

Agricultural Policy: Systematic Literature Review

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Abstract

In general, agriculture is a neutral sector in a country. In this case, many countries rely on the agricultural sector, where agriculture is the primary production in economic development, often referred to as agrarian countries. The main objective of agricultural policy is to maintain agricultural production by achieving economic benefits compatible with poverty reduction as a final reaction to meet the population's social needs with the least possible impact. Seeing the problems and opportunities in the agricultural sector that also have socio-political impacts, this research is vital to understanding the implications and implementation of agricultural policies. This research uses a bibliometric analysis method to see the research development with the keyword "agriculture policy" on Google Scholar search with a vulnerable time in 2020-2023, which produces data for as many as 155 articles. The results show that the publication trend regarding "agriculture policy" has critical players who are relevantly attracting scientists to study by looking at the trend of keywords that most often come out, making discussions about agricultural policy a form of literature that can be a reference or consideration in policy making. Thus, food policy research must also continue to be carried out to obtain new knowledge as a reference in advancing agriculture in the scope of science.

Keywords: *Urban Farming; Food Security; Agriculture*

How to Cite: Nasution, F.A., Fahreza. I., & Thamrin, M.H. (2023). Agricultural Policy: Systematic Literature Review, *Journal of Peasant Right's*, Vol 2 No. 2: page 23-32

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INTRODUCTION

Agriculture is a human activity that involves using biological resources to produce food, industrial raw materials, energy sources, and environmental management. The practice of agriculture first began around 10,000 years ago in the Fertile Crescent of Mesopotamia (part of present-day Iraq, Turkey, Syria, and Jordan), where edible seeds were initially collected by people who were hunter/gatherers (Unsworth, 2010). Agriculture cultivates natural resources or plants to produce food and contribute to industrial raw materials. Agricultural policy must be studied further, considering that several developing countries have made agriculture one of the solutions to alleviating poverty in their countries.

In general, agriculture is a neutral sector in a country. In this case, many countries rely on the agricultural sector, where agriculture is the primary production in economic development, often called an agrarian country. Therefore, in the agricultural sector, many roles are involved in agricultural development in a country, such as government, financial institutions, higher education and consumers who contribute to strengthening agriculture in a region. Government policy is one of them as an institution that has a vital role in developing the agricultural sector.

The agricultural sector is still hampered because many problems are still faced in carrying out agricultural productivity, such as in the scope of climate, welfare, economy and land protection. This is a hierarchical part of the state's involvement, which has the authority to regulate agricultural

problems—one island is an essential issue in agricultural development activities studied in the literature. The Protection of Sustainable Food Agricultural Land (PLP2B) issue is one of the many complex agricultural problems (Setiawati, Mardjo, & Mahita Paksi, 2019). Land is the primary raw material in agricultural production, but many conflicts still occur due to land struggles, hampering the development of the agricultural sector.

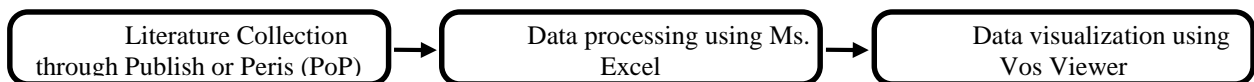
In addition, the stagnation of agricultural processing makes the agricultural sector less attractive today because many other industrial sectors are more advanced by following technological developments, which makes the agricultural sector less attractive to the current generation. There is a decline in the interest and involvement of millennials and Generation Z in the agricultural sector due to several factors, such as limited access to funding and land, agricultural professions that are considered unsuitable for the future, and lack of support for millennials and generation Z (Madyar Dewi, Widhiyoga, & Wijayati, 2022).

Agricultural policies are essential to study further, considering that many developing countries use agricultural policies as one of the solutions to alleviating poverty in their countries. (Septiadi & Nursan, 2020). The study of agricultural policy can contribute to the development of agriculture because the government can use the literature on agricultural policy as a consideration in the formulation of policies where decisions taken as the holder of control in a country's policy formulation position become a part that significantly affects the agricultural sector which also has an impact on the country's economy.

The main objective of agricultural policy is to maintain agricultural production by achieving economic benefits compatible with poverty reduction as a final reaction to meet the population's social needs with the least possible impact (Ikhsani, Tasya, Sihidi, Roziqin, & Romadhan, 2020). With this, agricultural sustainability has a great opportunity in the future as a representation of good agricultural policy by following the times where there is also much literature that discusses technological advances utilized in the agricultural sector's development. This can be an opportunity from the problem of agricultural sustainability as a guardian of food production in the future. Seeing the problems and opportunities in the agricultural sector, which also impact socio-politics, this research is essential to understand the implications and implementation of agricultural policies.

RESEARCH METHOD

This research uses the bibliometric analysis method to see the research development with the keyword "*agriculture policy*". Bibliometric analysis has a role in evaluating the results of scientific research, mapping the field of science, and tracking/tracing the development of new knowledge in a particular field. (Muhammad, Marchy, Rusyid, & Dasari, 2022). Bibliometric analysis can find research trends, prolific authors, author partnerships, and scientific papers' most frequently used keywords. With the following data collection structure:



The research begins with data collection through the Publish or Perish (PoP) application by entering the keyword “agriculture policy” in a Google Scholar search with a vulnerable time in 2020-2023, which produces data from as many as 155 articles, then processing the data from in Ms Excel by tidying up and arranging the data in excel form to facilitate data visualization, at the last stage, namely data visualization using the Vos Viewer application where data processing at this stage produces an interactive network of a set of data entered in bibliographic form with the RIS (Research Information Systems) format. In data collection using the Publish or Perish (PoP) application with the keyword “agriculture policy” results in the following Citation Metric:

Tabel 1 Citation Metric of Agriculture Policy publications

Query	Agriculture Policy from 2020 to 2023
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Source	Google Scholar
Papers	155
Citations	1107
Years	4
Cites_Year	276.75
Cites_Paper	7.19
Cites_Author	386.53
Papers_Author	82.72
Authors_Paper	2.48
h_index	17
g_index	31
hc_index	22
hI_index	5.16
hm_index	9.85
QueryDate	25/08/2023 16:55
Cites_Author_Year	96.63
hI_annual	3.00
h_coverage	73.4
g_coverage	87.4
star_count	10
year_first	2020
year_last	2023
hA	10

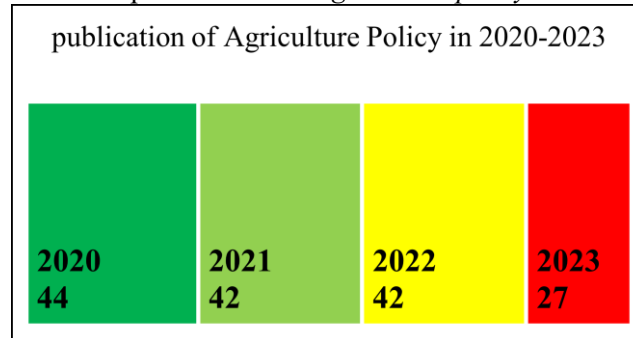
Source: Data processed by the author, 2023

RESULTS AND DISCUSSIONS

1. *Agricultural Policy*

Agriculture covers various aspects, such as curriculum development, import policy, ecotourism development, and financial performance of agricultural companies. These studies can provide information and recommendations for the government and industry players in developing the agricultural sector. According to Johan Swinnen in his book "The Political Economy of Agricultural and Food Policies", political economy models of agricultural and food policies often consider "producers", "consumers", and "taxpayers" as the primary agents for studying policy impacts, political incentives, and impacts on policy outcomes. The reason is to avoid unnecessary complications in deriving policy effects (theoretically) and the absence of disaggregated information on the impact of policies on various agents inside or outside the value chain (empirically) (Swinnen, 2018). Research on agricultural policy amplification is interesting because it discusses agricultural development and relates to the "*Political-Economic Paradigm*", seen throughout 2020-2023 in more than 150 articles discussing agricultural policy from various perspectives.

Figure 1 Total publication of “agriculture policy” in 2020-2023



Source: Data processed by the author, 2023

Over the past four years, few articles have been published on “agriculture policy”. Based on Figure 1, in 2020, there were 44 article publications; in 2021, there were 42 article publications; in 2022, there were 42 articles; while in 2023, as of August, only 27 articles were published. Looking at the number of publications of articles on “Agriculture Policy” is not too much to be obtained. However, with the consistency of the number of publications, it can be understood that the segmentation of “Agriculture Policy” is becoming a complex topic along with current socio-political developments.

2. Top Article Ranking

Looking at the publication of “Agriculture Policy”, researchers developed data results taken from the Publish or Perish (PoP) application with the results of a total of 155 articles. Researchers mapped the top 10 ranked articles based on GSRanking. By looking at the top articles, we can measure the impact of publications from the number of citations as a form of bibliographic analysis. In this measurement, we can see the influence of this study on the research trends studied; in this case, ten articles are most cited with a total number of citations of 990 search citations regarding “agriculture policy”. In this case, it can be concluded that the Agriculture Policy study significantly influences the agricultural policy literature and is the most researched in 2020.

Table 2 Top 10 “agriculture policy” articles based on GSRanking

Cites	Authors	Title	Year	GS Rank	Cites Per Year	Cites Per Author
66	L.J. Cole	A critical analysis of the potential for EU Common Agricultural Policy measures to support wild pollinators on farmland	2020	1	0,9166 66667	66
48	H. Cao	The impact of land transfer and farmers' knowledge of farmland protection policy on pro-environmental agricultural practices: The case of straw return to fields in Ningxia, China	2020	2	0,6666 66667	48
42	J.P. Aryal	Agricultural sustainability under emerging climatic variability: The role of climate-smart agriculture and relevant policies in India	2020	3	0,5833 33333	42
35	K. Tang	Agricultural chemical oxygen demand mitigation under various policies in China: A scenario analysis	2020	4	0,5048 61111	35
32	R. Tarjuelo	Changing the fallow paradigm: A win-win strategy for the post-2020 Common Agricultural Policy to halt farmland bird declines	2020	5	0,4631 94444	32
28	E. Kiryluk-Dryjska	Local determinants of the Common Agricultural Policy rural development funds' distribution in Poland and their spatial implications	2020	6	0,3979 16667	28

26	Y. Pan	Spatiotemporal simulation, early warning, and policy recommendations of the soil heavy metal environmental capacity of the agricultural land in a typical industrial city in China: Case of Zhongshan City	2021	7	0,5416 66667	26
24	Y. Buitenhu is	Does the Common Agricultural Policy enhance farming systems' resilience? Applying the Resilience Assessment Tool (ResAT) to a farming system case study in the Netherlands	2020	8	0,3333 33333	24
24	A. Mdee	Neither sustainable nor inclusive: a political economy of agricultural policy and livelihoods in Malawi, Tanzania and Zambia	2021	9	0,5	24
23	Y. Gao	Fiscal policy dilemma in resolving agricultural risks: Evidence from china's agricultural insurance subsidy pilot	2021	10	0,4930 55556	23

Source: Data processed by the author, 2023

Based on Table 2, 10 top "*agriculture policy*" articles discuss how agricultural policy implementation is linked to many problem variables. The findings from the top 10 articles are dominated by discussions about land policies, such as in the study (Cao, Zhu, Heijman, & Zhao, 2020), and policy implications for sustainable agricultural development by WTP. The positive impact of land leasing and the negative impact of land fragmentation on PAPs indicate the importance of land consolidation policies by incorporating plot-connecting interventions in the land leasing market. The issue of capital impacting the political economy and food security was also a topic of considerable discussion, as found in the study's findings (Mdee, Ofori, Chasukwa, & Manda, 2021). Policy frameworks are dominated by aid-driven donor discourse. State investment in agriculture remains limited. Private finance is out of reach for smallholders, and out-grower schemes have disappointed many involved. Elite and commercial interests take precedence in the legal framework and the formal business of institutional actors.

3. Top Keyword Ranking

The appearance of a journal article, particularly in the context of the search results provided, refers to the publication and availability of the article in a scholarly journal. Keywords in articles are terms used to characterize the topic or substance of the article. Keywords are often selected based on the frequency of the term in the article or the themes mentioned in the paper and can also be used as search recommendations by information seekers across multiple publications.

The top most frequent keywords in publications on "*agriculture policy*" were identified as critical players in the development of this research. The keywords of this research are described as the most frequently discussed items in agricultural studies. Using keywords for analysis can give an idea of what phenomena are experienced each year, making the publication a discussion. In the data processing carried out on Vos Viewer, the frequency of keywords that most often come out (occurrences) in the search for publications on "*agriculture policy*" there are 44 words that are often used.

Table 3 Verify Selected Term on data processing in Vos Viewer

term	occurrences	relevance score
policy	102	0.7391
agriculture	61	0.638
impact	55	0.2436
farmer	54	0.5057
effect	51	0.5558
development	50	0.4339
model	50	0.5407

agricultural policy	43	0.972
approach	41	0.5352
area	39	0.4969
level	39	0.3084
production	38	0.4902
change	35	0.4535
region	33	0.6828
measure	31	0.6349
common agricultural policy	28	20.982
government	28	0.4543
support	27	13.652
agricultural sector	24	0.7433
sector	24	18.989
challenge	22	26.037
environment	22	0.4091
land	22	0.5876
role	21	0.8314
use	20	10.386
evidence	19	0.765
income	19	1.041
subsidy	19	0.8461
difference	18	11.507
relationship	18	0.6912
implementation	17	0.5284
increase	17	0.9331
time	17	0.5118
need	16	1.72
quality	16	0.892
application	15	10.417
agricultural development	14	27.949
importance	14	1.156
policy implication	13	0.778
addition	12	0.6267
agricultural product	12	18.241
food security	12	0.9094
effectiveness	11	16.017
europa union	11	39.271

Source: Data processed by the author, 2023

Based on Table 3 above, the keyword "Policy" comes out most often in the search for publications on "agriculture policy," as many as 102 occurrences that discuss the implications and implementation of policies in various agricultural problems—followed by "agriculture" (61), "farmer" (54), and "agricultural policy" (43), "area" (39), "production" (38), "common agricultural policy" (28), "agricultural sector" (24), "quality" (16), "agricultural development" (14), "agricultural product" (12), "food security" (12), "environment" (22), "land" (22) which discuss many challenges and problems faced in the agricultural sector such as land productivity, food security to state involvement in the agricultural sector. In data processing using keywords as a

search in this publication, many research sources provide solutions in dealing with problems in the agricultural sector, such as "impact" (55), "effect" (51), "model" (50), "approach" (41), "level" (39), "change" (35), "measure" (31), "challenge" (22), "evidence" (19), "defference" (18), "implementation" (17), "increase" (17), "application" (15), "addition" (12), "effectiveness" (11) which discuss and explain how the application in solving agricultural problems in the scope of policy with empirical and theoretical approaches as well as keywords that discuss the involvement of the state and government in contributing to the agricultural sector, such as "development" (50), "region" (33), "government" (28), "support" (27), "role" (21), "subsidy" (19), "relationship" (18), "importance" (14), "european union" (11) where the state and government have the authority to make regulatory products regarding land and land use which are legally formulated in the constitution.

4. Visual Analysis of Publications on Research Topics

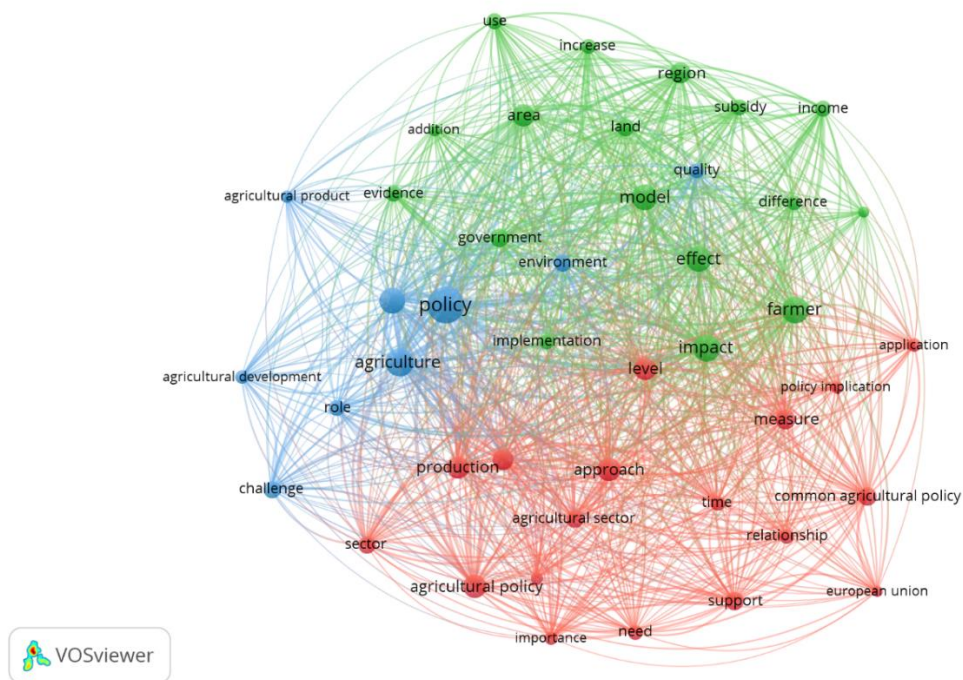
The researcher focuses on problems and challenges in the agricultural sector during the 2020-2023 period within the socio-political scope. The Vos Viewer data processing results in 3 divisions into clusters that show the most related network connections in this publication.

Table 4 Cluster map of Publications on “Agriculture Policy”		
Cluster 1	Cluster 2	Cluster 3
addition	agricultural policy	agricultural development
area	agricultural sector	agricultural product
data	application	agriculture
difference	approach	challenge
effect	change	development
effectiveness	common agricultural policy	environment
evidence	food security	policy
farmer	importance	quality
government	level	role
impact	measure	
implementation	need	
income	policy implication	
increase	production	
land	relationship	
model	sector	
region	support	
subsidy	time	
use		

Source: Data processed by the author, 2023

Based on table 4 above, 3 clusters appear between items on this research topic. There are 18 items in Cluster 1, 17 in Cluster 2, and 9 in Cluster 3, which illustrates the correlation of each item forming a relationship between topics that discuss agricultural policy. Cluster 1, as the dominant cluster, contains items related to policy and government, and Cluster 2 has a similar amount filled with items about agriculture, land and food. These two clusters directly intersect agriculture, which focuses on policy implementation. Cluster 3 contains items on the challenges and problems faced within the “agriculture policy” scope. The connection between the three clusters illustrates how research publications on “agriculture policy” build a network of discussions on policy models in the application to the agricultural sector to resolve problems and challenges in the agricultural sector.

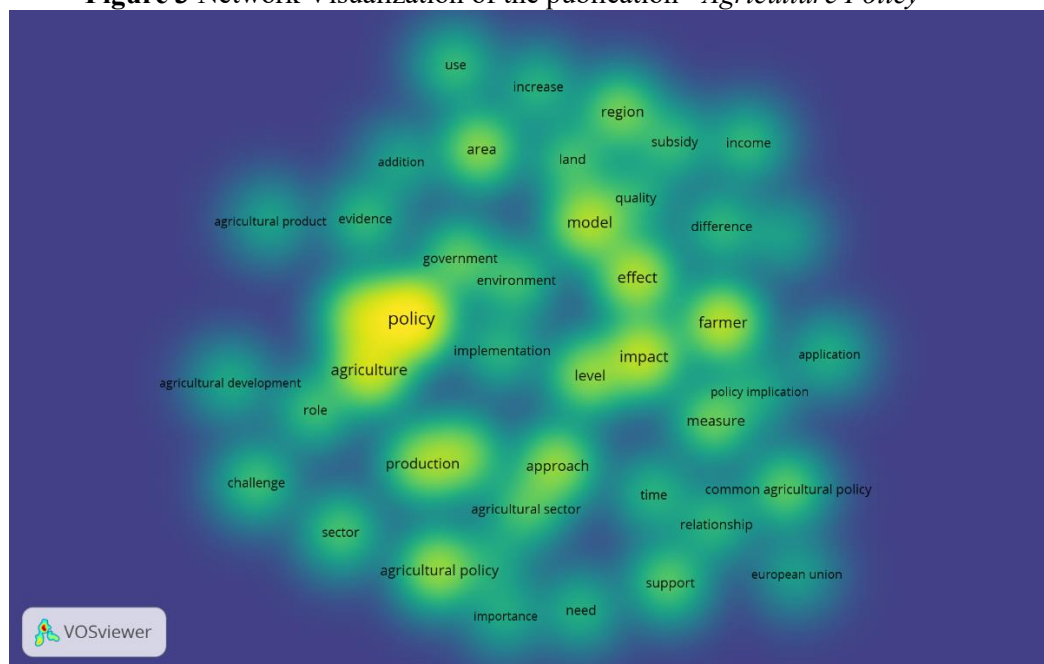
Figure 2 Network Visualization of the publication “agriculture policy”



Source: Data processed by the author, 2023

Network Visualization of the publication “agriculture policy” illustrates the correlation lines between related items or interactive networks with the dominance of cluster 1 items (red colour), which are most correlated (dashes) with cluster 2 (green colour) and cluster 3 (blue colour) which is also most correlated (dashes) with cluster 2 (green colour). By implication, it can be concluded from Figure 2 that Cluster 1 (policy implementation) and Cluster 3 (problems and challenges) dominate Cluster 2 (agricultural development) in that the trend in the development of research on agriculture is directly influenced by policies and also agricultural problems faced in a region.

Figure 3 Network Visualization of the publication “Agriculture Policy”



Source: Data processed by the author, 2023

Agricultural policy issues provide a new view of the development of agriculture in the last four years, which can be seen in Figure 3; it can be explained that the colour contrast describes the most influenced and influencing where outside of the words "policy" and "agriculture" there are keywords "production" and "farmer" which have the brightest colour contrast and can be defined that the topic of production and farmers in agricultural policy has a significant contribution to the publication of this "agriculture policy" research. There are also the words "impact" and "model" that have the brightest colour contrast, which is defined by the impact and representation of an object being a topic that is quite often used in research on "agriculture policy".

Agriculture is a widespread food source for farming families, not agriculture with a commercial bias. Traditionally, agriculture is a simple way to obtain food for the family (Chanti, 2017). Fundamentally, agriculture directly meets the premier needs of people for whom agriculture is crucial in life. It secures an adequate agricultural food supply, resulting in lower prices and higher consumption for the rural and urban poor, enabling them to earn enough money to invest in new technologies (Shikur, 2020). In this case, the trend of publications on "agriculture policy" has key players that relevantly attract scientists to study by looking at the trend of keywords that most often come out to make discussions about agricultural policy as a form of literature that can be a reference or consideration in policy making.

CONCLUSION

Agricultural policy is an essential instrument in improving agricultural progress that significantly impacts food production and economic development. Agriculture is an activity that should be preserved because society's basic needs rely on agriculture's sustainability. In this case, the instruments directly involved in the development of agriculture must have a positive effect as a form of support for the sustainability of agriculture. The government and state have crucial roles as the owners of the authority in the formation of policies that affect the sustainability of agricultural activities. For agrarian countries, agriculture is the primary sector in driving the economy. It must be able to make a total contribution to the formulation of policies that have a positive influence on agricultural sustainability. With this, agricultural policy studies have become a positive trend as a form of literature and consideration in providing policies for optimizing food production. Thus, agricultural policy research must also continue to be carried out to obtain new knowledge as a reference in advancing agriculture in the scope of science.

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