

The Role of Social Capital in the Development of Native Chicken Enterprises: A Case Study at P4S Laskar Andalas

Meldy Eka Putra¹, Helmi², and Hasnah^{2}*

¹Regional and Rural Development Study Program, Graduate Program, Universitas Andalas, Indonesia

²Department of Agricultural Socioeconomics, Faculty of Agriculture, Universitas Andalas, Indonesia

Abstract. This study investigates the increase in native chicken population in Koto Parik Gadang Diateh District of South Solok Regency, credited to the transformation of MFH Farm into *Pusat Pelatihan Pertanian dan Pedesaan Swadaya* (P4S) Laskar Andalas. The objectives of this study include describing P4S Laskar Andalas' profile and role in native chicken business development and analyzing social capital's impact on the local economy through chicken farming. Using a case study approach, key informants such as P4S Laskar Andalas, KUB PM Koto Parik, native chicken breeders, and local restaurants were engaged. Findings reveal P4S Laskar Andalas' diverse role in native chicken husbandry, including enterprise operation, advisory services, and business partnerships. Strong social bonds between P4S Laskar Andalas, KUB-PM Koto Parik, and breeders indicate robust bonding social capital. Additionally, positive relationships with Sungai Kalu Restaurant and Teras Ayam Kampung Restaurant reflect well on bridging social capital. The strong association between P4S Laskar Andalas and the Agriculture Office of South Solok Regency demonstrates strong linkage social capital. These results underscore social capital's role in facilitating collaborative efforts and enhancing the local economy through native chicken farming.

Keywords: local economy, native chicken, social capital

Received 15 March 2024 | Revised 26 June 2024 | Accepted 12 July 2024

1. Introduction

BPS-South Solok Regency [1] reported that the agricultural sector contributed substantially to the GDP in 2021, amounting to 1,641.94 billion or 28.42% of the total GDP based on current prices. This figure marks importance of the agricultural sector relative to other economic domains.

Primary commodities within the agricultural sector of South Solok Regency encompass staple foods such as rice and corn, alongside livestock, plantation crops, and fishery products. Notably, the region has witnessed burgeoning growth in the free-range chicken industry, evidenced by data spanning from 2015 to 2021, which illustrates a consistent upward trend in native chicken

*Corresponding author at: Faculty of Agriculture, Universitas Andalas, Kampus Unand Limau Manis, Padang, Indonesia

E-mail address: hasnah@agr.unand.ac.id

populations. Particularly noteworthy is the remarkable surge in population exceeding 100% from 2019 to 2020, with Koto Parik Gadang Diatch District hosting the highest number of native chickens in 2020.

This figure is attributed to the establishment and expansion of MFH Farm, a prominent player in the native chicken business since its inception in 2017. The exponential growth of MFH Farm has piqued the interest of the local community, prompting the establishment of the Independent Agricultural and Rural Training Center (*Pusat Pelatihan Pertanian dan Pedesaan Swadaya = P4S*) Laskar Andalas by the farm's proprietors in Koto Parik Gadang Diatch District. P4S Laskar Andalas serves as a focal point for productive business ventures, particularly MFH Farm, and facilitates knowledge-sharing initiatives pertaining to native chicken cultivation within the community.

P4S's activities encompass the entire spectrum of the native chicken production process, from breeding and rearing to processing and marketing. Moreover, P4S fosters collaborative relationships with external entities, including individual and group enterprises, to strengthen the native chicken industry. Through knowledge dissemination and business enhancement endeavors, P4S plays a pivotal role in driving economic prosperity within the community, empowering native chicken entrepreneurs to enhance productivity, quality, and value.

In alignment with its mission to nurture human capital and foster economic development, P4S operates within a framework of social capital, comprising networks, norms, and beliefs that facilitate collective action towards shared objectives. This social capital not only facilitates business development but also cultivates trust and cooperation among stakeholders, essential elements for the sustainable growth of the native chicken industry.

Social capital, a concept elucidating the value embedded within social networks and relationships, has emerged as a critical determinant shaping agricultural development and sustainability. The role of social capital in agriculture extends beyond mere economic transactions, encompassing knowledge exchange, collective action, and community resilience. By fostering trust, reciprocity, and cooperation among stakeholders, social capital facilitates information sharing, resource mobilization, and innovation diffusion within agricultural systems [2]. Moreover, social capital plays a pivotal role in enhancing the adaptive capacity of agricultural communities in the face of environmental uncertainties and socio-economic challenges [3].

2. Methods

This study was conducted at the P4S Laskar Andalas in South Solok Regency, from December 2021 to January 2022. Employing the case study research method, this investigation looks into

the development of native chickens and the role of social capital in the supply chain of the native chicken business in South Solok Regency, with the aim of enhancing the local economy.

2.1. Respondents

The key informants involved in this research comprised: 1) Management of the P4S Laskar Andalas; 2) Management of the Young Farmers Joint Business Group (KUB-PM) in Koto Parik; 3) Native chicken farmers; 4) Representatives from restaurants, slaughterhouses, or broiler processing facilities; and 5) The Head of the Livestock Division at the South Solok Regency Agriculture Office.

2.2. Variables

Three variables involved in this study include bonding, bridging and linking capital. The three variables are described as follows.

1. Bonding capital

This pertains to social capital between the P4S Laskar Andalas and other native chicken farmers, particularly those affiliated with the Koto Parik Young Farmer Joint Business Group (KUB-PM) and Native chicken Breeders. The indicators for assessment include cooperation, the establishment of cooperative rules and sanctions, information sharing, regular interactions, and honesty in dealings.

2. Bridging capital

This refers to social capital between the P4S Laskar Andalas and stakeholders engaged in post-harvest activities, such as restaurants, slaughterhouses, and broiler chicken processing producers. The indicators for evaluation encompass cooperation, the establishment of cooperative rules and sanctions, information sharing, regular interactions, and honesty in dealings.

3. Linking capital:

This denotes social capital between the P4S Laskar Andalas and stakeholders serving as policy makers, namely the Livestock Sector of the South Solok Regency Agriculture Office. The indicators for scrutiny include cooperation, the establishment of cooperative rules and sanctions, information sharing, regular interactions, and honesty in dealings.

2.3. Data Analysis

The data were analyzed using descriptive analysis. The level of perception on social capital indicators were measured using a five-point Likert scale. The average score was then categorized into five categories as follow.

Table 1. Category of Respondents' Perception on Social Capital Indicator

Average score	Category
1.0 - 1.8	Poor
1.9 - 2.6	Fair
2.7 - 3.5	Good
3.6 - 4.2	Very good
4.3 - 5.0	Excellence

3. Results and Discussion

Native chickens are a common commodity cultivated by the community in South Solok Regency. The process of raising native chickens is generally done for pleasure or hobby. The cultivation techniques employed by the community are quite simple, with native chickens being let loose in yards and provided with feed such as kitchen waste, bran, rice/paddy, and some are even left to forage on their own in the yard.

Today, the technique of raising native chickens, whether released or confined, is starting to change among some residents of South Solok Regency. Native chickens that were previously allowed to roam freely in the yard are now being confined, and what was once merely a hobby or pleasure in raising native chickens for some residents has now become a source of household income. The main contributing factor of this shift is the increasing demand for native chickens, resulting in the supply of native chickens being unable to meet market demand. To meet the market demand for native chickens, intensive native chicken farming is necessary to achieve higher production and increase income.

Based on data from the Central Statistics Agency of South Solok Regency, the population of native chickens tended to increase from 2015, with a particularly significant rise in 2020. Table 2 presents native chicken population and number farmers involved in this business in period 2015-2020. Even though the population of native chicken increased significantly in that period, number of farmers involved in native chicken business increased steadily. It indicates an increase in business scale.

Table 2. Population of Native Chicken and Number of Farmers in South Solok Regency in 2015-2020

Year	Population (Live Bird)	Number of Farmers
2015	87,027	6,130
2016	91,704	6,143
2017	92,988	6,267
2018	94,958	6,383
2019	86,773	6,435
2020	173,980	6,435

Note: Sample size n=36. EC: Electrical Conductivity; CEC: Cation Exchange Capacity

3.1. Profile of P4S Laskar Regency (2021)

The P4S Laskar Andalas operates its business in Jorong Batang Lolo Guideg, Koto Parik Gadang Diateh District (KPGD), South Solok Regency, West Sumatra province. It stands as the pioneering P4S establishment in South Solok Regency. The agricultural endeavors of P4S Laskar Andalas encompass native chicken farming agribusiness, food crop cultivation, rice paddy fields, freshwater fisheries cultivation, and various other agricultural commodities. Employing an integrated agricultural approach, P4S Laskar Andalas focuses primarily on native chicken farming. It holds certification from the Ministry of Agriculture of the Republic of Indonesia, conferred through the Agricultural Extension and Human Resources Development Agency (BPPSDMP) on July 27, 2020, designating it as an Intermediate Class P4S.

The implementation of native chicken business by P4S Laskar Andalas spans from native hen cultivation, hatching egg production, hatching business, native chicken rearing, to the production of slaughtered and clean native chickens, and the processing of native chicken feed. P4S Laskar Andalas manages a poultry operation of 600 brood, comprising 100 males and 500 females. These broods exhibit an average fertility rate of 70%, resulting in a daily yield of approximately 350 fertile eggs or 10,500 eggs monthly. These fertile eggs serve as the principal resource for hatching indigenous chicken eggs.

The egg hatching procedure is organized into distinct cycles, each lasting 6 days, to maintain optimal hatchability by minimizing the duration eggs spend outside the incubator. Approximately 2,100 eggs are accommodated in the incubator per cycle, yielding an average of 1,575 native chicks (with a productivity rate of 75%) per cycle. Consequently, with 600 broods, this enterprise yields 7,875 native chicks monthly. The majority of the hatchery's output is directed towards commercial sale, with a small portion allocated for expansion initiatives.

The rearing process for native chickens at P4S Laskar Andalas exhibits fluctuating patterns, typically culminating in the cultivation of 300-500 chickens per cycle, which spans 2 months. The resulting produce is partly distributed to slaughterhouses, with a portion processed into fresh native chicken. Additionally, on an annual basis, a portion of the enterprise's output is dedicated to the rejuvenation of native hen populations.

The establishment of a fresh and hygienic native chicken enterprise represents a recent endeavor by P4S Laskar Andalas, prioritizing the convenience of consumers engaged in office work or other busy activities. Furthermore, it underscores the commitment to ensuring the safety and welfare of downstream native chicken consumers in the South Solok district.

P4S Laskar Andalas also engages in the production of proprietary feed, with surplus being traded upon demand from external entities. This initiative is aimed at mitigating feed expenses associated with native chicken rearing. Moreover, the cultivation of Azolla and BSF Maggot serves as

alternative feed sources. Notably, P4S Laskar Andalas also manufactures hatching machines, primarily for internal utilization.

P4S Laskar Andalas engages in various business activities, yielding notable products, such as the indigenous chicken breeds. Presently, P4S Laskar Andalas produce 2,000 indigenous chicken breeds per month. Moreover, the native chicken variety developed by P4S Laskar Andalas is certified by the Ministry of Agriculture of the Republic of Indonesia as the Kampung Unggul Balitbangtan (KUB-1) breed.

3.2. The Role of the P4S Laskar Andalas in the Development of Native Chicken Business

In addition to its commercial endeavors, the P4S Laskar Andalas actively disseminates information on native chicken husbandry within the community. This transfer of knowledge occurs through various channels including individual consultations, group discussions, and formal training sessions.

Individual consultations are conducted with individuals already engaged in native chicken farming as well as those interested in starting the business. Group discussions are facilitated by the P4S Laskar Andalas in collaboration with farmer groups and government agencies, such as the discussions held with farmer groups receiving programs from governmental bodies like PT Mitra Kerinci.

Furthermore, the Laskar Andalas P4S conducts training programs to share expertise with the community. These training sessions cover a range of topics including chicken farming techniques, egg incubation technology, and other relevant aspects of native chicken cultivation.

In its business activities and native chicken development efforts, P4S Laskar Andalas forms partnerships with individuals and groups. One notable collaboration involves providing native chicken eggs for hatching with the Koto Parik Young Farmer Joint Business Group (KUB-PM). Additionally, partnerships with other farmers are forged to enhance broiler production, with a portion of hatched native chickens being distributed to these partners.

Moreover, partnerships are established with stakeholders involved in the marketing chain such as restaurants, slaughterhouses, and broiler chicken processors. These collaborations aim to streamline and expedite the marketing process for broiler native chickens.

Furthermore, P4S Laskar Andalas engages in communication and cooperation with governmental agencies such as the South Solok Regency Agriculture Office, the South Solok Regency Food Security and Fisheries Office, and the West Sumatra BPTP. These engagements are aimed at obtaining and disseminating information on policies pertaining to native chickens and their development in West Sumatra.

3.3. The Role of Social Capital in the Development of Native Chicken

In the execution of the activities undertaken by the P4S Laskar Andalas aimed at developing native chicken farming in South Solok Regency, the significance of the social capital it possesses cannot be overstated. This section focuses on examining social capital across three dimensions: bonding, bridging, and linking. Each dimension of social capital are describe more details in the following perspectives.

3.3.1. Bonding Social Capital

Within the bonding social capital dimension, the observed social capital pertains to the relationships between the P4S Laskar Andalas and fellow native chicken farmers including KUB-PM and other farmers.

Table 3. Social capital bonding between p4s and native chicken farmers

No	Indicators	Average score	Category
1	Collaborate	4.3	Excellent
2	The Existence of Rules and Sanctions in Cooperation	3.0	Good
3	Information sharing	4.7	Excellent
4	Frequent Interaction	4.4	Excellent
5	Honesty in Interaction	4.7	Excellent
Overall		4.2	Very good

Table 3 illustrates that the overall score of bonding social capital is highly favorable. Particularly, the collaborative aspect concerning the procurement and exchange of Day-Old Chicks (DOC), a pivotal element within native chicken breeding, achieves an outstanding rating. In this dynamic, the P4S Laskar Andalas assumes the role of DOC producer, while native chicken farmers function as consumers. The research underlines the tangible benefits accruing to farmers from their association with P4S Laskar Andalas. Farmers receive support in marketing their broiler native chickens, as P4S Laskar Andalas facilitates sales to its network partners. Furthermore, P4S Laskar Andalas assumes responsibility for overseeing the sustainability of farmers' operations.

Collaborating farmers are required to adhere to the regulations and sanctions stipulated by P4S Laskar Andalas to ensure compliance with native chicken egg production standards. These regulations encompass criteria such as the ratio of roosters to hens, feed utilization, health protocols for native chickens, and adherence to the designated native chicken type KUB-1. While these regulations are not formally documented, P4S Laskar Andalas reserves the right to decline purchasing eggs from farmers found in breach of the established rules. The presence of such regulations and enforcement mechanisms within the cooperative framework receives a good score.

Indicators provide valuable insights within the sphere of business interests and the advancement of native chicken husbandry in South Solok Regency. Another crucial indicator pertains to the frequency of interactions between P4S, KUB-PM, and fellow farmers, which has been appraised as highly satisfactory and commendable. These interactions are routinely conducted in endeavors concerning the native chicken enterprise. They predominantly revolve around fortifying and advancing business initiatives collectively. Lastly, the indicator of integrity underlines the progression from merely exchanging pertinent information, such as scientific advancements, novel technologies, pricing mechanisms, to various other facets within the scope of these interactions.

3.3.2. Bridging Social Capital

The dimension of bridging social capital is shown by the interactions between the P4S Laskar Andalas and stakeholders engaged in post-harvest activities or as consumers of broiler chickens. The stakeholders identified in this study are the Sungai Kalu Restaurant and the Kampung Chicken Terrace Restaurant. The level of bridging social capital is described in Table 4.

Table 4. Bridging social capital between p4s laskar andalas and restaurants

No	Indicators	Average score	Category
1	Collaborate	3.5	Good
2	The existence of rules and sanctions in cooperation	2.5	Fair
3	Information sharing	4.5	Excellent
4	Frequent interaction	5.0	Excellent
5	Honesty in interaction	5.0	Excellent
Overall		4.1	Very good

Overall, the score of bridging social capital is very good. The collaboration between P4S and restaurants is quite well established. This collaboration is carried out to ensure the availability of broiler chickens for the restaurants. In carrying out the marketing process, P4S collaborates with native chicken costumers including Teras Ayam Kampung Restaurant, located in Pekan Salasa, Pauh Duo District, and Sungai Kalu Restaurant, which is located near Sungai Kalu Market, Koto Parik Gadang Diateh District. P4S Laskar Andalas also sells chicken directly to end consumers.

Table 4 shows that the existence of rules and sanctions in cooperation takes the lowest score. The rules and sanctions only exist in the form of an agreement on the price and weight of chickens. Information sharing indicators are very well related to the increasing demand for native chickens for restaurants. The information shared are price, chicken weight, production time, and native chicken inventory information.

There is an intensive interaction between P4S and restaurants with excellent score. This interaction is carried out during the process of buying and selling native chickens. A trust has been established in the interaction that is proved by the high score of honesty in the interaction.

3.3.3. Linking Social Capital

The interaction between the P4S Laskar Andalas and government as policy-making responsibilities represent linking social capital dimension, with specific emphasis placed on the South Solok Regency Agriculture Office. This interaction has excellent score overall (Table 5). It reveals that a robust collaboration exists between the P4S Andalas Laskar and the South Solok Regency Agriculture Office, particularly concerning the development of native chicken farming in the region. This collaboration encompasses various forms of engagement, such as the exchange of technological know-how and experiential insights, collective efforts towards native chicken enhancement, as well as facilitating educational excursions for farmers.

Table 5. Linking social capital between P4S and the South Solok Regency Agriculture Office

No	Indicators	Average score	Category
1	Collaborate	4.0	Very good
2	The existence of rules and sanctions in cooperation	4.0	Very good
3	Information sharing	5.0	Excellent
4	Frequent Interaction	5.0	Excellent
5	Honesty in Interaction	5.0	Excellent
Overall		4.6	Excellent

Moreover, this cooperative endeavor is underpinned by a framework of established regulations and sanctions to govern the partnership. These regulations manifest in structured visitation schedules, procedural guidelines for on-site learning initiatives, and other pertinent directives. Additionally, the collaboration is characterized by a commendable level of information dissemination, primarily concerning policy matters pertinent to native chicken development within the South Solok Regency.

Table 5 further illustrates that frequent interactions occur between the P4S Andalas Laskar and the South Solok Regency Agriculture Office. These interactions predominantly revolve around the exchange of information pertaining to native chicken development, encompassing aspects such as innovation dissemination, pricing mechanisms, and updates on regulatory frameworks. Furthermore, it is noteworthy that these interactions are marked by a high degree of transparency and integrity, particularly evident in adherence to regulatory frameworks and policies governing native chicken development initiatives.

Many studies highlight the multidimensional dynamics of social capital in agricultural contexts, exposing its role in fostering sustainable entrepreneurship, governance effectiveness, innovation adoption, resilience building, and poverty alleviation within diverse socio-economic landscapes. Lang et al. [8] conducted research on the pivotal role of structural social capital (SSC) in propelling social-oriented sustainable agricultural entrepreneurship (SAE) in Vietnam. They found the mediating role of facilitating conditions (PFCs) and establish the significant

contribution of SSC in driving intention towards SAE. Similar study conducted by Barghusen et al [9] point up the critical role of formal and informal relations in enhancing collaboration and knowledge exchange among stakeholders, facilitating the coordinated implementation of agri-environmental initiatives.

Zelege et al. [10] shed light on the instrumental role of social capital in addressing seed access constraints and adoption intensity in the context of Arsi Highland, Oromia Region, Ethiopia. By employing the augmented Double hurdle model and Principal Components Analysis, they discern the differential effects of social capital dimensions on wheat variety access and demand, emphasizing the significance of social ties in mitigating seed access constraints and fostering agricultural innovation adoption. Furthermore, Slijper et al [11] investigate the interplay between social capital, learning, and farm resilience among Dutch arable farmers. Drawing on qualitative and quantitative data, they elucidate the diverse pathways through which social capital and learning contribute to farm adaptation and transformation, highlighting the pivotal role of informal social networks, bridging, and linking social capital in fostering knowledge exchange and facilitating adaptive responses to multifaceted challenges.

Zugravu-Soilita et al. [12] investigate the nexus between cultural and social capital and tribal agricultural production in New Caledonia. Their empirical investigation underscores the complementary relationship between cultural values, social relations, and agricultural performance, highlighting the interdependent nature of tangible and intangible forms of wealth in sustaining tribal agriculture and fostering socio-economic resilience. Tuna and Karantininis [13] study the role of agricultural cooperatives as social capital hubs in post-socialist countries, using North Macedonia as a case study. Through social network analysis, they elucidate the cooperative's function as an information mediator, facilitating knowledge exchange and resource access among farmers, thereby underscoring its potential in fostering cooperation and rural development in post-socialist contexts.

Lastly, Zhang and Zhao [14] examine the impact of social capital on mitigating economic vulnerability among farmers in China. Their findings underscore the significant role of social capital in reducing livelihood vulnerability across different regions, while highlighting the influence of income disparities on social capital accumulation. They emphasize the need for policies aimed at enhancing social capital to address poverty and promote sustainable rural development.

Native chicken farming in South Solok Regency presents a unique blend of traditional practices and emerging commercial opportunities. While the transition towards intensive farming methods, exemplified by enterprises like P4S Laskar Andalas, has opened new paths for income generation and market expansion, it also brings forth a set of challenges that need to be addressed for sustainable growth.

One of the primary challenges faced by native chicken farmers is disease management. As farming operations scale up, the risk of disease outbreaks increases, posing a threat to the health and productivity of poultry stocks. Diseases such as Newcastle disease and avian influenza are particularly concerning due to their high mortality rates and potential for transmission to humans.

Market fluctuations represent another significant challenge for native chicken farmers. While the increasing demand for native chickens has driven the transition towards commercial farming, market dynamics can be unpredictable, leading to price volatility and income uncertainty for farmers. Moreover, the concentration of market power in the hands of a few intermediaries can result in unfavorable pricing structures for farmers, exacerbating income disparities within the industry.

Environmental sustainability is a pressing concern in the context of intensive native chicken farming. The expansion of poultry operations can lead to environmental degradation through increased waste generation, water pollution, and deforestation for feed production. Sustainable farming practices, such as integrated pest management, agroforestry, and waste recycling, are crucial to minimize the ecological footprint of native chicken farming and preserve natural resources for future generations.

Despite these challenges, native chicken farming in South Solok Regency presents significant opportunities for economic development and poverty alleviation. The growing demand for high-quality, locally sourced poultry products offers a lucrative market for smallholder farmers to capitalize on. By adopting best practices in breeding, feeding, and marketing, farmers can enhance the value proposition of their products and gain a competitive edge in the marketplace.

Furthermore, the social capital embedded within rural communities plays a pivotal role in supporting the growth and resilience of native chicken farming enterprises. Strong social networks facilitate knowledge sharing, resource pooling, and collective action, enabling farmers to overcome challenges and seize opportunities collectively. Collaborative initiatives, such as farmer cooperatives and extension programs, enhance the capacity of farmers to access markets, negotiate fair prices, and advocate for supportive policies.

4. Conclusion and Policy Implication

In the realm of bonding social capital, robust social ties are observed between the P4S Laskar Andalas and the Koto Parik Young Farmer Joint Business Group (KUB-PM), as well as native chicken farmers. These connections signify a strong foundation for collaborative endeavors within the agricultural community. In the dimension of bridging social capital, notable social connections are established between the P4S Andalas Laskar and entities such as the Sungai Kalu Restaurant and Kampung Chicken Terrace Restaurant. These connections are characterized by

their beneficial nature, fostering mutual support and resource exchange. Furthermore, in the domain of linking social capital, a robust network is evident between the P4S Andalas Laskar and the South Solok Regency Agriculture Office. This level of engagement signifies a high degree of cooperation and information sharing, essential for effective policy implementation and agricultural development. In summary, the existing social capital within these interactions falls within the category of good and very good values, indicating a solid foundation for collaborative efforts and sustainable agricultural practices.

Considering the pivotal role of the P4S Laskar Andalas in fostering the development of native chicken farming in South Solok Regency, it is imperative to conduct structured and sustainable training initiatives. Additionally, there is a pressing need to broaden partnerships within the native chicken industry in South Solok Regency to stimulate economic development across numerous communities. To optimize these efforts, it is crucial to bolster social capital across all dimensions, thereby fortifying the resilience and efficacy of the native chicken business ecosystem in South Solok Regency.

REFERENCES

- [1] BPS-South Solok Regency, "South Solok Regency in 2022 Figures " BPS-South Solok Regency, 2023.
- [2] J. Pretty and H. Ward, " Social capital and the environment," *World Development*, vol. 29, no. 2, pp. 209 - 227, 2001.
- [3] N. Uphoff, "Understanding social capital: Learning from the analysis and experience of participation," in *Social capital: A multifaceted perspective*, P. Dasgupta and I. Serageldin Eds.: World Bank Publications, 1999, pp. 215 - 249.
- [4] R. D. Putnam, *Bowling alone: The collapse and revival of American community*. Simon and Schuster, 2000.
- [5] M. Woolcock and D. Narayan, "Social capital: Implications for development theory, research, and policy," *The world bank research observer*, vol. 15, no. 2, pp. 225-249, 2000.
- [6] T. Petersen, "The social capital of Danish dairy farmers," *Journal of Socio-Economics*, vol. 30, no. 2, pp. 85 - 100, 2001.
- [7] C. Grootaert and T. Van Bastelaer, *Understanding and measuring social capital: A synthesis of findings and recommendations from the social capital initiative*. World Bank Publications, 2002.
- [8] L. D. Lang, A. K. Tiwari, H. N. Hieu, N. M. Ha, and J. Gaur, "The role of structural social capital in driving social-oriented sustainable agricultural entrepreneurship," *Energy Economics*, vol. 124, p. 106855, 2023, doi: <https://doi.org/10.1016/j.eneco.2023.106855>.
- [9] R. Barghusen, C. Sattler, R. Berner, and B. Matzdorf, "More than spatial coordination—How Dutch agricultural collectives foster social capital for effective governance of agri-environmental measures," *Journal of Rural Studies*, vol. 96, pp. 246-258, 2022, doi: <https://doi.org/10.1016/j.jrurstud.2022.10.023>.
- [10] B. D. Zeleke, A. K. Geleto, S. Asefa, and H. H. Komicha, "The role of social capital in addressing seed access constraints and adoption intensity: Evidence from Arsi Highland,

- Oromia Region, Ethiopia," *Heliyon*, vol. 9, no. 2, 2023, doi: <https://doi.org/10.1016/j.heliyon.2023.e13553>.
- [11] T. Slijper, J. Urquhart, P. M. Poortvliet, B. Soriano, and M. P. M. Meuwissen, "Exploring how social capital and learning are related to the resilience of Dutch arable farmers," *Agricultural Systems*, vol. 198, p. 103385, 2022/04/01/ 2022, doi: <https://doi.org/10.1016/j.agsy.2022.103385>.
- [12] N. Zugravu-Soilita, R. Kafrouni, S. Bouard, and L. Apithy, "Do cultural capital and social capital matter for economic performance? An empirical investigation of tribal agriculture in New Caledonia," *Ecological Economics*, vol. 182, p. 106933, 2021/04/01/ 2021, doi: <https://doi.org/10.1016/j.ecolecon.2020.106933>.
- [13] E. Tuna and K. Karantininis, "Agricultural cooperatives as social capital hubs – A case in a post-socialist country," *Journal of Co-operative Organization and Management*, vol. 9, no. 1, p. 100134, 2021/06/01/ 2021, doi: <https://doi.org/10.1016/j.jcom.2021.100134>.
- [14] Y. Zhang and W. Zhao, "Social capital's role in mitigating economic vulnerability: Understanding the impact of income disparities on farmers' livelihoods," *World Development*, vol. 177, p. 106515, 2024/05/01/ 2024, doi: <https://doi.org/10.1016/j.worlddev.2023.106515>.