No Nodes Ref. Files Share	No	Nodes	Ref.	Files	Share
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			Coded	Max.	
				Value	
1	SDM	8	8	10	80%
2	Diversifikasi	5	5	10	50%
3	Hilirisasi	5	5	10	50%
4	Sinergitas Stakeholders	5	5	10	50%
5	Akses Kredit	4	4	10	40%
6	Pemanfaatan Teknologi	4	4	10	40%
7	Peran Perbankan	3	3	10	30%
8	Infrastruktur	3	3	10	30%
9	Kelancaran Pasokan > Ketahanan Pangan	3	3	10	30%
10	Marketing	3	3	10	30%
11	Pembinaan > Sertifikasi	3	3	10	30%
12	Alokasi Anggaran	2	2	10	20%
13	Investment	2	2	10	20%
14	Kelancaran Distribusi	2	2	10	20%
15	Mindset	2	2	10	20%
16	Peningkatan Daya Saing	2	2	10	20%
17	Seed Inventory	2	2	10	20%

Source: Data Processed (2024)

These results show that the 17 nodes above have the largest contribution to the overall hierarchy, both in terms of number of references and data sources (transcripts). This indicates that, as a whole (4 categories of informants), both implicitly and explicitly, they touched on human resources (Sumber Daya Manusia [SDM]) issues. The human resources in question include the availability of farmers, competency training, empowerment of UMKM, and university collaboration in product development. Apart from that, the "SDM" node has the highest resource value (8) with a total contribution of 80%. This indicates that 80% of the informants involved talked about SDM, both in terms of availability, quality and training.

Based on the description above, SDM is the node with the highest reference, namely 8 or mentioned by around 80% of the informants involved. This indicates that, in the context of the real sector. Human resource competency, availability of human resources (farmers), human resource empowerment, the role of universities, and so on are the things most often mentioned. In addition, "Stakeholder Synergy", "Downstreaming", and "Diversification" have references of 5 or are mentioned by around 50% of informants. These nodes also refer to downstream issues which can have an impact on increasing the competitiveness (price) of local products, the need for diversification to maintain food security against disasters, and the need for synergy between all stakeholders in realizing food sovereignty.

From the table above, there are 13 nodes mapped in the Nodes 1 (Real Sector) System with "SDM" as the largest contribution, namely 80%. Next, we will show several nodes stored in the Sub-Nodes 2 (Financial Sector) system. The following is an image that shows what is meant:

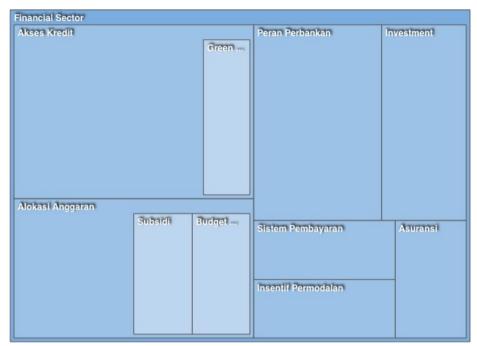


Fig.8. Nodes System Hierarchy 2, Financial Sector (Source: Data Processed, 2024)

The following will show the mapping of System Nodes 2:

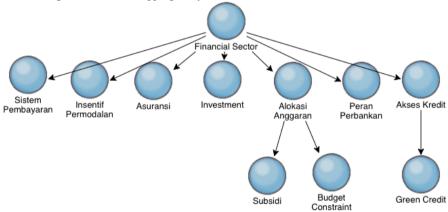


Fig.9. Nodes 2 System Mapping (Source: Data Processed, 2024)

The exploration diagram can be replaced with nodes to the right and left of the informant, namely nodes that have been touched on by each informant but are not related to each other. Meanwhile, the nodes to the right and left of the informant are nodes touched on by each informant which are not related to each other, which can replace the exploration diagram. Meanwhile, the number of references for each node can be seen in the Coding Nodes folder – select category – statement/image.

Based on the image above, "Credit Access" is the node with the highest reference, namely 4 or mentioned by around 40% of the informants involved. This indicates that, in the context of the financial sector in supporting food sovereignty, access to financing/credit is the thing most often mentioned. In addition, "Banking Role", "Budget Allocation", and "Investment" have references of 30%, 30%, and 20% respectively. The following is a table that shows nodes with their reference quantities.

Table 2. Nodes System Hierarchy 2 References

		1			
No.	Nodes	Ref.	Files Coded	Max. Value	Share
1	Akses Kredit	4	4	10	40%
2	Peran Perbankan	3	3	10	30%
3	Alokasi Anggaran	2	2	10	20%
4	Investment	2	2	10	20%

Source: Data Processed (2024)

From the table above, there are 4 nodes mapped in the Nodes System 2 (Financial Sector) with "Credit Access" as the largest contribution, namely 40%. The following will show the similarity of nodes between the Regulator and the Operator. In this case, the similarity of the nodes indicates that there are similarities between the matters mentioned by the Regulator and the Operator, both explicitly and implicitly. The following is a comparison diagram that shows this (a clear image can be seen in the NVIVO – Output - Comparative Diagram – Regulator vs Operator - Images folder):

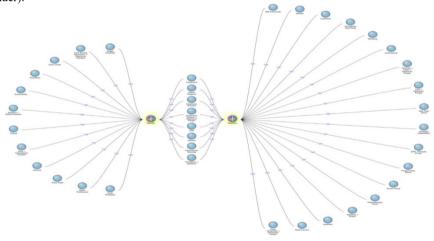


Fig.10. Comparison Diagram – Regulator vs Operator (Source: Data Processed, 2024)

In this picture there are around 8 similar nodes (Infrastructure, Budget Allocation, Smooth Distribution, Smooth Supply > Food Security, Human Resources, Down streaming, Utilization of Technology, and. Development > Certification) which are touched upon by both parties, either explicitly or implicitly. These similarities can be considered by researchers so they can carry out a more in-depth analysis of them. Based on the analysis that has been carried out (first cycle

coding and second cycle coding), a concept mapping was built to draw a comprehensive pattern, as shown in the picture below:

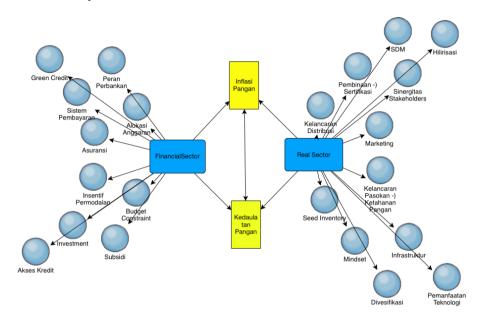


Fig.11. Concept Mapping (Source: Data Processed, 2024)

From the picture above, there are several node systems that are arranged into a single concept of thought. In creating food sovereignty, it is divided into two sectors that influence it, namely the real sector and the financial sector. The aspects in the real sector in question are related to mind-set, diversification of fertilizers or products, use of technology, human resources (education/training and availability), down streaming, stakeholder synergy, smooth distribution, smooth supply of goods, infrastructure, and so on. Meanwhile, the financial sector is supported predominantly by financing provided by banks and district/city government budget allocations in realizing food sovereignty.

#### 6 Conclusion and Recommendation

#### 6.1 Conclusion

Based on the results and analysis described previously, several conclusions can be drawn regarding this research, as follows:

i. The level of food security in North Sumatra through auto regressive model analysis produces a high coefficient, thus indicating a high level of persistence. This means inflation tends to persist for a long time after experiencing disturbances. Overall, the level of inflation persistence in North Sumatra Province can be considered good due to the continuous efforts of various stakeholders. However, there are still challenges that need to be addressed to ensure more consistent price stability and reduce the impact of

seasonal fluctuations. By continuing to improve coordination, innovation and investment in the agricultural and infrastructure sectors, North Sumatra can maintain and even increase the persistence of inflation in the future. Regional Government policies play a crucial role in controlling food commodity prices. Therefore, in controlling food inflation in North Sumatra Province, effective policies, such as subsidies, HET, controlled imports, and market operations, have proven to be able to stabilize prices of main food commodities, reduce price volatility, and reduce the rate of inflation.

ii. Based on the results of coding analysis in the context of food security, all informants (Regulators, Operators, Academics and Associations), both implicitly and explicitly, touched on infrastructure, budget allocation, smooth distribution, smooth supply, food security, human resources, down streaming, use of technology, coaching and certification and others, both explicitly and implicitly indicate that regional governments must facilitate the financial sector more to expand banking networks, especially facilitating regional banks in supporting credit/financing to regional communities.

Overall, controlling inflation and strengthening food security in North Sumatra Province requires solid collaboration between all stakeholders with specific roles and obligations. Regional government, financial sector, TPID, agricultural and food industry sectors, research and education institutions, communities and consumers must proceed to have a synergy of effective coordination, implementation of appropriate policies, as well as innovation. Active participation from all parties which are the keys to accomplishing stability sustainable food prices and security through strengthening the real sector related to mindset, human resources (education/training and availability), fertilizer or product diversification, use of technology, downstreaming, smooth distribution, smooth supply of goods, infrastructure, and so on; as well as the financial sector which is upheld by banking financing, government budget allocations and the availability of supplies and smooth distribution channels.

#### 6.2 Implication

It can be stated from the research results that the theoretical and practical implications are as follows:

- i. Theoretical Implications. The conclusion regarding the role of the real sector in supporting the creation of food sovereignty implies that human resource factors, both quantity and quality, will encourage existing food availability through increasing productivity. Apart from that, better quality human resources will make it easier to make maximum use of technology. Down streaming can be used to increase the competitiveness of local products, but it needs to be supported by capital inflow (investment), both domestic and foreign. The adequate support from the real sector for supply availability is a reflection of the supply side inflation theory. This condition reflects the need for supply stability to meet existing demand. Therefore, availability and smooth distribution are the keys to achieving inflation stability.
- ii. Practical Implications. Support from the financial sector for sovereignty, such as providing credit, which can be seen especially from the supply side, practically implies that, providing credit that hopes for farmer productivity and thereby increasing supply availability, must be supported by changes in people's mindset or preferences in consuming food.

#### 6.3 Recommendation

Based on the results, discussion and conclusions that have been presented, recommendations can be given, namely:

- i. In terms of increasing productivity and quality of agricultural products, the North Sumatra Provincial Government can assign Bank Sumut as a replacement for the role previously carried out by agricultural/fishing banks to carry out mentoring programs for human resources in increasing farmers' knowledge and skills to manage agriculture and/or fisheries more effectively and sustainably, such as market development, access to technology, financial management, and modern and environmentally friendly agricultural training.
- ii. Various policies prepared by stakeholders must always be harmonized and improved so that they better touch society with its various problems and support efforts that need to be taken, for example downstream program policies related to food sovereignty. The importance of policies that support all parties involved in the economic cycle, especially the North Sumatra region, as well as ongoing collaboration and coordination in implementing integrated macroeconomic policies so that they can achieve the goal of controlling inflation, for example policies that build regional business models, e-commerce technology, program affiliation, franchise business, cross-selling, and so on. All policies are aligned with current and future developments in the national economy

#### 6.4 Policy Implications

Based on the results of this research, it shows that the role and access of the financial sector in strengthening food security in North Sumatra Province has an impact on the creation of food sovereignty which has implications for various policies, including in the form of laws. It is necessary to accelerate policies and determine solutions to challenges in credit access, the role of banking, budget allocation; and investment. Access to credit is the thing most often mentioned in the context in question, through using low margins (as distributed to PT. Pupuk Indonesia) will help farmers in developing production. Meanwhile, government assistance through priority use of regional budgets or providing fertilizer subsidies will also support farmer productivity

#### 6.5 Suggestions

Based on the results, discussion and conclusions presented by the researcher, suggestions can be made:

- i. Synergy between all stakeholders, including Regional Government, Authorities, related institutions/agencies in issuing policies and evaluations whose implementation can be harmonized by the financial industry such as Bank Sumut, especially to optimize consistently sustainable productive credit/financing, providing easy access to capital for food business actors.
- ii. Banking, together with government or private institutions, can help provide technical assistance in implementing modern and sustainable agricultural practices. Bank Sumut as an agent of development supports local economic growth, improving community

welfare through several main strategies to improve; agricultural sector financing specifically for farmers, cooperatives and small and medium businesses through KUR and Agricultural Insurance to protect farmers from the risk of crop failure due to natural disasters or pests; Development of infrastructure that supports development such as irrigation, storage warehouses and post-harvest facilities; and, Partnership and collaboration with local governments and research institutions, to increase productivity and sustainability of the agricultural sectorr.

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