



# Origins, Foundations and Scope of Agricultural Ethics: A Conceptual Framework

Ahmad Abedi Sarvestani

Department of Agricultural Extension and Education, Gorgan University of Agricultural Sciences and Natural Resources, Gorgan, Iran.

**Corresponding Author:** Ahmad Abedi Sarvestani, Ph.D. Department of Agricultural Extension and Education, Gorgan University of Agricultural Sciences and Natural Resources, Gorgan, Iran. E-mail: [abediac@yahoo.com](mailto:abediac@yahoo.com)

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## Abstract

**Introduction:** The ethical dimensions of agriculture need to be explored, distinguishing between ethics in agriculture and ethics of agriculture. Ethics in agriculture is traditionally based on abstract moral theory, formulated through logical reasoning, but often found inadequate to address the complex ethical challenges within agriculture due to its abstract nature and lack of practical visibility. Conversely, ethics of agriculture is approached within a context-specific framework derived from the research topic with the aim of providing more tailored solutions.

**Materials and Methods:** A comprehensive review of the relevant literature is conducted, using a descriptive-analytical approach to provide a conceptual framework for understanding agricultural ethics.

**Conclusion:** The article highlights the critical need for a comprehensive ethical framework to address the multifaceted ethical challenges in the agricultural sector. The importance of analyzing and resolving ethical dilemmas at all stages of agriculture is underscored in order to align practices with human ideals and to ensure ethical decision-making by stakeholders involved in agriculture.

**Keywords:** *Agriculture; Farming; Ethical concerns; Moral issues.*

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## INTRODUCTION

Ethics is based on valid criteria for right and wrong behavior. It is a guide to human action, determining what should be done and what should be avoided. Ethical concepts typically manifest themselves in the form of legal systems, pursuing the interests of society, fulfilling obligations, observing justice, or reinforcing virtues. However, morality is a complex and multifaceted concept, and different people may have different definitions of what it means when asked [1]. For some, morality is based on feelings and emotions that indicate what is right or wrong [2]. Others see it in terms of religious beliefs, where what is considered morally right is often

dictated by one's faith [3]. Some associate morality with the law and consider actions that are legal to be ethical [4]. Following societal norms can also be seen as a measure of ethical behavior [5]. However, reaching a consensus on ethical standards is not an easy task and opinions can vary widely.

In general, ethics cannot be equated with feelings, because feelings can easily change, and therefore something that is immoral can become moral by changing the feeling. Also, although religions are strong advocates of morality, morality is not limited to religions, because if it were, only religious people would behave morally. Nevertheless, religion can provide appropriate

moral standards and greater motivation to follow them. Morality cannot be the same as law, because law often includes criteria that most people agree on, which may be different from morality. Laws that supported slavery or the old apartheid laws in South Africa are clear examples of this. In addition, ethics cannot be the norm or common things among people, because what is accepted by everyone is not necessarily true and may even be against human values. For example, we can look at Nazi Germany, which was an example of a morally corrupt society. In addition, if we consider ethics to be equivalent to what society does, it is necessary to discover what is accepted by society. For example, to find out whether abortion is moral or not, it is necessary to conduct a survey. But no one tries to solve a moral problem by polling. This is despite the fact that on many issues there is no social agreement that can be used as a standard of ethics.

It can be observed that we live in a world full of moral uncertainties. However, certain values are universally recognized and respected across different cultures and can be used as a basis for defining ethics [6]. Although there may be significant differences in the moral or immoral justification of certain behaviors, there are some actions that are universally liked or disliked. In this respect, some believe that ethics is paradoxical, with individual and social dimensions. Morality is generally seen as a social issue with shared expectations of behavior [7]. Ethics doesn't aim to create or depict truth, but to evaluate right and wrong actions [8], making it a normative science.

Ethics, a concept of morality, has been present throughout history, but the term 'ethics' gained prominence in Greece. Socrates defined ethics as a rank in a person's existence rather than a set of rules [9], establishing the foundation of ethics on reason. This marked the beginning of philosophy, which encompassed human behavior and actions under the command of reason, making morality

a practical part of philosophy [10]. According to the Greeks, intellect is divided into two types: theoretical intellect, which asks about the nature of beings and knows about objects, and practical intellect, which is interpreted through verbs, including action and behavior [11]. In general, ethics encompasses two aspects: defining valid standards for right and wrong behavior, and studying and developing ethical standards to ensure they are reasonable [12]. These standards prevent wrongdoing and promote virtues such as honesty, love, loyalty and respect for human rights, freedom and privacy. It involves constant analysis of moral beliefs and behavior to ensure adherence to logical standards.

Ethics involves defining and developing standards of right and wrong behavior that prevent heinous acts and promote virtues. This constant analysis of moral beliefs and behavior adheres to logical standards [8]. It's important to mention that morality is a human construct that is scientifically studied through ethics, which aims to balance desires and behavior with human existence for a harmonious state. Ethics determines correct behavior for effective communication and interaction between individuals and social groups, and introduces principles and values for the well-being of society. Moral philosophy justifies moral principles and theories and analyses concepts such as right, wrong, permissible, good and evil [13]. Therefore, the study of ethics is essential in understanding human behavior and guiding individuals to make morally and socially acceptable decisions [14]. Without ethical principles, decision-making would be aimless [15], however, it is possible to prioritize important values and align goals and actions by following these principles [16]. Neglecting ethical considerations reduces our potential for success. This article aims to provide a conceptual framework for understanding agricultural ethics by examining its origins, foundations and scope.

## MATERIAL AND METHODS

This article was written using a descriptive-analytical approach. It involved a comprehensive review of the relevant literature. This methodological framework allowed for a thorough examination of the subject matter, ensuring a robust and well-informed analysis.

## DISCUSSION

Ethics is based on values that serve as a standard for all actions and goals. Scholars argue that life and happiness are the ultimate values based on human nature and needs [17]. A moral system based on human values should guide daily decisions, especially in human relationships, to ensure survival and promote prosperity and happiness. Thus, the protection of life is essential in an appropriate moral system.

In general, ethics is a broad field that can be divided into three main areas: meta-ethics, normative ethics and applied ethics [18]. Meta-ethics is concerned with the theoretical meaning and reference of moral propositions and how to determine their true value. Normative ethics, on the other hand, deals with practical tools for following an ethical path. Finally, applied ethics is concerned with determining what a person is obliged (or permitted) to do in a particular situation or area, and how to apply the principles of normative ethics, which differ from each other, in different situations. Applied ethics covers a wide range of areas, including medical ethics, educational ethics, legal ethics, political ethics, international relations ethics, environmental ethics and agricultural ethics. Therefore, in order to understand practical ethics, it is necessary to check from which point of view normative ethics is concerned.

Determining the scope of ethics requires consideration of the range of human behavior and its impact on different entities. Morality is relevant when an individual's actions affect

themselves or others, including other humans, living beings and even non-living entities [19]. Therefore, modern ethics extends beyond traditional ethics, which only encompassed humans, to include considerations such as ethics in space or other celestial bodies [20]. Thus, ethics can be categorized according to the various relationships between humans and different entities such as the self, others, society, the natural environment, the man-made environment and God [21].

Scholars link ethics and culture, with culture forming the basis of ethical values [22]. Different groups in a community establish their moral codes, making a one-size-fits-all standard inappropriate for a diverse society [23]. While ethical systems can draw on cultural resources to redefine themselves, a complete overlap between ethics and culture may not be achievable. Culture and ethics have a reciprocal relationship in which ethical standards and behaviors become part of a community's culture, and an individual's moral standards and behaviors are influenced by their community [24]. Social customs can shape an individual's personality, resulting in relatively stable moods and behaviors. For example, different work environments may cultivate different personality traits, such as aggression in some and patience in others [25].

Culture refers to the shared values, norms, beliefs and ideas of a community [26]. It is an unwritten, social phenomenon that emerges from a specific environment. Cultures can be stable intellectual systems of shared meanings that differentiate communities within a geographical area [27]. The impact of culture on society is significant, influencing levels of civilization, lifestyles and both material and spiritual elements. One consequence of cultural diversity is the development of different ethical frameworks resulting from different cultural perceptions of the world [28]. Cultural norms and values not only shape people's understanding of ethics, but

also influence the available options for correct behavior and possible outcomes [29]. Values and norms of behavior are therefore an inseparable part of any culture. Culture is also seen as a source of transformation, promoting moral values and virtues such as justice, responsibility and freedom, thus stimulating progress and development. It is crucial to study the culture of societies to determine their perceptions of ethical or unethical behavior. Social psychological research suggests that culture has a greater influence on behavior than individual moral principles [30,31]. Therefore, people are more likely to conform to prevailing cultural behaviors than to act on their beliefs, even if they hold a particular moral value. Furthermore, studies suggest that social environments can create conditions in which individuals act contrary to their moral standards [32,33].

### **Practical ethics in life**

Applied ethics is a field of study that deals with practical ethical issues in everyday life, such as those encountered in personal life, work, professions and technology. Unlike traditional ethical theory, it addresses challenging ethical issues that arise from practical norms encountered in everyday life [34]. It applies general ethical theories to solve problems and can be seen as the application of old ethical theories or ethics to new areas [35]. The practical method of ethical reasoning used in applied ethics is widely accepted as requiring support from general principles or rules in conjunction with the facts of a given situation [36]. Applied ethics is used in various fields such as legal, social, educational, medical, environmental and agricultural ethics.

Since the mid-1960s, applied ethics has become one of the most significant developments in the study of ethics, as philosophers have become increasingly interested in using normative ethical theories to solve practical problems [37]. As a

result, it has rapidly become part of the philosophy curriculum in most universities worldwide. Applied ethics analyses real-world situations to determine the permissibility or prohibition of actions in specific circumstances. While it is distinct, it is also related to metaethics and normative ethics, and answers from applied ethics are influenced by these branches. For example, the moral impermissibility of the current treatment of animals requires a duty or virtue-oriented theory rather than an outcome-oriented one [38]. If we use a rights-based theory, a type of duty-oriented theory, we must defend the existence of rights by answering the meta-ethical question of why we think they exist [39]. The three branches of ethics are thus distinct but related.

Applied ethics is a subset of applied philosophy that focuses specifically on ethical issues [40]. However, applied philosophy covers a wider range of topics than ethics, such as law, education, art, and artificial intelligence, which also involve philosophical-metaphysical and epistemological problems. Despite its narrower focus, applied ethics still intersects with other areas of philosophy. For example, medical ethics can involve metaphysical questions about personality and death, as well as conceptual questions about truth and trust. Philosophers have debated whether practical ethics is based on analogical reasoning [41] or whether moral rules are derived from theoretical structures of previous normative rules [42]. Nevertheless, applied ethics remains an important field that applies ethical theories to real-life situations and helps to address challenging ethical issues.

### **Ethics in agriculture and sustainability**

Agriculture can be narrowly defined to include only technology-based crop or livestock production, excluding hunting and fishing. However, this definition excludes important activities such as processing, slaughtering, distribution and sales. Alternatively, a broader

definition includes agricultural management, forestry, water resources, research institutions and government ministries. It also includes food safety, veterinary medicine and applied biological sciences.

Agriculture, as a link between nature and culture, is subject to norms that are unique to human activities [43]. The increase in human population, the decline in resources and the capacity of agricultural systems to produce food have created a need for a moral analysis of agriculture, particularly in light of the impact of technology on the natural environment [44]. Agriculture has a rich tradition and its teachings are evident in philosophical texts. Aristotle recognized the importance of agricultural knowledge in achieving a 'good life' for individuals and the state [45]. Plato, a student of Socrates, in all his political models, from the Republic to the Laws, presented cities whose essential, if not exclusive, productive activity was agriculture [46].

Today, the production, processing and distribution of food and agricultural products are considered normal aspects of life throughout the world. Those involved in agricultural work also consider their profession to be ethical, as they are among the honorable workers who provide people with food. As a result, agricultural activities have rarely been considered in the field of ethics. However, agriculture has a long history, dating back more than 12,000 years, and by domesticating plants and animals, humans began to manipulate nature to provide food and clothing. Throughout history, humans have sought to dominate the competition for the use of the Earth's resources, such as light, water, soil and space, by selecting and cultivating the plant and animal species that are most beneficial to them. Since the science of ethics deals with do's and don'ts and aims to increase individual and collective good, the ultimate goal of agricultural ethics is to provide clear, comprehensive, non-contradictory and universal criteria for judging

policies and right and wrong actions in the food and agricultural system. Agricultural ethics therefore has an essential role to play in ensuring that food production and distribution are conducted in ways that promote sustainability, equity and justice for all.

Agricultural ethics covers a range of topics such as food safety, animal welfare, sustainability, social justice and economic efficiency [47]. It is an interdisciplinary field that integrates philosophical ethics with agricultural concerns. There are two distinct ethical approaches to agriculture. One approach tends to follow the theory of traditional ethics and apply justified norms in the field of agriculture, while the other approach deals with the subject first to conduct the discussion in a framework that starts from the research topic. The former is called ethics in agriculture, the latter ethics of agriculture.

Ethics in agriculture is typically based on traditional ethical theory. Ethical principles are formulated on the basis of logical reasoning and applied to various aspects of agriculture. The dominant approach is abstract moral theory, in which the moral problem is seen as subordinate to the theory. However, this approach is not successful in providing appropriate solutions to ethical problems in complex societies such as agriculture [48]. Although it identifies ethical problems using abstract concepts, it is hampered by its abstract nature and lack of visibility, leading to contradictory solutions.

### **Ethical concerns in agriculture**

In the past, countries could produce food without restrictions in order to provide cheap food, but this has changed due to challenges related to health, the environment and society's relationship with the industry. Ethical concerns now affect all stages of agriculture and require analysis and solutions [49]. Is the agricultural system compatible with human values and virtues? Are ethical criteria respected in



agriculture? These questions are crucial in organizing agriculture to achieve human ideals. Agricultural ethics concerns the choices made by people involved in agriculture, including farmers, legislators, researchers and consumers. Key issues in this area include food security, environmental impact, biotechnology, animal treatment, food safety, agricultural trade, farm structure and research ethics [50].

### **Food security**

Food security refers to a state in which all people have access to safe and sufficient food to meet their nutritional needs and lead active lives. It is considered an important issue in agricultural ethics as it relates to the phenomenon of hunger. The Food and Agriculture Organization defines food security as "when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life". One of the philosophers, Peter Singer, argues that in situations where small harm to oneself can prevent great harm to others, one has a moral obligation to act accordingly [51]. This principle is particularly relevant to the issue of hunger and can inspire individuals to take more action to reduce hunger. In conclusion, ensuring food security is a critical aspect of ensuring human well-being and is considered an important issue in agricultural ethics. Individuals have a moral obligation to act to reduce hunger, and the principle of sacrificing small harm to oneself to prevent great harm to others can be a motivating factor for action.

While increasing agricultural production can contribute to food security, it is not the only solution. In fact, the issue of food security is also related to the unequal distribution of food across the world [52]. For example, developed countries consume a significant proportion of the world's food, estimated to be around 60% [53]. However, the unequal distribution of food is not limited to

global differences, but is also evident within countries, where access to food is a critical aspect of food security. Affordability of food is a critical factor in ensuring access to food, but in developing countries the high cost of production results in food being sold at exorbitant prices, limiting access to food for the poor and vulnerable [54]. Consequently, food insecurity is not only caused by a lack of food, but also by an inability to access enough food. Given that food security is a fundamental moral obligation, it is essential to address issues related to agricultural development. While individuals have a role to play, policymakers have a greater responsibility in shaping agricultural policies and trade laws that can affect food security [55]. It is therefore necessary to address the root causes of food insecurity, such as poverty and inequality, to ensure that everyone has access to safe, nutritious and sufficient food.

### **Environmental impact**

Agriculture has been a major driver of environmental degradation, reflecting humanity's manipulation of nature [56,57]. The negative impacts of agriculture on the environment continue to this day and can be examined through three ethical concerns. First, the production of agricultural products can have negative effects on living organisms through organic waste and chemical pollution. Such pollution can result in toxins remaining in food, which can affect human health [58]. Secondly, agriculture often misuses soil, water and genetic resources, including the wasteful use of water [59]. This misuse can threaten the rights and well-being of future generations. Agriculture can also have far-reaching impacts on natural organisms and ecosystems beyond the direct effects of agrochemicals, such as the potential undesirable environmental effects of genetically modified products [60].

Philosophical discussions tend to pit agriculture and environmentalism against each other, as agriculture is driven by human-centered interests, while environmentalism emphasizes the health of the natural environment, animals, ecosystems and nature as a whole. However, the success of agriculture depends on the stability and proper functioning of the Earth's biosphere, so the goals of agriculture and environmentalism overlap [61]. Thus, emphasizing the balance between human needs and ecosystem health is a common goal of agriculture and environmentalism.

### Biotechnology

Advances in human science have made it possible to manipulate the genetic material of plants and animals to produce desired foods or medicines, a process known as biotechnology. Biotechnology has led to the creation of new forms of life, and many people welcome this development as it contributes to the sustainability of agricultural systems. However, this technology has raised many ethical questions. As a result, the debate on biotechnology has prompted further examination of fundamental issues in agricultural ethics, such as food safety, consumer satisfaction, environmental impact, impact on agricultural structure and its potential to help alleviate world hunger [62].

Biotechnology is a field that involves the transfer of specific traits to plants and animals to increase production, resist disease and pests, and reduce the use of poisons and chemical fertilizers. This technology has brought new hope for providing enough food for the world's growing population and alleviating the problem of hunger. However, there are concerns about the unknown environmental effects of genetic engineering. These concerns stem from the unknown dangers of lab-engineered organisms being released into the wild, and it is not clear how they will affect the ecosystem [63]. Concerns have also been raised

about the safety of bioengineered human products and the responsibilities of the food industry, food retailers, consumers and society towards such products. Some people also question the ethical implications of biotechnology, in particular its impact on the relationship between humans and nature. Biotechnology raises this quasi-religious question: isn't there a kind of voyeurism in the work of God's creation and a disrespect for the relationship between man and nature? [64]. Another ethical concern relates to people's right to choose their diet. If a person believes that bioengineered foods are religiously or philosophically impure, is it morally acceptable for the food industry to create conditions in which a person cannot make food choices based on such beliefs? [65].

Another concern is the impact of biotechnology on the structure of agriculture and the way crops are produced. It is not unlikely that agricultural products will be produced in the laboratory rather than on the land. If this happens, the question is whether we are allowed to change the structure of agriculture in such a way that farmers and farm workers face an uncertain future. What will be the impact on social relations and institutions? Is it right to use biotechnology to neutralize the material and human investments made in conventional agriculture?

### Animal treatment

Today, the question of whether moral issues extend to non-human beings is a topic of interest. This has given rise to a variety of views on the moral status of animals and the legitimacy of using them for food or other purposes. With the transformation of animal husbandry in some countries, animals are now reared in a centralized and intensive system, which has significantly changed their living conditions. This change has led to new ethical concerns about animal welfare. These concerns include the confinement of

animals in small and overcrowded spaces, deprivation of access to the outdoors and sunlight, harsh treatment and the general treatment of animals as mere objects. These conditions have increased the importance of animal ethics or animal rights in agriculture and raised the question of whether animals should be treated ethically [66].

Dominionists, who believe that animals are merely tools for human purposes, argue that animals have no feelings, understanding or consciousness. Therefore, humans can do whatever they want with animals. On the other hand, animal rights activists claim that animals are intelligent and have moral standing. They argue that animals, like humans, can be harmed or benefited [67]. Utilitarian ethics aims to balance the benefits and harms to humans and animals [68]. Animal rights advocates, on the other hand, argue that animals have fundamental moral rights and should not be treated as mere instruments for the needs of others [69].

### **Food safety**

Agricultural products can be contaminated by external factors such as chemical and microbial pathogens during the chain of production, transport, processing and sale. This raises the question of whether it is a moral duty and responsibility to prepare, produce and distribute safe agricultural and food products [70]. This raises the question of what these requirements entail. Food often travels long distances before it is consumed, increasing the likelihood of contamination, and the lack of transparency in the food system means that consumers may not know whether the food they buy and consume will harm them.

According to the legal approach to ethics, individuals should not be put at risk against their will, and therefore governments have a moral responsibility to ensure food safety and protect people's rights [71]. However, ensuring food

safety is not a simple task as it involves risk analysis, including risk assessment, risk management and risk awareness [72]. Risk assessment involves a normative element or value judgement that determines, firstly, what the risk (harm) is and, secondly, how much risk (harm) is acceptable. In this way, the word 'safe' implies a value judgement that the potential harms have been adequately analyzed and the remaining risks are acceptable. Food safety is therefore a challenging issue because it is usually considered acceptable to impose some risk on consumers. This raises ethical questions such as: what is the danger or harm (immorality) of consuming food, and should we harm ourselves or others by consuming food that is associated with danger? Can the food consumer be kept unaware of the extent of harm caused by food consumption (even if this harm is acceptable)? [73,74].

### **Agricultural trade**

There are long-standing ethical concerns about the fairness of international trade. These concerns revolve primarily around the institutional arrangements that govern global trade, such as those established by the World Trade Organization (WTO). The WTO requires its member countries to abide by rules governing labor and production activities, environmental protection, copyright laws and the settlement of commercial disputes. However, the WTO and its promotion of trade liberalization have led to a significant transformation of the global agricultural and food market, transforming it into a demand-driven market dominated by large multinational corporations [75,76].

This market can be highly profitable for companies, but they are also vulnerable to consumer concerns that go beyond product safety to include the production process and potential violations of norms and values. For example, concerns may arise about child labor, the mistreatment of indigenous people in



agriculture, or the establishment of agro-processing industries on their land. The WTO treats food and agricultural products like other goods, subject to the same market forces and rules [77]. However, food cannot be compared to other goods because it is a necessity for life.

Although the main objective of the WTO is to create a fair and market-oriented trading system, there is a moral question as to whether this trading system is promoting injustice in the world [78]. Rich countries can sell manufactured goods at lower prices by providing large subsidies to their agricultural sector, which can harm weaker countries that are often dependent on their agricultural sector and cannot compete with such subsidies [79]. This situation puts additional pressure on farmers and villagers, who are often a significant part of the world's poor. There is a moral concern that the franchise and market control of agricultural products in less developed countries will fall into the hands of foreigners, violating the rights of the citizens of those countries. The WTO's adherence to non-tariff barriers allows it to impose imports on a country against its will, raising moral and sovereignty concerns [80].

### **Farm structure**

Farm structure, which encompasses various social and economic characteristics of the agricultural sector, is an important ethical issue as it affects human interactions with others and with nature. This structure includes the average size of farms, the relative market share of farms of different sizes, the number of people employed in agriculture, and whether production is carried out and managed by owners or not [81]. The trend towards larger farms and fewer family farms raises concerns about the loss of values and virtues promoted by family farms, such as truthfulness, self-reliance, responsibility to the community and usefulness [82]. Thus, any action that contributes to the destruction of family farms

and the rural way of life is considered immoral as it hardens the opportunity for pious behavior from individuals [83]. However, larger farms and the use of labor-saving technology can create employment opportunities for farm workers. However, ethical concerns arise when the rights of these workers are ignored, despite the fact that many of them work seasonally and temporarily, have no job security or insurance, and are paid minimum wages. In addition, some agricultural workers may be illegal immigrants who are unable to complain about their conditions if problems arise [84]. This lack of attachment and belonging to the fields can lead to inappropriate behavior towards land, water, crops, livestock, agricultural inputs and even other workers [85]. In conclusion, the disappearance of family farms and the increase in farm size can lead to social injustices and immoral behavior, and there is a need for ethical principles and standards for the agricultural sector to ensure that these issues are addressed [86].

### **Research ethics**

Another dimension of agricultural ethics is related to research issues in agriculture, which have different aspects: individual, environmental and organizational. The individual aspect of research ethics in agriculture, as in other scientific fields, is related to the honesty and responsibility of the researcher [87]. It is based on ethical principles such as trustworthiness, independent judgement, criticism, confidentiality, respect for people's privacy, tolerance and professionalism. Research subjects in agriculture include not only humans, but also animals, plants, water and soil. Today, there are many ethical issues relating to the treatment of soil, water, air and animals in agricultural research. For example, is it morally acceptable for a researcher to pollute water and soil or to damage the environment? Are we allowed to treat creatures in any way, for example, to apply any

kind of treatment to them, to expose them to various environmental and chemical stresses, or to sterilize them [88].

Another concern relates to research priorities and the values involved in setting them. The question is: who determines the type and topic of agricultural research, and are these topics of value to society? Are the values of society reflected in agricultural research? [89]. Agricultural research is expected to focus on issues that meet the needs of society, particularly the provision of healthy food for people. However, there are concerns that human and material resources are being used for other purposes in agricultural research. For example, choosing research topics that have nothing to do with the needs of the country or society, or that are incompatible with social values and beliefs (such as haram products in Islamic culture) [90].

## CONCLUSION

Agriculture is a vital industry for human survival and ecological sustainability, but it also raises ethical concerns. The system of food production, distribution, and consumption has moral implications that have been addressed in agricultural ethics. Those involved in the agricultural sector may encounter ethical issues and conflicting values that make it difficult to take a particular moral position, such as the balance between environmental protection and economic issues. Governments should therefore take into account the ethical concerns of citizens and consumers in relation to food products and involve the general public in discussions on agricultural developments. It is important to note that moral judgments about the work done in agriculture are not always straightforward, and in some cases, there is moral uncertainty. This is because society's values change over time, and new technologies have unexpected consequences [91]. Additionally, new bases for moral judgments are proposed, such as the need for

environmental protection due to moral obligation or usefulness for the human species. Agricultural ethics addresses ethical issues related to the production and distribution of food and fiber, including concerns about the impact of agricultural trade on rural employment, the consequences of modern agricultural biotechnology, and the sustainability of the global environment due to intensive agriculture. These factors make agriculture a pressing moral issue because of the growing mismatch between food resources and human needs. While agricultural ethics is a broad subject, many aspects of which have not yet been analyzed, being aware of the main views, opinions, challenges, and answers presented in agricultural ethics is the first step towards understanding this field of knowledge and being prepared to make decisions about ethical issues in agriculture and agricultural ideation.

## ETHICAL CONSIDERATIONS

Ethical issues (such as plagiarism, conscious satisfaction, misleading, making and or forging data, publishing or sending to two places, redundancy and etc.) have been fully considered by the writers.

## CONFLICT OF INTEREST

The authors declare that there is no conflict of interests.

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