

# Dynamics of collaborative governance of actors in palm oil fresh fruit bunch price setting

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**Abstract.** The second goal of Sustainable Development (SDGs) is the realization of sustainable agriculture to reducing hunger and achieve food security. One of the indicators of sustainable agriculture is social equality which includes fairness in access to information and market access. However, in practice, in realizing social justice, many smallholders cannot access information and markets, resulting in social inequality. Especially in Riau Province, which is the largest palm oil producer in Indonesia, contradictory conditions exist in the trading system for palm oil fresh fruit bunches (FFB), which still leaves independent farmers with many problems. They do not get prices according to government regulations because they have not entered into a partnership with the Palm Oil Company (POC). To overcome this problem, the Riau Provincial Government formed a partnership palm oil pricing team involving the private sector, community, academics and the press. The aim of this research is to create dynamics of collaborative governance in determining prices for palm oil FFB in Riau Province in order to achieve justice in sustainable agriculture. This research uses a postpositivist approach with descriptive qualitative methods. Using data collection techniques in the form of participant observation and in-depth interviews can offer alternative solutions to the problem of inequality in justice for independent farmers. The findings reveal that the dynamics of collaboration between parties, joint motivation to collaborate and equitable pricing, and there is a capacity for joint action in the pricing of oil palm FFB in Riau Province. These three factors have proven effective in providing open access to information and markets for independent partners and non-partner oil palm smallholders in Riau Province.

## 1 Introduction

Indonesia as an agricultural country with the majority of the population farming means that the level of welfare of the people in Riau Province generally depends on the palm oil industry it manages [1]. The second important issue of SDGs which emphasizes sustainable agriculture is very relevant to the palm oil industry in Riau. It is not surprising that oil palm has become a favorite commodity because apart from having a broad economic impact, this plant can also grow and produce well in Riau Province. On the one hand, this industry is

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important for the economy and employment, but unsustainable practices give rise to environmental issues [2] such as deforestation and greenhouse gas emissions. Apart from that, the emergence of economic disparities between the upper, middle and lower classes, changes in customary norms, rentier behavior and the emergence of new conflicts on oil palm land [3], and disparities in palm oil prices between partner and non-partner oil palm farmers [4]. Independent farmers who work independently often earn a lower monthly income compared to independent farmers [5]. In line with the second SDGs goal, the issue of sustainable agriculture, especially in the palm oil industry, should begin to create alternatives for transformation towards better palm oil management.

Significant social gap plagues the industry. Factors such as land ownership, limited access to information and markets, and weak law enforcement, make smallholders trapped in unfair supply chains. They are forced to sell fresh fruit bunches (FFB) at low prices, impacting their income and welfare. This injustice has the potential to trigger social conflict and disrupt regional stability.

Partnerships between smallholders and Palm Oil Companies (POC) can be a solution. Effective partnerships offer broader market access, fairer prices, and the information and resources farmers need. This will increase their income, encourage the adoption of sustainable practices, and contribute to poverty alleviation. Partnership schemes must be designed fairly and transparently, such as the core-plasma model, cooperative partnerships, or offtake agreements, tailored to the specific needs of local farmers.

Partnerships can realize various SDGs 2 targets. Increasing farmers' income and welfare contributes directly to alleviating hunger and achieving food security (target 2.1). Better access to information and resources enables increased productivity and food security (target 2.3). Fair partnerships also promote reduced inequality (target 2.a), while increasing incomes helps end poverty (target 1.1). Overall, this partnership is able to encourage sustainable economic and social development in Riau.

Economic development in the era of globalization, economic development must involve all parties [6]. However, the government's role must be more dominant, because it has the rules and capabilities to support regional economic growth and development, so that regional economic development can develop. So the concept of collaborative development includes government, groups or communities, universities or academics, companies and the media together to develop an area. In a public administration perspective the concept is collaborative governance.

Collaborative governance as a new strategy in government governance that makes various policy stakeholders gather in the same forum to create a common consensus [7]. Meanwhile [8] call collaborative governance a process and structure of decision making and public policy management that involves people (across public institutions, levels of government, and/or boundaries of public, private and civil objectives. Governance Collaborative governance is also broadly defined as “the process and structure of decision making and management of public policy that engages society constructively across the boundaries of public institutions, levels of government, and/or public, private, and community environments to achieve shared goals [8]. Collaborative governance has become a discussion and practice of cross-sector collaboration. Whether public, private-public, private, and non-profit sectors, or different public, different public policy domains, concepts, challenges, and opportunities for cross-border collaborative systems. Various frameworks have been developed to map out various approaches to this phenomenon, ranging from network analysis that emphasizes the structure of inter-organizational relationships to process models that focus on interpersonal dynamics and capacity development [9] to negotiation approaches that emphasizes negotiation and conflict management. All of these conceptual paradigms contribute to the understanding of collaborative governance.

In its development in recent years, collaborative governance has experienced very rapid developments and trends and is being practiced in several fields such as; health aspects [10], in disaster aspects [11], and in the tourism and environmental aspect [12], and in economic aspects [13]. In addition, collaboration can create better business performance and innovation, especially when combined with stricter environmental regulations [14].

Meanwhile, some research on collaborative governance that discusses the palm oil industry includes [15] discussing collaboration to avoid deforestation due to oil palm expansion. Next is research [16] development and prospects for sustainable palm oil management from a collaborative governance perspective addressing various issues related to palm oil production by local farming communities.

In the context of determining the purchasing price for palm oil FFB in Riau Province, there are many problems that cannot be resolved by the Plantation Service alone, but need to be collaborated with several sectors so that they can be resolved. One of them is a related problem submission of data supporting Direct Operational Costs and Indirect Operational Costs in the palm oil FFB production process into crude palm oil (CPO) by POC. The data that the company reported to the team did not comply with existing regulations, including invoices and sales contracts for CPO and kernel. So it was not possible to calculate and verify reports issued in the K index. To overcome this problem, the team innovated by collaborating on an external monitoring partnership with law enforcement officials (Riau High Prosecutor's Office) as working partners by forming the Zapin Security Task Force.

The team also monitors the performance of companies, especially those involved in the palm oil industry in Riau Province, so that they comply with the rules. One of them is determining the purchasing price for palm oil FFB. Supervision of the very large palm oil industry in Riau Province requires collaboration with many elements, so that it can provide certainty in the business climate, one of which is price certainty for all farmers. However, in practice, the weak institutions of independent farmers in Riau Province are exploited by tokes or middlemen. Many independent palm oil farmers sell FFB to middlemen. According to [17] the distribution system is that farmers have the lowest added value compared to traders or collectors and palm oil mills as follows; independent farmers at 18.6%, traders or collectors at 20%, and factories at 28% (crude palm oil and kernels).

The role of collaborative governance with focuses research on coordination, cooperation and collaboration between actors, namely; government (Provincial, Regency and City), industry (palm oil companies/POC and palm oil plantation companies/POPC), society (farmers' associations and farmer groups/cooperatives). For this reason, it is necessary to develop dynamics between actors in a collaborative governance perspective in determining palm oil FFB prices in Riau Province in order to achieve social justice in sustainable agriculture.

## **2 Literature review**

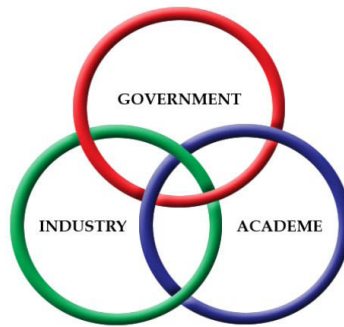
The implementation of collaborative governance to determine the price of oil palm fresh fruit bunches (FFB) in Riau will involve interested parties (helix) such as oil palm planters, oil palm companies, local governments, farmer associations and other stakeholders. Each actor (helix) has their own role in the collaboration process. Where the government plays a role in making regulations and regulating the price of palm oil FFB. Establish relevant policies and regulations to protect the interests of farmers and palm oil companies, as well as ensure a balance between profits and social justice [18].

Considering environmental and sustainability aspects in making decisions about FFB prices is one strategy for improving the welfare of oil palm farmers [19]. Palm oil entrepreneurs and industry parties act as providers of palm oil FFB, providing data and information about production costs, market conditions, and other factors that influence FFB

pricing. Actively participate in collaborative processes to convey industry views and needs regarding FFB pricing.

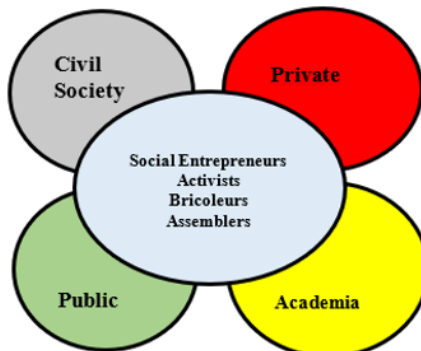
Community organizations play the role of monitoring and voicing community aspirations regarding FFB price determination. Provide valuable input to address the social and environmental impacts of FFB pricing. Ensure that the collaborative process runs transparently and fairly for all parties.

The triple helix model that has been narrated adopts the concept of Economic Development which includes three important elements, namely: government through incentives and the private sector, firms and corporations, and the entry of the science sector and universities [20]. The Triple-Helix (TH) is a model that depicts the intersection of three worlds; academia, business, and government. According [21] the triple helix model (consisting of private, public and civil society) allows us to study the economic knowledge base of the palm oil industry in terms of community support for the development of a region (See Fig. 1).



**Fig. 1.** Model of triple helix.

The Triple Helix (TH) model proposed by [22] was prepared with the involvement of university-industry-government elements. This concept is the beginning of the emergence of helix thinking. Based on the TH innovation model, Quadruple Helix (QH) increases community involvement in decision making. The Triple Helix model was originally developed as a way of conceptualizing public innovation and knowledge flows in open public innovation systems [23]. The Penta Helix (PH) framework, differs from the TH and QH institutional structuralists. PH is a new terminology because in this system there are additional elements of entrepreneurs (social), activists, practitioners, or bureaucrats as additions to the helix. This system emphasizes the active role of society as agents of systemic social innovation, from the bottom up [21]. Society as the fifth helix is an important element in the Penta Helix system (Fig. 2).



**Fig. 2.** Model of Penta Helix.

The Penta Helix model is useful for overcoming multi-stakeholder problems, where stakeholders represent different interests in one location. It is hoped that the collaboration of these five stakeholders can achieve a policy that is supported by various resources that interact with each other synergistically. Economic and social interest factors in the palm oil industry is often aggressive and competitive [24].

### **3 Methods**

This research uses a postpositivist approach with qualitative methods. The data collection technique uses surveys and in-depth interviews to collect information from key informants, namely the Provincial Plantation Service, community self-help partner farmer groups and plasma partners, oil palm plantation companies, academics and the press.

Researchers explored the dynamics of collaborative governance in the process of determining purchasing prices for Palm Oil Fresh Fruit Bunches (FFB) using Nvivo software to help organize data, organize ideas, visualize and help prepare research reports [25].

Based on the general procedures in the NVivo Plus 12 qualitative analysis tool, these concepts are divided into three, namely (1) Data Collection, namely the process of collecting and analyzing as much information as possible that can be observed and recorded. In this context, the data is non-numerical and obtained through field observation methods. (2) Data observation is a method of collecting data through direct study and observation of situations or events in the field. (3) Documentation study is a method of collecting relevant information related to research problems by studying previous documentation [26].

This research aims to comprehensively look at the involvement of actors in the dynamics of collaborative governance in determining palm oil FFB prices in Riau Province in order to achieve social justice in the view of sustainable agriculture with interactive analysis [27] all of which is obtained through verification, data presentation, triangulation as well as drawing conclusions based on the data obtained.

Interactive analysis includes the following steps (1) identifying the roles of actors involved in price-setting collaboration to realize sustainable agriculture, (2) Drawing conclusions, at this stage the results of data identification are used as simple conclusions to be evaluated, the price that has been set becomes a determination information for all stakeholders so that social justice, prosperity and a sustainable economy are achieved, and (3) Analysis, at this stage the data is analyzed based on the research objectives after conclusions are drawn. So, to overcome this weakness, the researcher carried out data and method triangulation, where the data used by the researcher was re-checked for validity and the method used was re-checked for suitability [28].

## **4 Results and discussion**

### **4.1 The role of actors in determining palm oil FFB prices**

Actors occupy a key role in collaboration because all aspects develop through people and their interactions. Referring to the opinion of [29] that analyzing who is involved, at what level, what their roles are, and the alliances and collaboration between them is important for understanding the policy process. These actors may include authorities at various levels, such as city, provincial, or central government. In addition, participants can also include experts, non-governmental organizations, companies, civil society, organizations and other interested parties. In this research, actors play an important role in answering the research questions; to understand how to implement collaborative governance effectively, we first need to understand the roles and perspectives of participants. Actor participation in the system, for

example through power relations; they also act as facilitators in the Collaborative Governance Regime (CGR).

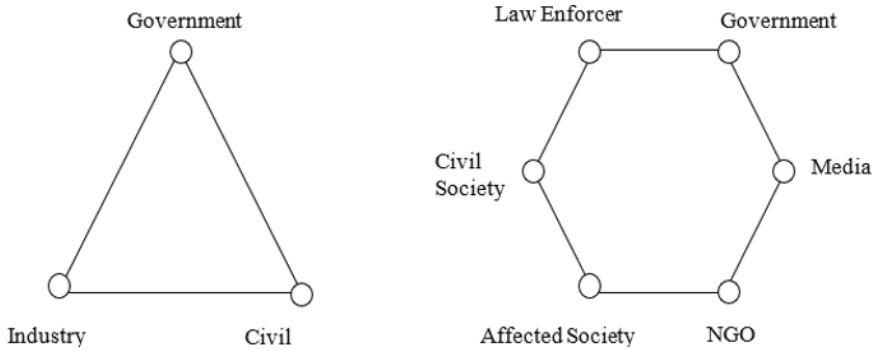
The actors will engage in collaborative dynamics according to [23] that conceptually it is called helix thinking. The first model of this concept was the Triple Helix (TH), then the Quadruple Helix (QH) developed to increase community involvement in decision making. The initial TH model was developed as a way of conceptualizing public innovation and knowledge flows in open public innovation systems. This collaboration model has also been widely used in several research, for example research [30] discussing how the Penta Helix model. [20] discuss how the quad helix concept can be used as a development model for economic research carried out in Canada.

Penta helix framework is different from the structures in the triple-helix and quadruple-helix concepts. Penta helix is a new term because in this system there are additional elements (social), activists, practitioners or bureaucrats who complete the helix. This system emphasizes the active role of society as a driver of systemic social innovation from the bottom up [21]. Society, as the fifth helix, is an important element in the five helix system. In the context of determining the price of palm oil FFB in Riau Province, a team for determining the price of palm oil FFB is formed in accordance with the Riau Governor's Decree (SK) number: 1789/XII/2022 consisting of several actors representing the Government sector, the community sector, the sector and the private sector in accordance with Minister of Agriculture Regulation Number 1 of 2018 and Governor Regulation Number 77 of 2020.

Analysis of FFB pricing actors in Riau Province, the author mapped it in two contexts. First, pricing actors have succeeded in setting the price of palm oil FFB in Riau Province. Determination actors consist of; 1) Government (Riau Provincial Government and Regency/City Government); 2) Industry (GAPKI and POC); 3) Civil society (Apkasindo, ASPEKPIR). Second, the actor determines the price of independent palm oil FFB with an accelerated partnership strategy between farmers and PKS. The partnership is accelerated so that the impact of price fixing can be felt by farmers. However, the problem that occurs in Riau Province is that only a few independent farmers partner with PKS because they do not yet have strong institutions. So the provincial government is making efforts to accelerate partnerships by collaborating with several institutions, namely; 1) Regency/City Government; 2) National NGOs (WEI and WRI), Local NGOs (Karya Serumpun); 3) Affected communities (farmer groups); 4) Academics; 5) Media (RRI and TVRI); 6) High Prosecutor's Office (Zapin Guard Team) and District Prosecutor's Office.

Stakeholder mapping using the triple helix concept of stakeholders involved in determining palm oil FFB prices has not been able to carry out comprehensive policy implementation. Furthermore, the author found that other actors were involved in the price setting process. So in the collaborative actor approach, initially using the quadruple helix concept to become Hexa "hexa helix" by adding two stakeholders, namely NGOs, Media and the Prosecutor's Office. The newly introduced hexa helix model includes six stakeholders namely: (1) government; (2) business sector; (3) higher education institutions; (4) Non-Governmental Organizations; (5) mass media; and (6) affected communities, as in Fig. 3, affected communities are placed as the sixth stakeholder because of their ability to adapt to the palm oil industry.





**Fig. 3.** Changes from the triple helix to the hexa helix in determining the price of **Palm Oil FFB**.

Affected society are the main subject in determining FFB prices and accelerating partnerships shows the ability of a strategic position in this industry. Outside the private sector, [31] also suggests a community-based approach. This approach was emphasized by [32] who conveyed the importance of affected communities in disaster management. These actions require a strong understanding of the disaster area and the ability to organize affected society. So the participation of affected communities is important in this process.

The roles of several helix in the quadruple helix are: 1) Academics functions as a bridge between knowledge and the needs of industry and companies; 2) NGOs and trade organizations can help guide this collaboration; 3) Industry can benefit from knowledge and academic research results to improve production processes; 4) The government acts as a facilitator, providing authority and space for cooperation between industry and universities; 5) Trade organizations provide assistance between academia, industry and government by providing industry experience. Meanwhile, in this research, the role of collaborative governance actors in realizing sustainable agriculture is as follows:

1. Riau Provincial Government: Acting as a facilitator, supervising the team and formulating policies.
2. Regional Government: The role of regional government is to create an environment that supports the development of the palm oil industry and encourages partnership cooperation between PKS and independent farmers.
3. APKASINDO: Facilitates independent farmers, plays a role in communicating the needs and problems faced by oil palm farmers to other parties, such as the government and companies, and participates in negotiations to determine the price of palm fruit.
4. GAPKI: Plays a role in facilitating palm oil entrepreneurs with the government and providing data support to the palm oil FFB pricing team.
5. ASPEKPIR: Playing a role in bridging the interests of plasma partner farmers and independent partners who are represented as well as bridging the aspirations of partner farmer groups in Riau Province.
6. Zapin Guard Team: The Zapin Guard Team plays a role in providing legal assistance, legal considerations, and other legal actions in the civil and state administration fields. Apart from that, it also provides legal assistance regarding the plantation sector and the management of oil palm Fresh Fruit Bunches into Crude Palm Oil (CPO) industry.
7. Industry (Palm Oil Companies): Provide supporting data related to Direct Operational Costs (DOC) report and Indirect Operational Costs (IOC).
8. Academics: The role of academics in this collaboration is to provide views and bridge knowledge with policy formulation carried out by the Riau Province palm oil FFB purchasing price determination team.
9. Media: Has a role in disseminating information related to news of palm oil FFB price determination events to all elements of society.

- 10. NGOs (WEI, WRI and Karya Serumpun): Provide community assistance to increase farmer capacity and group capacity.
- 11. Affected Society: provide critical feedback to influence palm oil industry practices. As local communities, they play a role in influencing policies and land use that can affect their environment and socio-economic life.

In collaborative governance, each actor plays a role in accordance with their respective fields and competencies. In the triple-helix model, the government acts as a facilitator through regulations and policy formulation that facilitate collaboration between universities and industry. However, in the quadruple helix model, two additional helices namely “media and culture-based public” and “civil society” are added, making the innovation framework broader and more comprehensive. Roles in the quadruple helix include academia as a link between knowledge and industry, NGOs and trade organizations guiding collaboration, industry leveraging academic knowledge, government as a facilitator and providing authority, and trade organizations providing industry insight. This collaboration aims to increase efficiency and fairness in setting prices for palm oil FFB and support the development of a sustainable palm oil industry.

With the role of diverse actors according to their fields and abilities, it is hoped that the problems faced by the palm oil industry can be overcome more effectively, have a positive impact on the welfare of farmers in Riau Province, and create a conducive business climate. Several members of the Riau Province palm oil FFB price determination team, such as Sinarmas Group and ASPEKPIR play a role in providing data and verification for palm oil FFB price analysis. Meanwhile, the Riau Province Plantation Service acts as coordinator and data collector in the FFB pricing team. All these actors work together to achieve the goals of sustainable development of the palm oil industry.

#### 4.2 Dynamics of collaboration in realizing sustainable agriculture in Nvivo analysis

From the interviews conducted, the researcher then carried out interactive analysis using the Nvivo 12 application.

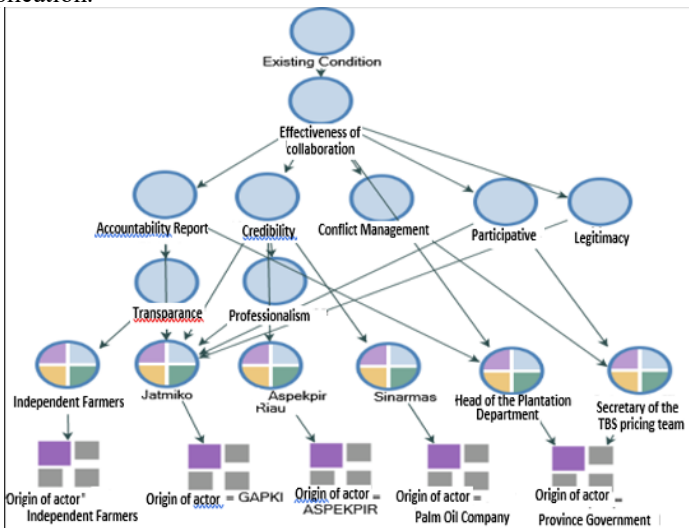


Fig. 4. Collaboration effectiveness project map.

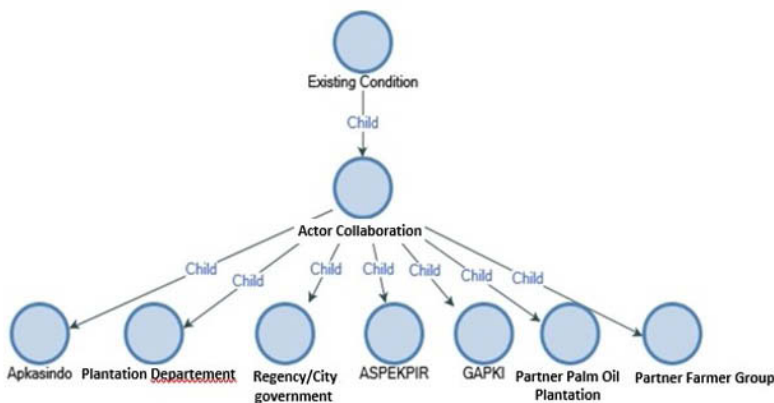


Interactive analysis in the form of verification, data presentation, visualization of interview data which has been carried out with open coding, axial coding and selective coding so that it can be seen how appropriate the relationships between elements identified in collaboration effectiveness are:

1. **Accountability:** Refers to the responsibilities and obligations of a person or institution for a decision. Determining the purchase price for palm oil FFB includes transparency of data provided by the industry to the team.
2. **Credibility:** Refers to the extent to which each team member can be trusted. In the process of determining the price of palm oil FFB, credibility is supported by the professionalism of the team members.
3. **Organizational conflict management:** Refers to how the team resolves conflicts or internal problems so that they do not interfere with performance.
4. **Participation:** Team activity or participation in the agenda carried out by the team. The effectiveness of collaboration in determining FFB purchasing prices is influenced, among other things, by the loyal participation of existing actors.
5. **Legitimacy:** Referring to the formal recognition of the team, the FFB purchase price determination team was formed based on the mandate of Minister of Agriculture Regulation No. 77 of 2018. And ratified by the Decree of the Governor of Riau Province Number. 1789/XII/2022.

Collaboration as a means of combining ideas and resources from stakeholders from various fields. From the day of this research, the principles of collaboration in determining palm oil FFB prices include elements such as openness, division of roles, effective working relationships, respect for differences and sustainability. The results of interviews with members of the palm oil FFB pricing team show that concepts such as contribution, sustainability and institutions are very relevant in a collaborative context. The contribution of participants in the collaboration is considered important, sustainable collaboration has a positive impact, and the collaboration involves various related institutions in the palm oil industry. Interactive analysis of the collaboration has been carried out both theoretically and empirically, confirmed by visualization of the project map. Collaboration provides benefits and effectiveness in determining purchasing prices for palm oil FFB in Riau Province.

From interviews with several informants, the author carried out the following analysis with NVivo:



**Fig. 5.** Actors in collaboration.

In the collaboration of the actors involved in Fig. 5 above, it is known that determining the price of palm oil FFB requires coordination with many elements, so that it can provide price certainty for all partner farmers or a reference for non-partners. However, in practice, there are still weak points in independent smallholder institutions so that they are exploited by middlemen [33, 34].

With the Penta Helix collaboration effort in Fig. 4, it provides mutual motivation to carry out collaboration where there are four components needed to produce an agreement on price determination for palm oil FFB, namely:

1. Trust between stakeholders includes honesty and accountability.
2. The shared understanding within the FFB purchasing pricing team concerns several aspects, namely Collaboration Vision, Collaboration Value, Quality of supporting data and Regulations.
3. Internal legitimacy, in this case the government's role in controlling FFB prices.
4. The commitment of all stakeholders involved in determining FFB prices, in this case includes increasing farmer capacity, conduciveness to the palm oil industry, fairness, and better palm FFB prices. Everything is done to realize the second SDGs goal, namely sustainable agriculture [8].

By setting fair prices and the capacity to take joint action in setting prices for palm oil FFB in Riau Province, this has proven to be effective in providing open access to information and markets for partner and non-partner independent oil palm farmers in Riau Province. In the process of determining the purchase price for fresh fruit bunches, the Riau provincial government also calculates the purchase price of remaining palm oil shells from institutional plasma partner growers and/or independent partners as an additional price.

In the implementation of FFB Price Determination carried out by the provincial level pricing team, the partner company's obligation is to submit data to support the costs incurred during the processing of partner FFB into CPO up to the delivery of the CPO to the Port as stated in the Direct Operational Costs (BOC) report and Indirect Operational Costs (IOC) are one of the variables in the FFB price calculation which will be determined by the Riau Province Level FFB pricing team with the output in the form of calculating the company's "K" Index.

## **5 Conclusion**

This Hexa helix collaboration provides a common motivation to work together and determine fair prices, and the ability to act together in determining palm oil FFB prices in Riau Province. This has proved effective in providing open access to information and markets for partner and non-partner independent oil palm farmers in Riau Province. In determining the purchase price of fresh fruit bunches, the Riau provincial government also calculates the purchase price of remaining palm oil shells from institutional plasma partner farmers and/or independent partners as an addition to the FFB price determined.

Based on Regulation No. 1/2018 of the Minister of Agriculture, a team was formed to determine the purchase price of fresh fruit bunches. Palm Oil Production by Planters in Riau Province with the decision of the Governor of Riau, and then called the FFB Purchase Price Setting Team.

In the implementation of the FFB price determination process carried out by the Provincial FFB Price Determination Team, the partner company is required to submit data to support the costs incurred during the processing of the partner's FFB into CPO until the delivery of the CPO to the port as stated in the Direct Operating Cost (DOC) report and

Indirect Operating Cost (InDOC) is one of the variables in the FFB price calculation which is determined by the FFB Price Determination Team at the Riau Province level with the output in the form of calculation of the company's "K" index. Further analysis of the dynamics of collaboration within the team includes three aspects (principled engagement, capacity to joint action and shared motivation). Leadership plays an important role in the success of collaboration. The components of shared motivation in collaboration are trust, shared understanding, internal legitimacy and commitment. The government, through the Estate Crops Agency, is seen as the initiator, facilitator, communicator and mediator in the collaborative process. Human and financial resources are also seen as important components of collaboration, with the need for a team of competent individuals and adequate financial resources to drive collaboration forward.

## References

1. D. Anggraini, *Analisis Pengaruh Perkebunan Kelapa Sawit Terhadap Perekonomian Di Provinsi Riau Tahun 2002-2016* (Universitas Islam Indonesia, Sleman, 2018)
2. B. D. Leonanda, *Bul. Profesi Ins.* **2**, 102 (2019)
3. S. Suryadi, A. H. Dharmawan, and B. Barus, *J. Ilmu Lingkung.* **18**, 367 (2020)
4. Y. F. Nggarang, M. Andri, R. Andriani, T. Pandelaki, *Harga Sawit Naik, Praktik Eksklusif dan Strategi Petani di Masa Pandemi Covid-19* (BBK Book and Knowledge, 2021)
5. J. S. H. Lee, J. Ghazoul, K. Obidzinski, and L. P. Koh, *Agron. Sustain. Dev.* **34**, 501 (2014)
6. D. Djadjuli, *Din. J. Ilm. Ilmu Adm. Negara* **5**, 8 (2018)
7. C. Ansell and A. Gash, *J. Public Adm. Res. Theory* **18**, 543 (2008)
8. K. Emerson and T. Nabatchi, *Public Perform. Manag. Rev.* **38**, 717 (2015)
9. C. Benítez-Ávila, A. Hartmann, G. Dewulf, and J. Henseler, *Int. J. Proj. Manag.* **36**, 429 (2018)
10. M. N. Alamsyah, M. Nawawi, and S. Sisrilnardi, *Int. J. Soc. Sci. Educ. Commun. Econ. (SINOMICS JOURNAL)* **1**, 855 (2023)
11. M. S. Bang and Y. Kim, *Disaster Prev. Manag.* **25**, 212 (2016)
12. C. A. D. Kirana and R. A. Artisa, *Kolaborasi J. Adm. Publik* **6**, 68 (2020)
13. E. E. Supriyanto, H. Warsono, H. Purnaweni, *Budapest Int. Res. Critics J.* **4**, 13697-13710 (2021)
14. J.-T. Huang-Lachmann and J. C. Lovett, *Cities* **54**, 36 (2016)
15. F. Brandão, G. Schoneveld, P. Pacheco, I. Vieira, M. Piraux, and D. Mota, *World Dev.* **139**, 105268 (2021)
16. W. H. Hardiwinata, I. M. Lely, C. Saleh, and S. Zauhar, *Russ. J. Agric. Socio-Economic Sci.* **8**, 142 (2020)
17. P. Papilo, D. Prasetyo, M. Hartati, P. G. Ekie, and A. Rinaldi, *J. Teknol. Ind. Pertan.* **30**, (2020)
18. I. S. Nabara, N. Man, N. H. Kamarulzaman, and Z. Sulaiman, *Clim. Dev.* **13**, 475 (2021)
19. S. Ponte, *Rev. Int. Polit. Econ.* **29**, 818 (2022)
20. A. M. Tonkovic, E. Veckie, and V. W. Veckie, *Econ. East. Croat. Yesterday, Today, Tomorrow* **4**, 385 (2015)

21. I. Calzada, Co-Designing Econ. Transit. Radic. Approaches Dialogue with Contempl. Soc. Sci. 191 (2018)
22. H. Etzkowitz and L. Leydesdorff, Res. Policy **29**, 109 (2000)
23. I. Calzada and P. Cowie, Reg. Mag. **308**, 25 (2017)
24. R. S. Astuti, H. Warsono, A. Rachim, (2020). *Collaborative Governance dalam Perspektif Administrasi Publik (Tim DAP Press (ed.))* (Universitas Diponegoro Press, Semarang, 2020)
25. K. Jackson, P. Bazeley, and P. Bazeley, *Qualitative Data Analysis with NVivo* (Sage, 2019)
26. J. W. Creswell and V. L. P. Clark, *Designing and Conducting Mixed Methods Research* (Sage publications, 2017)
27. M. E. Kiger and L. Varpio, Med. Teach. **42**, 846 (2020)
28. M. S. Linneberg and S. Korsgaard, Qual. Res. J. **19**, 259 (2019)
29. B. Arts and P. Leroy, *Institutional Dynamics in Environmental Governance* (Springer, Dordrecht, 2006)
30. M. Afandi, E. Anomsari, A. Novira, and S. Sudartini, in *Proc. Third Int. Conf. Adm. Sci. ICAS 2021, Sept. 15 2021, Bandung, Indones.* (2022)
31. B. C. Lin and C. H. Lee, Int. J. Disaster Risk Reduct. **93**, 103774 (2023)
32. A. Rachim, Y. Warella, R. S. Astuti, S. Suharyanto, Prizren Soc. Sci. J. **4**, 20 (2020)
33. M. Jeong, S. Kim, E. Yi, and K. Ahn, Energy Strateg. Rev. **45**, 101008 (2023)
34. R. Astuti, M. A. Miller, A. McGregor, M. D. P. Sukmara, W. Saputra, and D. Taylor, Land Use Policy **114**, 105942 (2022)