

# The consumer in the process of building agricultural public policies<sup>1</sup>

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**Abstract** – Consumer as the actor in public policy building is crucial in the field of agriculture. Yet, although consumers are central actors in the formulation of public policy, there are a limited number of publications specifically addressing the issue of their role as an actor in the process of building public policies in the area of agriculture. In the present article, a literature review was conducted to examine consumers' function in agriculture policymaking. The review methodology answered the key research questions presented in the study and the conclusions were drawn on the review literature. The most significant findings from the literature analysis reveal that consumers influence public policy formulating through demand and, that the public policies most predominant in agriculture were based on food sustainability, self-sufficiency, and public health. Of the findings obtained, environmental science, medicine, and agricultural and biological science were the top three prolific subject areas. In the final analysis, further research needs to be done regarding the role of consumers in agriculture public policy formulations. The emphasis on consumers viewpoints in agricultural public policymaking yields successful policies and programs. Focusing on the consumer extends support to the government and other policymakers in making better policies that are effective and receptive to the consumers while achieving the goals of sustainability in agriculture.

**Keywords:** agriculture, consumer confidence, sustainability.

## O consumidor no processo de construção de políticas públicas agrícolas

**Resumo** – O consumidor como ator na construção de políticas públicas é crucial no campo da agricultura. No entanto, embora os consumidores sejam atores centrais na formulação de políticas públicas, há um número limitado de publicações que abordam especificamente a questão do seu papel como ator no processo de construção de políticas públicas na agricultura. Neste trabalho, foi feita uma revisão da literatura para examinar a função dos consumidores na formulação de políticas agrícolas. A metodologia de revisão respondeu às principais questões de pesquisa apresentadas no estudo, e as conclusões foram obtidas com base na revisão de literatura. Os resultados mais significativos da análise da literatura revelam que os consumidores influenciam a formulação das

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políticas públicas através da demanda e que as políticas públicas mais predominantes na agricultura foram baseadas na sustentabilidade alimentar, autossuficiência e saúde pública. Entre os resultados obtidos, a ciência ambiental, a medicina e a ciência agrícola e biológica foram as três áreas mais prolíficas. Em última análise, é necessário fazer mais pesquisas sobre o papel dos consumidores nas formulações de políticas públicas para a agricultura. A ênfase no ponto de vista dos consumidores na formulação de políticas públicas agrícolas gera políticas e programas bem-sucedidos. O foco no consumidor estende o apoio ao governo e a outros formuladores de políticas na criação de melhores políticas que sejam eficazes e receptivas aos consumidores, enquanto atingem os objetivos de sustentabilidade na agricultura.

**Palavras-chave:** agricultura, confiança do consumidor, sustentabilidade.

## Introduction

Over the last several decades, agriculture yields have been steadily increasing in many industrialized countries (Fanadzo & Ncube, 2018). However, the industry faces multiple challenges. According to Reisch et al. (2013), the production of agricultural faces many threats, such as climate change, land-use struggles, increasing health and social cost, unsustainability, globalization, consumption shifts, change in food styles, and lack of food security. These challenges are identifiable mostly in consumer behaviours and values and through policies and regulations. Moreover, agriculture is a demanding and resourceful industry. For instance, the majority of the freshwater, up to 90% used in the world is consumed in agriculture and the industry is also the main polluters of water bodies (Reisch et al., 2013).

Policies are required to reverse the challenges experienced in agriculture and to make the appropriate changes, however, policymaking challenges in agriculture is also evident and; in most cases, lacks self-improving relationships. As reported by Lang (2005), the relationship between evidence and policy is referred to as a mutually self-improving relationship. In other words, policy satisfies the search for evidence. For instance, in nutrition, policymakers have been inadequate in responding to evidence of rising global obesity epidemic, this failure was mainly due to the lack of support from the

respective organizations and political forces. Yet, the self-improving relationship between evidence and search was absent (Barling & Lang, 1999). Nevertheless, one single policy cannot address all the challenges faced in the industry. Top-down and bottom-up<sup>4</sup> policies are needed to create universal changes and allowing environments for these changes (Iles & Marsh, 2012). Also, a given policy solution for one specific issue can create a problem for another. For instance, high agricultural prices alleviate the problem of farmers, but it creates a challenge for consumers (Lindblom, 1991). Agriculture and the implementation of respective policies are significant to the economy and the development of people.

Agriculture is the foundation of public health and nutrition: we cannot eat if we do not have food (Nestle, 2009). According Lindblom (2012), policy formulation for development is created of decisions to solve a problem. Hence, as a priority, development of policies within agriculture to address the issues is highly recommended (Reisch et al., 2013).

Agriculture has many direct related public policies as well as indirect public policy, such as, the public policy of food and health, nutrition, sustainability, farming systems, pesticides, water and energy footprints, willingness to pay and plant health. As stated by Reisch et al. (2013), the formulation of good policy involves research-minded policymakers and policy-

<sup>4</sup> The top-down approach starts from the government to the project, which involves the people and bottom-up approach starts with the target groups as the initiators and actual implementors of policy.

mind researchers. Public policy is often generally focused on state or national level. The key players who are responsible for public policy formulating are the government. Hence, communication between the government and other groups is important for a successful policy application and the result (Mills et al., 2011).

Most policymaking is politically complex and inevitable (Lang, 2005). In the United States, agricultural policies in areas of grains, meats and dairy are strongly influenced by the political process (Iles & Marsh, 2012). In like manner, politicians identify that they cannot formulate a public policy of food and health in Europe if the end consumer's wants and needs are not included in the process (Barling & Lang, 1999). The role of Government, especially in public policy relating to food is to protect the safety of consumers and the environment (Pearsall, 2013). The prerequisite of food policy is a feasible agricultural sector (Reid, 1985). During Obama's presidential campaign, health care and climate change were one of the key issues which depended on the manner of agriculture. Agricultural reform<sup>5</sup> is important in the development of these critical issues (Nestle, 2009). Recently, school and fruit vegetable agricultural policy regarding public health have been introduced within the European Union (EU)<sup>6</sup> in 2008. Public health has been a key driver of this policy predominantly in the area of obesity (De Sa & Lock, 2008).

There are several actors including stakeholders, policymakers, industry and consumers in the formulation of agriculture public policy, however, this article will focus on the end consumers or end-users<sup>7</sup>. The end consumers are the dominant consumers of most agriculture public policy. In a consumerist world<sup>8</sup> (Barling & Lang, 1999), it is required that public policymakers

understand the consumer's viewpoint as a means to exploit the probability of establishing successful policies and programs (Antil, 1984). Consumer activists amongst others are assuming a critical function in the building and modifying of public policy (Lindblom, 2012). The citizen, in the capacity as the consumer, contributes to the policymaking process of public policies through choice (Parsons, 2007). Consumers are also considered in the evaluation of current policy centred on consumer citizen<sup>9</sup> satisfaction of public services and others (Lindblom, 2012).

Although consumers are central actors in the formulation of public policy, there are a limited number of publications specifically addressing the issue of the consumer role as an actor in the process of building public policies in the area of agriculture. Hence, a literature review was conducted aiming to collect and evaluate all related papers in the field by means of a structured search for literature. Based on this, the major aim of conducting this review was to achieve more information about the following two issues: (I) What role do consumers play in public policy formulation in agriculture? And (II) What are the main aims of the agricultural public policies implemented and how does it affect consumers?

To satisfy these objectives, a few related terms are defined in this section. A conceptual framework is provided capturing the related research, following the second section which describes the applied research methodology. And at the end of the paper, in section three, presents an analysis of the results and main findings accompanied by a short conclusion addressing the limitations of the research and including future research suggestions to conclude the paper.

<sup>5</sup> A governmental program referring to the redistribution of agricultural land which often includes the laborers or farmers.

<sup>6</sup> The European Union (EU) is a unified political and economic union comprises of 28 member countries, which is primarily located in Europe.

<sup>7</sup> An end consumer is referred to a person, organization or group of people who purchase a product or service and uses or consumes the product or service for their personal use or benefit.

<sup>8</sup> The attainment of consumer goods or services in large quantities.

<sup>9</sup> A consumer citizen is an individual whose purchase selections are grounded on social, economic, moral and environmental considerations.

To set up the foundation for the ensuing literature review, key terms are outlined. According to John (1998, cited by Harguindeguy, 2013, p.26, our translation), “a public good belongs to everyone in general and to no one in particular, such as air, common welfare, public lighting, peace or defence”. Hence, public policy can be defined as programs developed by public authorities (Harguindeguy, 2013). In line with these definitions, “a policy is selected simultaneously to accomplish individual objectives and the objectives single-handedly” (Lindblom, 2012, p.81, our translation). Likewise, a consumer is an individual who buys or uses private and public products or services for their personal use and benefit. Therefore, conferring to (Thorelli, 1972, p.192) “the delivery system of consumer policy comprises consumer education, consumer information and consumer protection”. Keywords from the process of building public policies in agriculture and from the consumer as the actor was merged for this search.

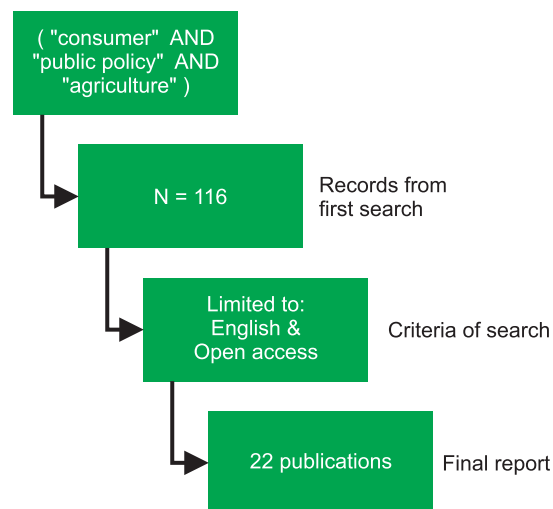
As it outlines the primary theme of this paper, ‘public policy’ will refer to programs, regulations as well as conditions appointed by public authorities, institutions or stakeholder groups to help achieve a specific dimension of direction or structure in the accomplishment of selected, mandated objectives, through the delivery of education, information and protection of its consumers. The definition is somewhat extensive as it combines and integrates consumer as part of the field.

## Materials and methods

The major objective of this paper is to identify the consumer as an actor in the process of building public policies in the area of agriculture. A literature review seems to be a valid approach to meet this specific objective. A search in the Scopus (Elsevier, 2019) and Web of Science (Clarivate Analytics, 2019) databases was performed on May 8th, 2019. The period

designed in this analysis was 1985 to 2018. To yield the pertinent objectives, a search was carried out using the keywords: ( “consumer” AND “public policy” AND “agriculture”), the search included all records found in title, abstract and keywords.

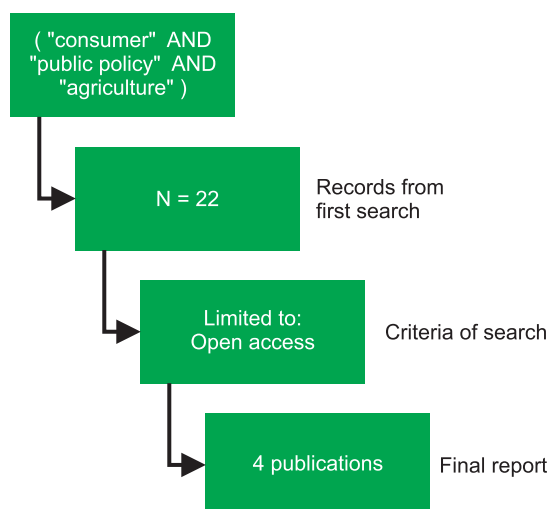
From the Scopus database, a total of ( $n^{10} = 116$ ) records were first obtained from the initial search (Figure 1). These initial results were further limited to the following criteria: (1) those written in English and (2) publications that were open access. From the following restrictions, 22 publications were reported. A similar process has been conducted in the Web of Science database. The initial search performed reported ( $n = 21$ ) results, the search was further refined to all publications with open access and thus the database identified 4 publications (Figure 2). The references accumulated were further analysed, the author found 1 publication from the Web of Science records that was a duplicate in the Scopus references and thus eliminated. Therefore, taking the stated delimitations into account, a total of 25 relevant articles and journals were identified. The records were downloaded and analysed consistent with the defined objectives.



**Figure 1.** Scopus database search results.

Source: Elsevier (2019).

<sup>10</sup> N signifies the number of publications



**Figure 2.** Web of Science database search results.

Source: Clarivate Analytics (2019).

## Results and discussion

### Consumers role in public policy formulation in agriculture

According to Breithaupt (2004), “The public is more commanding today, as a consumer”. Those who do generally suffer from bad policies are consumers (Aho, 2007). Consumers play a critical role in the formulation as well as the evaluation of public policy and are considered priority actors within the decision-making process. According to the Common Agricultural Policy (CAP)<sup>11</sup>, stated that members of society and consumers of food, including taxpayers and voters amongst others, have private as well as collective priorities (Reid, 1985). The policy reform of the CAP across the European Union has acknowledged that in order to achieve a high-level sustainable objective and effectiveness of policy in agriculture, high priority importance must be given to consumers (Kelly et al., 2018). However, although the CAP

has been condemned for its inadequate position towards the consumer. It is acknowledged, that the consumer, as well as taxpayers, are the ultimate king and queens of policymaking (Kelly et al., 2018).

Consumers affect policy formulation in many aspects of agriculture such as demand and choice. Governments are progressively promoting sustainable public policies in agriculture as a result of consumer global demands. Governments are required to meet the global demands ensuing from consumer choices (Kelly et al., 2018). Nowadays, consumer confidence is highly important especially in food supply and on demands and expectations of producers concerning food quality, safety and sustainability. In general, meeting consumers demand (Iles & Marsh, 2012) is the role of any supplier of policy. Growing consumers demand is influencing government policies in industrialized agriculture for health, sustainable food across the globe (Iles & Marsh, 2012). Likewise, nutrition policy also has been left to consumer demand, consumers have transformed the food economy nationally and internationally (Lang, 2005). In like manner, public policy on genetically modified<sup>12</sup> (GM) crops proves a strong relationship to consumer demand and products, as well as consumer choice and freedom (Pearsall, 2013).

Consumer confidence in policy is imperative to the implementation and adherence of that policy. As (Barling & Lang, 1999) stated that Europe should expect a crisis of consumer confidence if it continues to maintain this policy of ‘investment first and consumer consequences later’. Consumer confidence, consumer attitudes and consumer emotions in products of biotechnology<sup>13</sup> regulations are also important aspects of GM crops, the European public requires that agricultural biotechnology can directly benefit the consumers (Breithaupt, 2004;

<sup>11</sup> CAP is an agricultural policy including subsidies and programmes between agriculture and society, between the European Union and its farmers.

<sup>12</sup> Genetical modified contains artificial material (genetic material) to produce a specific outcome.

<sup>13</sup> Biotechnology involves the process of developing technology and products based on biology to improve the lives of people, health and planet.



Gleim & Smyth, 2018). Moreover, conceptual views about consumer and protection of the environment have hindered the producing and marketing of GM foods irrespective of the revoked suspension by the European Union (Breithaupt, 2004). Due to consumer choice and demand for more local produced sustain products, many public policies and strategies implemented stimulated the reduction of agrochemicals used (Giomi et al., 2018).

Besides, consumers play an important role in policymaking based on their culture and willingness to pay as a consumer (Lang, 2005). For instance, in the United States, society's willingness to pay has instigated a banning policy decision against a heavily used pesticide which is applied to corn. Also, in the case of the reuse of wastewater for irrigation in India, policy implications explore the consumer willingness to pay more for cleaner produced vegetables (Starkl et al., 2015).

In some circumstances, a policy can result in the consumer paying more for a civil good or service, i.e. healthier food. As well as the same policy can affect various consumers differently. For example, Atrazine<sup>14</sup> the heavily used pesticide in the United States which is applied to corn. The evaluation of the pesticide included the public's willingness to pay for reduced agricultural chemical use. The responses were different in various consumer markets, European consumers hold more negative attitudes towards pesticides and biotechnology and are willing to pay a higher premium price for chemical-free food in comparison to their U.S equivalents, who displayed a higher confidence in their policymakers and are unwilling to pay more for chemical-free food, hence rationalizing the practice of atrazine (Tsfamichael et al., 2005).

## **Main aims of agricultural public policies implemented, and its effects on consumers**

Agriculture constitutes the largest consumer market and provides a major source of livelihoods (Daccache et al., 2014). The CAP at the EU level has endured numerous alterations and periodic evaluations. One of the first policy pillars in the 1999 reform was devoted to measuring agricultural production. Policymakers require suitable and applicable statistics to assess ex-risk policy scenarios, to plan/develop (new) policy measures and to assess policy instruments. Moreover, over the previous 10 to 15 years, the CAP had considerably advanced its principal focus to enhance beyond a far more complex design from increasing agricultural production to sustainable food production and the use of natural resources, climate change and territorial development. Also, further reporting for policy planning has evolved new policy topics such as plant health and animal welfare. A blend of policy reform and changes in agriculture have ensured more sustainable agriculture through the effectiveness of policy (Kelly et al., 2018).

Antimicrobial<sup>15</sup> use (AMU) is a common practice used in dairy products which cause a public threat to humans. Therefore, governments established public policies with the intention of limiting antimicrobial use. This policy is likely to impact the farmers negatively by generating additional costs and thereby impacting the dairy market. Similarly, the implementation of such policies impact the consumers through increased milk prices and lower milk production (Lhermie et al., 2018). Correspondingly, policies influence other aspects of the industry and thus commanding the evaluation and application of supporting policies (Kelly et al., 2018); for illustration, AMU also impacts animal welfare, public health objectives and food safety, therefore impacting other objectives in policy decision. In

<sup>14</sup> Atrazine is a herbicide commonly used in corn. It is heavily used in the United and can cause serious human health problems with extensive exposure.

<sup>15</sup> Antimicrobial kills or stops the growth of microorganism such as antibiotics, antifungals.

the same way, human health problems relating to AMU has directed policymakers to apply controlling mechanisms such as prohibition and taxes on AMU in the US and Europe, thus incurring additional cost to these and similar policies of other sectors (Lhermie et al., 2018).

The Organisation for Economic Cooperation and Development (OECD)<sup>16</sup> reports focus mainly on food and agriculture, safety considerations, food safety and developments of new public policies in biotechnology. The Food and Drug Administration (FDA)<sup>17</sup> made a statement of recombinant DNA policy in 1992 regarding derivatives from the new plant. This policy was needed to ensure the safety of consumer markets (Gleim & Smyth, 2018).

Agriculture encounters several challenges in South Africa, especially amongst the smaller rural population. The policymakers of the smallholder irrigation schemes realized the need to increase the number of schemes to reduce poverty within the rural communities and create employment by roughly 300,000 job opportunities by the year 2020. This allocation is beyond agricultural development and impacts other sectors such as fishing, forestry, hunting and rural development. Land tenure policies were also developed in the smallholder farming sector as a means to increase access to arable land and promote alternative cropping systems (Fanadzo & Ncube, 2018).

Although some public policy formulating is beneficial to consumers, it also costs the consumers to implement. In the case of South Africa, policymakers and scholars have noticed the ill-defined water rights. However, smallholders are required to pay a premium for water prices in connecting to the developments in the water rights systems (Fanadzo & Ncube, 2018). Another policy that was implemented in South Africa in 1997 was water policy. This policy was launched

as a campaign to educate consumers about the necessity to save water and provide good water as a basic human need for individual consumers (Lumley & Daly, 2006).

European food public policy on genetic modification (GM)<sup>18</sup> have pressured the companies to inform consumers about the origin of their food. The EU has implemented consumer protection legislation which requires the application of food safety at all phases of the production-distribution chain (Barling & Lang, 1999). Similarly, a policy of national self-sufficiency studied the impact on greenhouse gas<sup>19</sup> emissions in the UK and considers the source of the inputs to the agricultural systems. The ultimate result of the self-sufficiency policy is food security whereby consumers can have access to safe, sufficient, nutritious affordable food at all times to live an active and healthy life (Edwards-Jones, 2010).

Public policy can contribute to the development of diversified farming systems (DFS) in many ways. New policies of sustainable farming in the United States must include social and environmental benefits as opposed to standard agricultural policies for diversified farming systems to thrive. In order to accomplish this, policymakers, consumers, researchers and local communities play a pivotal role in this transformation. On the other hand, linking public policies, social actions and political intuitions can improve both human and environmental health from farm households and ecological sustainability. In turn, transforming the rural economies in aspects of employment creation (Iles & Marsh, 2012).

By establishing public policies in the development of diversified farming systems other supporting policies namely the 2009 US stimulus package was implemented. This policy allowed the purchase and preparation of fresh foods at

<sup>16</sup> The OECD is an international organisation with 36 member countries that operate to create improved policies for better lives.

<sup>17</sup> The FDA is an agency in the United States and is responsible for protecting public health.

<sup>18</sup> Genetic modification is the direct manipulation of an organism's genome DNA thereby altering the makeup of the cells.

<sup>19</sup> Greenhouse gas is a gas resulting from infrared radiation, for example, carbon dioxide, methane and ozone.

schools with the aim of improving the students' health and generate market prospects for farmers. As well as, educational public policies on improving consumer knowledge about diversified farming systems through media and programs were implemented. These supporting policies are crucial to the primary policy and in the existence and continuation of a diversified farming system (Iles & Marsh, 2012).

Food policymaking is framed in the context of nutrition. There is a clear association between its evidence and policy. Although nutrition is reflected in the production, generally, consumers do not pay for nutrition, but for food choice. Social nutrition suggests that nutritional science is similarly embedded in social policy. Nutrition needs involve people and the environment or jeopardize a placement into policy irrelevancy (Lang, 2005). Since almost 30 years ago, the Treaty of Rome's Common Agricultural Policy (CAP) aims at improving agricultural productivity, guaranteeing a just standard of living, stabilize markets, guarantee the accessibility of supplies and ensure supplies reach consumers at realistic prices. However, it is explored that the growth in the level of self-sufficiency results in food security for over 200 million consumers in the European Community (EC). Hence, the formulation of food policy was implemented with the support of nutritionist – food policy aiming at food security (Reid, 1985).

Public policy on genetically modified (GM) crops in the UK was required to uphold freedom of choice for consumers and sustain the integrity of raw material supply chains. To meet this objective, policymakers, politicians and regulators were responsible for regulating the safety of GM crops and restoring legal boundaries to differentiate between genetically modified crops and non-genetically modified products (Pearsall, 2013).

Conversely, not all agricultural policy has solely positive outcomes and addresses the major challenges of food security and climate change. The seemingly absolute most significant agricultural policy issue on the planet today is the fast alteration of corn to make ethanol<sup>20</sup> in the United States. Worldwide food price is rising due to ethanol, which will indirectly increase the number of underfed societies. Results based on a study conducted at the University of Minnesota states that as a result of the US ethanol policy the rate of underfed people will increase to 50% from 830 million to 1.27 billion. Clearly, hundreds of millions of people will be negatively affected by this policy (Aho, 2007). According to, (Aho, 2007), if ethanol production and its current policy continue in the United States, the state of hunger will increase for all poor consumers while grain prices will remain high. The policy will negatively affect the world poultry industry in the short run due to higher corn prices. However, this policy is not entirely negative, the policy benefits the world poultry industry in that it assists small rural farmers and increase the competitiveness of poultry meat and eggs. Evidently, ethanol policy is narrowly driven by domestic political factors rather than a wider view of policy implications (Aho, 2007).

Across several localities in the United States leaching of pesticides and chemicals in agricultural has become a public concern. The present groundwater protection policies effectiveness depended principally on the farmers' willingness to pay. Leaching<sup>21</sup> reduction measured willingness to pay and the implementation of leaching prevention. Farmers responded to these policies positively based on their current collections of information and specified that they are willing to pay for the implementation of this policy (Lichtenberg & Zimmerman, 1999). Likewise, in Italy, an assortment of public policies and private strategies have been executed to encourage

<sup>20</sup> Ethanol is a volatile, flammable chemical compound, also known as ethyl alcohol which is used in many processes such as in fuel, wine, alcoholic beverages, etc.

<sup>21</sup> Leaching is dissolving of water-soluble constituents of plant nutrients from the soil. This happens as a result of heavy rain and irrigation.



farmers to employ nature conservation processes as a means of reducing agrochemical use in Italian olive. Many groups have responded to the implementation of these policies such as Alternative Food Networks, Eco-labels and Agri-environment schemes. The matters that include the structures and procedures of such strategies involve sectoral policies or in agricultural practice. Moreover, the only strategies that are connected to the reduction of agrochemical use were corporate social responsibility or engaging consumers in direct sales (Giomi et al., 2018).

Stemming from the increasing threat of invasive plant diseases, plant protection policy and plant health policy has been developed by national plant health organizations in December 1976. The European Community regime created policies to regulate trade for plant health purpose. Policies have been developed at international, national and regional levels, centred on a close association with policymakers and the public. This policy formulation and decision-making affect the food and other economic sectors and actors (Mills et al., 2011).

Sustainable food consumption and production is a major political issue because of its influence on the individual, public health, social unity, the environment and economy. Presently, high numerous concerns on policy agenda worldwide represent how extensive the problem is, it encompasses problems relating to health, diet, population growth, economic prosperity and environmental. Roughly 800 million people worldwide are hungry and do not have the availability of food to meet their requirements. To alleviate these challenges policies such as environmental (food safety), nutritional and price are major food consumption decision measures which are needed in providing healthy, affordable foods to consumers. Moreover, the Sustainable Development Commission (SDC)<sup>22</sup> in the UK has highlighted the need for improved nation's self-sufficiency policy that encompasses working

conditions, animal rights, cultural aspects and rural economy. Similarly, economics-informed consumer policy has been suggested in the application of switching towards a healthier lifestyle (Reisch et al., 2013).

Another public policy which was implemented in India was the National Water Policy or National Urban Sanitation Policy. This policy was established to end the illegal practice of using untreated river water for the irrigation of vegetables, thus exposing farmers and consumer to serious health problems (Starkl et al., 2015).

Seeking to increase the fruits and vegetable consumption amongst a new group of consumers, the EU agriculture policy for fruits and vegetable schemes approached schools with both public health and agricultural benefits. These EU policies sustain a scope of health disparities and obesity policies. Conventionally, public health was not a factor of the EU Common agricultural policy, however, this policy process is imperative as it is the first public health policies prepared and financed through the EU. This support of 'health fostering policies' from additional policy sectors is an essential pattern of new methods for tackling diet-related diseases (De Sa & Lock, 2008).

A principal public policy in food chains aims to increase the accessibility of nutritious and locally sourced food through influencing territorial uniqueness and propinquity and community and economic development. For example, in the US, policymakers of short food chains have been pursuing to accomplish this goal. Therefore, implementing policies to bolster alternative agri-food networks would consecutively increase the food consumed in the United States by short food chains. Furthermore, policy implementation is important to the outcomes of empowering small and medium-sized farmers and consumers. In the case of Mexico and New York City, public policy investment in public market systems was accomplished by expanding food access. To resolve the inequality of food supply, public

<sup>22</sup> SDC is a non-departmental public body under the UN Economic and Social Council operated in assisting decision-makers and advisors incorporate sustainable practices for the goal of sustainable development.

policy is compulsory. Government intercessions authorizing policy in the 1950s aimed at the development and regulation of public market systems. This construction was the function of a policy commenced under the Normative Declarations in 1951. The aim of this policy was poverty reduction, consumption increase and lower agricultural prices (Pensado-Leglise & Smolski, 2017).

And lastly, in Canada, health and sustainability public policy initiatives were undertaken to satisfy the objectives of health and sustainability promotion within the Canadian food system and support consumers (MacRae et al., 2012).

Table 1 below summaries the main agricultural public policies stated in this sector and their objectives and the subsequent sector will discuss the main findings of the review.

## Main findings

Consumer as an actor in public policy is crucial to policy building in the field of agriculture. Yet, the publications to support this evidence is lacking. A literature review was conducted to examine consumers' function in agriculture policymaking. Although the review methodology was limiting, it answered the key research questions presented in the study and the conclusions were drawn on the review literature. The most significant findings from the literature analysis are summarized as follows:

### **(I) What role do consumers play in public policy formulation in agriculture?**

This review confirmed the assumption that consumers play an imperative role, if not the most imperative role in the decision-making process of public policy in agriculture. Not only does consumer play a critical role in public policy formulation they are the factor of importance in the achievement of high-level sustainable agricultural public policy.

In this review, consumers influence agricultural policy formulation in aspects such as demand, consumer choice, consumer confidences and the willingness to pay. The most prevalent of these influential factors presented in this review was consumer demand as government, policymakers and regulators must meet the demands of the consumers it serves. Without the satisfaction of the demand, policy implementation and the effectiveness of policy objectives will be challenging.

Hence, based on the results we can conclude that the main role of which consumers perform in the formulating process of public policies in agriculture is primarily through consumer demand/request for the need to be fulfilled. Consequently, it is further determined that public policies within agricultural are mainly built on consumer demand.

### **(II) What are the main aims of the agricultural public policies implemented and how does it affect consumers?**

The results of this review analysis revealed several public policies within agriculture from various parts of the globe such as Europe, United States, India, Indonesia, Italy, South Africa and Canada. The most predominant policy is the CAP issued by the EU. This policy comprises of holistic objectives such as agricultural production measurement, food production sustainability, natural resources, climate change, plant health, animal welfare and territorial development.

The other agriculturally-based policies obtained in this review are antimicrobial use (AMU), biotechnology, smallholder irrigation schemes & Land tenure policies, self-sufficiency policy, sustainable farming policy, food public policy on genetic modification, food policymaking, food security policy, agrochemical policy, pesticide policy, plant protection policy and plant health policy, national water policy or national urban sanitation policy, fruits and

**Table 1.** Summary of the main agricultural public policy.

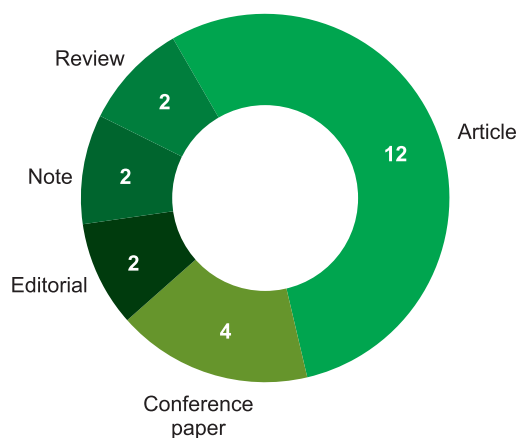
Agriculture public policy type and/or organization	Countries	Main aims of established public policy
CAP	European Union	Agricultural and food production sustainability & plant health and animal welfare
AMU	US	Limiting antimicrobial use & reduce of public threat to humans
Biotechnology policies OECD & FDA	US, EU and Canada	Food and agriculture safety
Smallholder irrigation schemes & land tenure policies	South Africa	Poverty reduction & employment creation & Increase access to arable land and promote alternative cropping systems
Water policy	South Africa	Provide good water & educate consumers about the necessity to save water
European food public policy (genetic modification)	EU	Consumer protection legislation
A policy of national self-sufficiency	UK	Food security
DFS Public Policy	US	Improve the sustainability of diversified farming systems. Supporting Policies: Fresh foods at schools Educational public policies on improving consumer knowledge about diversified farming systems
Nutrition food Policy	UK	Food security
Genetically modified crops	UK	Regulating the safety of GM crops Uphold freedom of choice for consumers and sustain the integrity of raw material supply chains.
Ethanol policy	US	The modification of corn to create ethanol
Groundwater protection policies	US	To combat the concerns of leaching of pesticides and chemicals in agricultural.
Agrochemical use (Alternative Food Networks, Eco-labels and Agri-environment schemes)	Italy	To encourage farmers to employ nature conservation processes as a means of reducing agrochemical use in Italian olive.
The European Community Regime & National Plant Health Organizations	Europe	Plant health and protection policies
Sustainable Development Commission	UK	Sustainable food consumption and production
National Water Policy or National Urban Sanitation Policy	India	To end the illegal practice of using untreated river water for the irrigation of vegetables.
EU agriculture policy for fruits and vegetable schemes (CAP)	EU	To increase fruits and vegetable consumption & Sustain a scope of health disparities and obesity policies.
Development and regulation of public market systems (policy commenced under the Normative Declarations in 1951)	US	The aim of this policy was poverty reduction, consumption increase and lower agricultural prices
Health and sustainability of public policy	Canada	Food Health and sustainability

vegetables policies, obesity policy and food sustainability policy.

Evidently, there are several public policies in agriculture, but this review revealed that the public policies most predominant were based on food sustainability, self-sufficiency and public health. In other words, based on these results, it can be concluded that the main aim of public policy formulation in agriculture is to achieve food sustainability, self-sufficiency (food security) and public health.

Another major finding was derived from the research methodology used. Although the records obtained from the databases searched yield a small number of records, it is interesting to note that the majority of the 22 publication types obtained from the Scopus database were articles and conference papers (Figure 3) and of these publications the top three subject areas that were most prolific and well suited in the theme of consumer, public policy and agriculture were that of environmental science, medicine and agricultural and biological science (Figure 4).

All things considered; the design of this review was intended to specifically address the function of the consumer in the process of forming public policies in the field of agriculture. Due to its specificity and scope of work, several research limitations are defined. Based on the research methodology outlined in this review, the evidence utilized to answer the specific research objectives were reliance solely on secondary information from previously

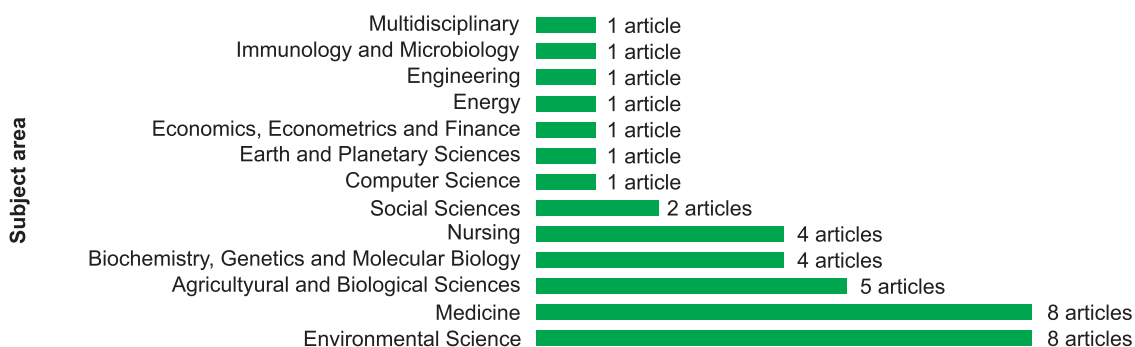


**Figure 4.** Document type of publications.

Source: Elsevier (2019).

published materials. Another limitation of the review was the lack of previous research studies specifically addressing the topic of consumers in public policy formulation in agriculture. Although the authors included consumers in their studies, consumers were not the primary focus of the studies conducted. The third limitation relates to the method accompanied in this research methodology, as a consequence of the two search exclusions performed within the initial data searches, thus, resulting in a small number of the publications (n=25) for analysis used in this review. Therefore, it was challenging to realize important relationships from the data as this methodology lacks comprehensive and aggregate evidence for this review.

Given the stated limitations, it is evident of the lack of current research and information



**Figure 3.** Subject area of publications.

Source: Elsevier (2019).

regarding the role of consumers in agriculture public policy formulations. Hence, it is highly recommended that further empirical research and primary investigation should examine with priority the consumer as an actor in public policy formulation.

## Conclusions

Given the primary results, the three subject areas that focuses on agricultural public policy and consumers, in prime areas relating to food sustainability, self-sufficiency (food security) and public health are environmental science, medicine and agricultural and biological science. It is established that the major actors in these public policy formulations are consumers. They are the major actors because of the effect and influence they execute on public policy formulation through demand. Consumers are demanding; however, they are the ones who suffer from bad policies. Hence, formulating good policies benefits the consumers and ultimately the nature of the policy.

Based on the results derived from the review, politicians and government, in particular, have identified the necessity of including consumers in the public policy formulation processes. In developing agriculture through public policy, the improvement of public policy with the focus on the consumer is necessary. The emphasis on consumers viewpoints in agricultural public policymaking yields successful policies and programs. Focusing on the consumer extends assistance to the government, politicians and other policymakers in making better policies that are effective and receptive to the consumers while achieving the goals of sustainability in agriculture. Not only does consumer play a critical role in public policy formulation they are the factor of importance in the achievement of high-level sustainable agricultural public policy.

A policy that puts consumers last instead of first in its formulation and maintenance process should expect a crisis of consumer confidence. The main aim of public policy formulation in

agriculture is to achieve food sustainability, self-sufficiency (food security) and public health. To achieve a high-level sustainable objective and effectiveness of policy in agriculture, high priority importance must be given to consumers, because sustainable public policies are the results of responding effectively to consumer demands and choice.

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