

## Study of Farmers' View on Ethics in Agriculture: The Case of Sonqur County

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### ABSTRACT

Agricultural ethics has been widely discussed in recent decades. However, in spite of numerous studies there is no consensus on this issue, especially in developing countries. Accordingly, this study was conducted with the aim of the examining farmers' view on agricultural ethics in Sonqur County, Kermanshah province, Iran. This study used a hybrid model to define the concept of agricultural ethics through three phases. For the theoretical phase, the attributes of agricultural ethics were identified through review of the literature (until 2017). Also, in-depth interviews with 32 participants were conducted for the fieldwork to develop attributes from the data and to verify those identified from the literature review. In the third phase, attributes and final analysis of agricultural ethics were extracted from the first and second phases. Based on the integration of the literature and the results from the interviews, agricultural ethics was described as follows: a complex subject involving farm structure, food security, food safety, global trade, agricultural biotechnology, trust in science, research ethics, environmental impacts, animal ethics, and rights. The scope of agricultural ethics ranges from macro issues at national and global levels to human ecology (human relationship with the environment) of a farmer, suggesting that it has a systemic thinking that is necessary to achieve sustainability.

**Keywords:** Bioethics, Concept analysis, Hybrid model, Morality, Sustainability.

### INTRODUCTION

Society is comfortable with ethics preceded by adjectives such as Christian, medical, legal, and, recently, environmental. The moral noun ethics does not regularly take the scientific adjective agriculture (Rolston, 1975). Ethics and agriculture do not fit together easily for two reasons. The first is that there are few philosophers who focus on agriculture and their thoughts is not read widely within the agricultural community and have no major influence on conventional agricultural thought. The second reason is that people engaged in agriculture are sure that food and fiber production are among the most ethical things anyone could do and are not, therefore, a

proper focus for ethical challenges (Zimdahl, 2012).

Agriculture is an activity with high externalities (Turk *et al.*, 2011) and the largest and most widespread human environmental interaction, so, actors in this field have a special responsibility in this interaction and should consider its ethical dimensions (Zimdahl, 2000).

However, agriculture is changing in the world, and these changes are a threat to human ability to produce food (Blatz, 1991) and the future of agriculture (Mahbobi and Sepehrara, 2013). The planet's population is expected to reach nine billion in decades (Pinstrup Anderson, 2010), therefore, the steady increase in the world's population and the need for

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more food (Sephahvand *et al.*, 2014) will increase the utilization of natural resources and environmental crises. Today, the world witnesses the spread of degradation of natural resources and environment (Mahloujirad *et al.*, 2016) According to scientists, earth is on the brink of the Sixth extinction (Jamshidi, 2016; Steffen *et al.*, 2004). On the other hand, in recent decades, due to the instability of the common agricultural systems, human beings have violated ethical aspects (Mahdavi Damghani and Minauddini, 2010) and especially bioethics in relation to nature (Webster, 1997). There is no doubt that with the continuation of such a situation in agriculture, future generations will face more and more ethical issues and resolve them in the field of agriculture (Asghari, 2012).

There are many important ethical issues and challenges in agriculture. These include, in part, the role of biotechnology, treatment of farm animals, use of chemical materials in farming and desirability of organic farming practices, sustainability of resources (land, air, and water), decline of the family farms, etc. These challenges involve “animal (nature) rights, conservation, organization of agriculture, and people versus planet relationships” (Wunderlich, 1991). Ethics is about choices, and agricultural ethics is about choices for people engaged in agriculture either directly as farmers, or indirectly as government regulators, extension agents, researchers, chief executive officers (CEOs), industrial workers, lawmakers, technology developers, consumers, or protestors. Although all of us make choices, few of us actively engage in an ethical analysis of our actions or can provide reasons for the choices we make (Chrispeels and Mandoli, 2003).

In the current situation, for food production, pressure on resources has increased, agriculture is moving towards unsustainability, and in fact, ethics has been forgotten in the food supply chain. The effect of moral beliefs on human behavior towards others, including the relation with other organisms and plants (Dwivedi, 2001), is important. Some researchers also explicitly state that the environmental crises in today's world are in

fact a moral and value crisis and require a moral solution (Ghiyasi *et al.*, 2016; Shobeiri *et al.*, 2014; Mohaghegh Damad, 2011) that must move from the natural and ecological sciences to behavioral sciences (Ehrlich, 2002). Although agricultural ethics has been widely discussed in the recent decades and numerous studies have been done on this issue, there is no consensus on what is called agricultural ethics by Iranian farmers.

What is agricultural ethics? What are the differences between agricultural ethics and business ethics, medical ethics, environmental ethics? What is the philosophy of agricultural ethics? The answers to such questions need to be recognized and the rules of agricultural ethics have to be defined. Considering the important role of agricultural ethics in different dimensions of sustainability, with emphasis on public health, food security and food supply chain, and environmental protection, and because there is little knowledge about the characteristics of concept analysis in Iranian agriculture, we used the general form of concept analysis in this study to clarify the concept of agricultural ethics. Conceptualizing agricultural ethics not only improves understanding of this concept, but also identifies farmers with the ethical dimensions of agricultural activity, but also by identifying the dimensions and characteristics of the concept, the provision of a measuring tool allows farmers to determine the degree of morality.

Hence, this study was conducted with the aim to study the farmers' view of agricultural ethics in Sonqur County in Kermanshah province.

## MATERIALS AND METHODS

Concept analysis is a valuable method for clarifying concepts that have a wide range of applications but have ambiguous meanings. The purpose of concept analysis is exploration and search for the characteristics of the concept to clarify the meaning and nature of the concept (Rafii *et al.*, 2010). In this qualitative study, concept analysis was

conducted using a hybrid model (Seomun *et al.*, 2006). The hybrid model helps to clarify, identify, analyze, and refine concepts at preliminary phases of developing a theory. The method relies on concept development and is executed through qualitative explorations of a phenomenon where it occurs. In this method, a certain approach is adopted whereby the theoretical and experimental methods are merged with each other and the final concept is developed through induction and comparison such that a form of reduction develops at the end. Concept analysis was done according to the hybrid model in three phases: the theoretical phase, fieldwork phase, and analytical phase (Oh and Kang, 2005). In the theoretical phase, a literature review was conducted based on credible databases including Google Scholar, ScienceDirect, Sid, Springer, Magiran, and Iran doc. The searched keywords were Agricultural Ethics, Farming and Ethics, Ethical Issues in Agriculture, and Ethical Challenges in Agriculture. The search covered the years from 1990 to 2017. Nearly 50 English papers and 4 Persian papers were found from the search, of which 30 papers met the inclusion criteria of this study. Note that because of the limitations of published full articles, many of the contents and resources were deleted. The main purpose of the theoretical phase is to create and develop a suitable ground for deep analysis and further revise the concept in the next steps. At the end of this phase, the researcher specifies the operational definition for the fieldwork phase.

The goal of the fieldwork phase was strengthening and refining the concept formed in the first phase, which, in terms of time, overlapped with the first phase, and emphasized the experimental component of the process. At this phase, in order to analyze the concept thoroughly, qualitative data collection methods were used.

In the fieldwork phase, the data collection instruments were individual face-to-face interviews and focus groups. In this phase, semi-structured interviews were performed

with 32 farmers of healthy products and other farmers. Interviews were transcribed and analyzed using concept analysis approach. During the final analytic phase, the findings of theoretical and fieldwork phases were compared to provide a clear and comprehensive definition of the concept of agricultural ethics. To ensure trustworthiness in research, peer debriefing was used, and the research methods adopted well matched the qualitative investigation in general and in information science in particular (Shenton, 2004).

## RESULTS

### Phase 1: The Theoretical Phase

The search about agricultural ethics within the literature started with these questions: What is the essence of agricultural ethics? What are the dimensions of agricultural ethics? What are the meanings of agricultural ethics? How has agricultural ethics been defined? How is agricultural ethics conceptualized? And what are the examples of agricultural ethics?

Most of the papers found in the theoretical phase had been indeed reviews of the definition and conceptualization of agricultural ethics. Some papers had dealt with these concepts by mentioning examples. In one sense, the current era of agricultural ethics began in the 1970s when Glenn L Johnson, an agricultural economist known for his work on asset fixity, took a sabbatical at Oxford University to work with several philosophers there. The result was a series of papers calling for a new area of explicit and logically critical exposition of the values underlying applied and problem-solving research in the agricultural sciences (Zimdahl, 2012).

According to the Encyclopedia of Environmental Ethics and Philosophy, agricultural ethics is concerned with the values and moral issues involved in food production and farming practices. It explores a wide range of issues including the proper

use of land, value of rural life, impact of agriculture on the environment, sustainability of agricultural systems, well-being of farmers, welfare of farm animals, improvement of crops, and safety and integrity of the food supply. By the turn of the twenty-first century, this range of issues had taken on added urgency because of advanced technological manipulations such as genetic engineering of plants and animals as well as animal cloning (Callicott and Frodeman, 2009).

Table 1 presents definitions, themes, dimensions, issues, and work scope of agricultural ethics. According to the literature review (Table 1), agricultural ethics is the ethical analysis of all policies, decisions, choices, processes, projects, technologies, and administrative practices in agriculture to prove their correctness or falsity for achieving sustainability in agricultural systems. In total, it can be considered protective, need-driven, generalist, and defensive. Agricultural ethics is associated with ethical philosophic analyses of challenges and crises created in agriculture in order to control and resolve these crises and achieve sustainability.

At the end section of the theoretical phase, the concept characteristic is determined. Characteristic is a dimension of the concept that repeats over and over when defining or describing the concept, without which one cannot say analysis of the concept has completed. These characteristics are grouped to provide a clear picture of the concept (Rezaei *et al.*, 2013). Figure 1 presents the characteristics of this concept, as expressed in the results of the studies.

## Phase 2: The Fieldwork Phase

In the fieldwork phase, data were collected through individual interviews and focus groups. The content analysis of the interviews revealed that the cases studied in the definition of the agricultural ethics mentioned several main themes including examples, definitions, issues raised in

agricultural ethics, and the causes of immorality in agriculture.

All the data collected from the interviews were analyzed through qualitative approach and content analysis. Once transcribed, the interviews were coded. At first, 84 initial codes were extracted, after which, through reductive classification, the categories and subcategories emerged. In order to ensure the reliability of coding, first, data were manually categorized and then they were reviewed. After finishing the data analysis, the researchers compared all the themes with the literature review, and similarities and differences between the emerged themes and those obtained through literature review were noted.

The research background and the review phase suggested that the agricultural ethics covers nine topics. In the fieldwork phase, the content analysis of the interviews showed that the studied community referred to almost six issues. In the meantime, a new topic called "legal considerations of the production system" was added to the nine themes of agricultural ethics. The six issues outlined in this section include ethics and animal rights, the structural and functional fit of farm, maintaining food security, legal considerations of the production system, food safety, and agriculture trade rights, which are briefly explained further (Figure 2; Table 2).

### Theme 1: Ethics and Animal Rights

Ethics and animal rights are a theme obtained from a sub-theme known as treating livestock, with 4 codes (Table 2).

### Theme 2: The Structural and Functional Fit of Farm

The structural and functional fit of farm theme includes two sub-themes of the challenge of large-scale farms and the survival of small farms, with totally 10 codes specifically referring to these themes (Table 2).

### Theme 3: Maintaining Food Security

Maintaining food security is another theme obtained from the fieldwork phase. This theme includes a sub-theme under the name "increase in agricultural production

**Table 1.** The definitions obtained in the theoretical phase (research findings).

| Definitions, themes and dimensions   | Source/Researcher                                      |
|--|--|
| Ethical Considerations: Integrity, lack of knowledge, global approaches, externalities.  | Westra <i>et al.</i> (1991)                            |
| Ethical challenges in agriculture include animal (nature) rights, conservation, organization of agriculture, and people versus planet relationships.   | Wunderlich (1991)                                      |
| Haynes (1995) claims in the Encyclopedia of Bioethics that because bioethics is “the ethics of the life sciences”, agriculture should be conceived as fundamentally part of bioethics. Agriculture contributes “as much to sustaining life as do the health professions.” It is clear that while those in agriculture are ethical in the sense that they do not cheat, lie, steal, or, if in research, doctor the data, they generally ignore the deeper ethical aspects of their profession. The Others that generally are outside of this mainstream, have not ethical agriculture.  | Haynes(1995)   |
| Mephram (1998) defines agricultural ethics as an emerging discipline that is “principally concerned with ethical issues relevant to public policy.” The aim of agricultural ethics in Mephram’s (1998) view is to “devise a coherent and unified ethical framework, which is relevant to the formulation of public policy within the context of a social contract.” Thus, agricultural ethics is no different from any other field of applied ethics in that the central task is to identify the moral dimensions of the area of study. Careful observers of agriculture, a group that does not include most of the American public, agree that agriculture has important moral dimensions especially regarding its environmental and social effects.  | Mephram (1998)   |
| It is one of the tasks of agricultural ethics to analyze the assumptions of cost-benefit analysis in order to develop broader views of rationality and reasonableness for the future of agriculture and to articulate new ideals for this branch of human economic activity.   | Vorstenbosch (2000)                                    |
| Agricultural ethics is the study of moral issues raised by farming. These include human interference with the course of nature; the effects of certain agricultural practices on present social conditions, and on the conditions under which future generations will live; the treatment of animals, especially when its aim is human advantage; and the value of farming as a human activity in itself.  | Comstock(2000)   |
| Four Worldviews of Agricultural Ethics: Stewardship, Productionism, Mainstream economics, Holism.  | Birkenfeld (2002)                                      |
| Ethics is about choices, and agricultural ethics is about choices for people engaged in agriculture either directly as farmers, or indirectly as government regulators, extension agents, researchers, CEOs, industrial workers, lawmakers, technology developers, consumers, or protestors.   | Chrispeels and Mandoli(2003)                           |
| Ten topics that over the past 20 or so years have generated considerable public discussion and academic analysis include farm structure, animal ethics, food safety, environmental impacts, international trade, food security, agricultural biotechnology, research ethics, public trust in science, and the process of institutionalizing agricultural ethics.   | Burkhardt <i>et al.</i> (2005)                         |
| Systematic thinking about the values and norms associated with the food system farming, resource management, food processing, distribution, trade, and consumption came to be referred to as agricultural ethics.  | Council for Agricultural Science and Technology (2005) |
| Agricultural ethics is analysis of the ethical philosophy of the challenges and crises created in agriculture in order to control and resolve crises and achieve sustainability.   | Burkhardt <i>et al.</i> (2005)                         |
| Food system serves needs rather than preferences.  | Boyd(2005)   |
| A major goal of agricultural ethics is to discover or develop clear, non-contradictory, comprehensive, and universal standards for judging right and wrong actions and policies.   | Burkhardt <i>et al.</i> (2005)                         |
| This is entirely in line with the true meaning of ethics in farming: ethics of farming is about recognition of, and respect for, limits to our freedom to use the land, nature, animals, and plants.   | Lammerts Van Bueren and Struik (2005)                  |
| Agricultural ethics is principally concerned with topics involving public policy. Its aim “should be to devise a coherent and unified ethical framework, which is relevant to the formulation of public policy within the context of a social contract. Sustainability and sustainable agriculture as a normative concept provides a reasonable starting point of ethical consideration. It encompasses vague moral intuitions such as intergenerational justice, sensible use of resources and so forth. Its importance stems from the exploitative use of resources on which agriculture depends, combined with the belief that the life and well-being of most human beings depends on agricultural production. The ethical challenge is to argue for an obligation to achieve sustainable agriculture and to identify problems if this obligation conflicts with other moral obligations and resolve them accordingly. | Grim (2004)  |
| One of the ethical concerns in agriculture is human concerns, including the welfare of humans and farmers, the work of children in the community, the salaries and wages of workers, the inadequate conditions of the work environment and sexual and racial justice.  | Braun(2005)  |
| The farm structure includes the average size of the farms, the relative share of farms in the market, the number of people employed in agriculture, and whether the production in the fields will be done by land tenure or ownership.   | Burkhart <i>et al.</i> (2005)                          |
| Agricultural ethics issues are often defensive and dismissive.   | Diebel(2008)   |

Continued...

Continue to Table1. The definitions obtained in the theoretical phase (research findings)

| Definitions, themes and dimensions   | Source                                 |
|--|--|
| Agricultural ethics is concerned with the values and moral issues involved in food production and farming practices. It explores a wide range of issues, including proper use of land, value of rural life, impact of agriculture on the environment, sustainability of agricultural systems, well-being of farmers, welfare of farm animals, improvement of crops, and safety and integrity of the food supply.   | Pascalev(2009)                         |
| Explaining an ethical framework for agricultural activities related to issues such as use of pesticides and chemicals, livestock treatment in agricultural systems, consumer rights, transgenic food, food security and hunger.  | Mahdavi Damghani and Moeinodini (2011) |
| Topics in agricultural ethics include uneven distribution of food, environmental impacts of excessive use of pesticides and chemicals in agriculture, animal abuse, and intensive production systems.  | Mephram (2012)                         |
| Sustainability ethics in agriculture concerns responsibility of producers towards ecosystems and use of resources, responsibility of manufacturers for the health of consumers and their trust, Equal access to owners in terms of exploiting resources, and treatment of livestock .  | Karami Dehkordi (2012)                 |
| Agricultural ethics comprises normative analyses and debates on the production, processing, distribution, and consumption of cultivated and human-supervised biological products typically (but not exclusively) used as food. Ethical issues associated with the use of fiber crops or hides and by-products from livestock products are also included. Some authors have used the term “agrifood ethics” to emphasize the inclusion of topics such as food safety, nutrition, or household consumption issues. | Thompson(2013)                         |
| Moving towards large farms and agricultural industrialization threaten the values and virtues emphasized by family farms, including hard work, truth, self-reliance, community responsibility, contentment, and treating livestock properly.   | Abedi Sarvestani (2014)                |
| Agricultural ethics was to be an integration of biological science and inquiry into the underlying values implicit in such key food system concepts as food safety, food security, profitable.   | Thompson(2015)                         |
| Agricultural ethics today concerns food security, animal welfare, ethical vegetarianism, justice for agricultural workers, and a host of issues relating to the risks of emerging agricultural technology.   |  |
| Conceptual components of business ethics in agriculture are resource conservation, ecocentric, religious obligation, social welfare, fair trade, institutional participation and convergence, respect for labor rights, progressiveness and meritocracy, qualitativism, public extension knowledge and technology, obligation of safety and health issues in work, commitment to social development and social marketing.  | Abdullahzadeh et al (2015)             |

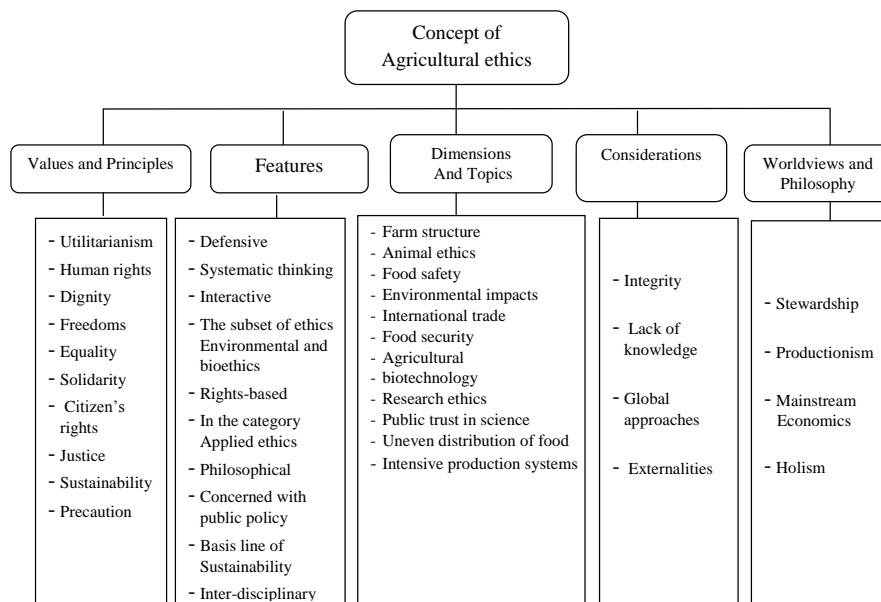


Figure 1. Themes and dimensions of the concept of agricultural ethics.

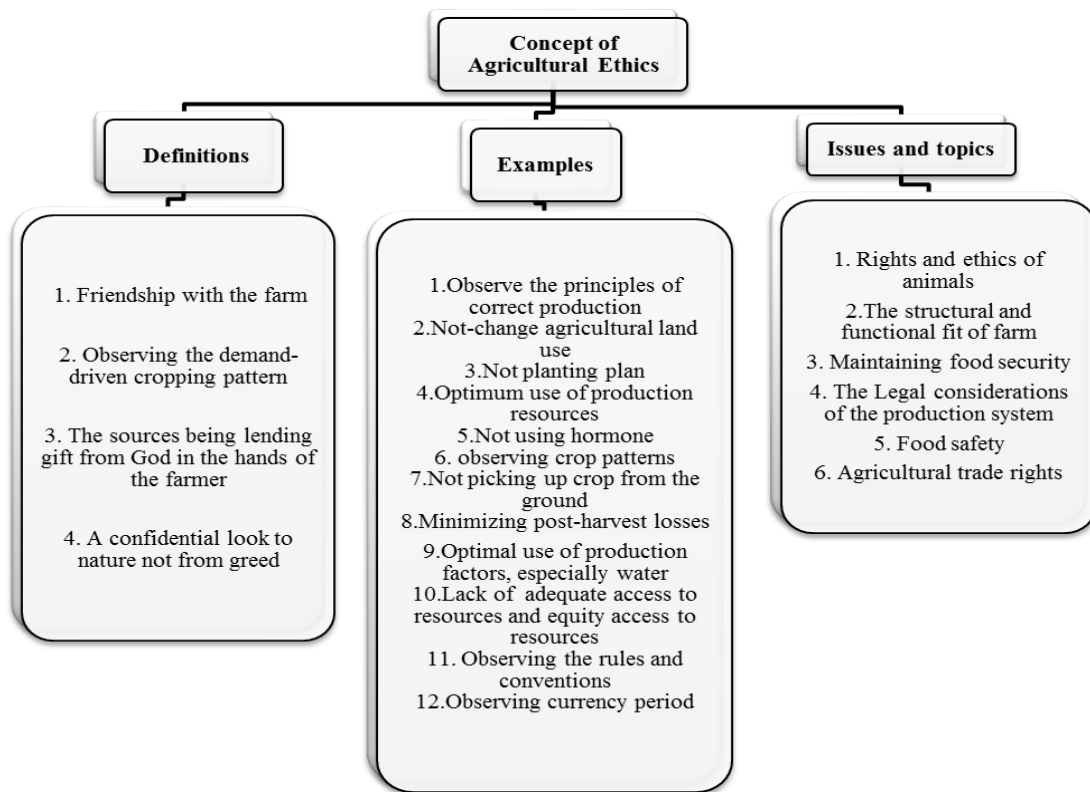


Figure 2. Conceptualization of the meaning of agricultural ethics in the view of the studied farmers.

and development", with about 6 codes extracted from the text of the interviews (Table 2).

**Theme 4: The Legal Considerations of Production System**

The legal considerations of the production system were among the new topics derived from the fieldwork phase and were absent in the research literature. This theme includes four sub-themes: considering the rights of other farmers and beneficiaries, rights of natural resources and future generations, respect for consumer rights, considering the environmental rights, and the concern over clean production with 21 codes explaining it with various descriptions (Table 2).

**Theme 5: Food Safety**

The fifth theme obtained from coding the interviews was food safety, which was formed by 10 codes and one sub-theme known as responsibility in the food health process (Table 2).

**Theme 6: Agricultural Trade Rights**

Two sub-themes, considering the producer's rights in the import and export of agricultural products and virtual water, with 4 descriptive codes, form the agricultural trade rights as the last theme of the fieldwork phase (Table 2).

The most important difference between the theoretical and fieldwork results of the research is that, in the theoretical phase, the definitions of agricultural ethics are more of an ethical nature with contradictions associated with some challenging and critical issues in the agricultural field. However, the definitions of the studied community mostly concerned the kind of behavior and view of the actors in the field of agriculture toward sources of production and their management. Another point is that many of the issues and characteristics of agricultural ethics are debatable at the international level while the human ecology in Sonqor County was too small for these issues to be reviewed and seen in the context

**Table 2.** Conceptualization and explanation of issues of agricultural ethics from the viewpoint of the studied cases.

| Descriptive phrases   | Subcategory  | Category/Theme                                    |
|---|--|---|
| Some dairy farmers treat livestock like rocks and think they do not feel any pain.<br>Treatment of animals by some cattle breeders is not correct and humane at all. They think they should only make money from them. This is not true and at the same time not ethical.   | Treating livestock   | Ethics and animal rights                          |
| In big farms, as most of the work is done by the workers, the costs are almost too much and the owner of farm does anything to increase the profits to be able to compensate for costs.<br>This is the place where a great deal of damage is made to nature, water, soil, and air. Workers do not care at all what may happen to the soil and water.<br>Large fields are not bad, but sometimes they disturb small farmers and use water unfairly, and more government support is given to them.  | the challenge of large-scale farms   | The structural and functional fit of farm         |
| Owners of small farms are very careful about their farm because their income depends on it, and since their land is not large, they have to deal with land and water in such a way that they can earn a permanent income from it.   | the survival of small farms  |   |
| Production of agricultural products and food supply for the public is more important than anything; it is a moral issue rather than a way of earning revenue.<br>Authorities must think about agricultural development. It is a moral responsibility because of the food supply.  | increase in agricultural production and development                        | Maintaining food security                         |
| My neighbor, at the time of spraying, runs tractor wheels on my land instead of his, such that my product is lost under the wheels of the tractor. Has he followed the ethics?<br>If you have not violated the boundary between plots and respected neighbors' rights, we can say that you have been acting morally.  | Considering the rights of other farmers and beneficiaries                  | The legal considerations of the production system |
| Pharmaceutical science may depend on these plants in the future, but we do not value. Why don't you wake up the sleeping farmers?<br>Infringement of national lands and natural resources on the pretext of increasing production leads to elimination of many plant species that may be contributing to the future generations by using them to produce medicines.   | Rights of natural resources and future generations                         | Food safety                                       |
| I think people should be aware of the way a product was produced and know how much toxic substance and fertilizers were used in its production (the right of having full product information for consumer).<br>If an agricultural product has been freshly sprayed with chemicals, then it must be known to the consumer or seller of the product (a commitment to provide information about possible risks, responsibility for using poisons and fertilizers).   | Respect for consumer rights  |   |
| If a farmer has a land near a river and does not violate the river's boundaries, this means an ethical act.<br>Farming activities should never lead to the loss of environmental beauty.<br>The nature has been devastated by our actions and, one day, the nature will take revenge from our malice and mischief, as we have been struggling with droughts, dust, and various diseases for years to come.  | Considering the environmental rights and the concern for clean production  | Agricultural trade rights                         |
| Agriculture more than ever needs to respect ethical rules, since the sources of production are limited and crop production has become unhealthy.<br>Import without tariff in agriculture sector is the biggest problem for farmers and is the most unethical work in agriculture. This affects the unethical behaviors of farmers toward the environment.<br>When there are a lot of products in the market and the government is also importing - this is not an ethical business.<br>In my opinion, today, export of products with high water requirements is unethical and economically problematic. | Considering the producer's rights in the import and export of agricultural |   |



of the interviews. The discussion of bioterrorism, the subject of international trade, fair trade, food versus fuel battle, and determining the function of agricultural products as food or biofuels, the uneven distribution of food at the global level, etc. are issues that lead to the emergence of ethical challenges whose resolution requires an ethical (philosophical and moral) analysis, not an economic cost-benefit analysis. The latter never includes any discussion on intergenerational equity, intergenerational equity, justice and environmental sustainability, and agriculture in its analytic equations. Based on the results of the theoretical phase, agricultural ethics is more concerned with macro issues of agricultural field such as policy-making and dealing with phenomena such as global hunger. Addressing issues that are globally recognizable are very important. Nevertheless, what actually can lead to sustainable production, crisis management, development and sustainability in the real sense is modifying the human ecology of farmers and their behavior toward production resources, which is far more important. Based on the results of the fieldwork phase, there are four areas in definitions of agricultural ethics from the perspective of the studied community: 1. A protective look at environment and not greedily; 2. observing the demand-driven cropping pattern; 3. the natural resources being a gift from God in the hands of the farmer; and 4. friendship with the farm. Descriptive codes and sentences representing this kind of view to the agricultural ethics are presented further. Note that only some of them are propounded because of their large volume (Table 3).

One of the great differences between the fieldwork phase and theoretical phase is the expression of the instances of a moral act in agriculture, which has never been mentioned in the studies reviews. "not burning the crop residues in the field (such as crop stubble and straw), following crop rotation, not plowing the boundary between farms, not

plowing in the direction of land slope, minimal use of poisonous chemicals and fertilizers, not using a toxin for several products, paying to attention to poison dose, conservation agriculture, fallow, not changing agricultural land use, following not-planting plan, optimum use of production resources, not using hormones, not cultivating plants with high water requirement, observing cropping patterns, not harvesting the crop from the farmland due to falling the price, minimizing post-harvest losses, optimal use of production factors especially water, lack of adequate access to resources and equity in access to resources, observing the rules and conventions, adherence to standard period between use of pesticides and harvesting are examples of what has been repeatedly and often spoken by the community studied in the interviews. Table 4 shows the process of constructing the themes.

Farmers were hardly able to express their views in defining the agricultural ethics. In the end, with multiple interviews, only four types of views mentioned earlier were formulated. Based on what has been said, the final definition of the fieldwork phase of agricultural ethics can be stated as follows: agricultural ethics requires a kind of non-anthropocentric thinking that takes into account the inherent value of the production resources and acknowledges that production will happen during conservation. Agricultural ethics means exploitation of production resources without pressure on resources; production with minimum damage, and respect for the unspoken laws of nature, thoughtful development, and reconciliation with nature. Examples of agricultural ethics is a redefinition of agricultural sustainability, but the important point of the results of the fieldwork phase is changing the view of the farmers on their profession and their role in food security and, more importantly, on human health and the environment, which should change. Nevertheless, it will not be easy to change farmers' perspective and, indeed, it requires the efforts of the authorities and the

**Table3.** Conceptualization and explanation of definitions of agricultural ethics from the view of the studied cases

| Descriptive phrases  | Category   |
|--|--|
| As a farmer, if I have a confidential look at environment, water and soil, it will be said that I have behaved morally. Confidential look means that my life depends on preservation/conservation of water and soil.   | A protective look at environment and not greedily                  |
| As a farmer, if I acted on the advice of agricultural experts and cultivated in accordance with carrying capacity of the land and its need, then ethics would be respected.  | Observing the demand-driven cropping pattern                       |
| Agricultural ethics is a situation where there is no need to grow a crop in the abundance of crops in the market, I devote my land to cultivate a crop that is more necessary.   |  |
| When dealing with water and soil, etc., agricultural ethics means that a farmer does not have a sense of personal ownership, and considers water and soil as the first reflections of the grace of God, followed by the national capital that has been entrusted to him. | The sources being lending gift from God in the hands of the farmer |
| As a farmer, behaving ethically means that, if it is not my irrigation turn, and water is being wasted, then I take water back to my neighbors' farm.  |  |
| Consideration of rules of agricultural ethics means that the farmer would love soil, farm, bush, plant; and the farm feels "the smell of farmer", who does not harm it with fertilizers.   | Friendship with the farm   |

government to provide the context for change. Also, since concepts are the constructive blocks of theories, the findings of this study can be helpful in developing the model and theory.

### Phase III: The Analysis Phase

The results showed that based on the integration of theoretical and fieldwork results, agricultural ethics is a non-anthropocentric systemic thinking, which is based on theocentrism. It has 10 key issues and a defensive nature, based on need and protection. The working scope of agricultural ethics ranges from macro issues in national and global issues to human ecology (human relationship with the environment) of a farmer, suggesting that it has a systemic thinking that is necessary to achieve sustainability.

Agricultural ethics is not indifferent to agricultural development and production issues, but it always prefers production "based-on-need" to "preferences". Unsurprisingly, it lays a great emphasis on important issues such as equality, intergenerational equality, justice, fairness,

and rights. Essentially, ethics captures the terms mentioned, and it does not change whether it is in the field of agriculture and the environment, or business, and the like.

## DISCUSSION

To conduct this research, a hybrid model was used. Attempt was made to review the essence of knowledge in the field of agricultural ethics by reviewing previous studies and providing an operational definition of it. In the theoretical phase, an appropriate framework for comprehensive analysis and the redefinition of the concept of agricultural ethics was provided to be used at later stages. The results of this phase involved identifying characteristics, definitions, and dimensions of the concept of agricultural ethics. In the fieldwork phase, the data from qualitative studies were used for a more complete analysis of the concept. Finally, in the third phase, the results of the theoretical phase were combined with the insights obtained from the fieldwork phase. Eventually, by applying an analytical approach, a final definition of agricultural ethics was developed.

**Table4.** Conceptualization and explanation of typical examples of agricultural ethics from the view of the studied cases.

| Descriptive phrases   | Subcategory   | Category/<br>Theme                           |
|---|---|--|
| Burning crop stubble and straw in the fields (burning fields) is the most immoral act in agriculture that really hurts environmental lovers and must never be practiced in nature.  | not burning the remains of the field                |  |
| Rotation of cereal crops and grains are one way of controlling pests and diseases and helping the soil, which is moral itself. Ethics means observing the principles that may have been very trivial.   | crop rotation                                       |  |
| The respect of agricultural ethics means that I do not plow the border between my own land and my neighbor's.   | not plowing boundary between lands                  |  |
| The respect of agricultural ethics means not plowing in the direction of the land slope.  | not plowing in the direction of the earth gradient  | Observe the principles of correct production |
| Overuse of poisonous substances and fertilizers in agriculture puts agricultural ethics under question.   | minimal use of poisonous substances and fertilizers |  |
| I know a farmer who uses a poisonous agrochemical for several products. In your opinion, what does he know about agricultural ethics?   | not using a toxin for several products              |  |
| If I pay careful attention to the dose of poison, I have also respected nature and I have been benevolent.  | attention to poison dose                            |  |
| Engineers advise on conservation agriculture. I think I pay attention to their advice and this means I consider ethics in agriculture.  | conservation agriculture                            |  |
| A farmer, who adheres to the fallow culture, respects the rights of the earth and follows ethics.   | fallow  |  |
| If the land has cultivation and production conditions and does not need anything special, land use change is not ethical.   | not changing agricultural land use                  |  |
| Respect for not-planting plan means respect for nature and not-planting plan is the result of lack of ethics in agriculture   | not planting plan                                   |  |
| If I optimally used water, seeds, and toxins in my production, I acted ethically.   | optimum use of production resources                 |  |
| Farmers sometimes inject hormones into tomatoes and watermelons for the colorful product. But, this is not right at all.  | not using hormones                                  |  |
| Today, agriculture must be based on a detailed study that determines the cultivation of each region based on the climate and availability of the water. However, we actually cultivate whatever we like in agriculture.   | observing crop patterns                             |  |
| Watermelon is the product that we cannot sell in this area at the beginning of the season, and its prices are much lower in the harvesting season. I decided not to cultivate it from this later on, because its water consumption is too high (not cultivating crops with high water requirement).   |   |  |
| Agricultural ethics is not just about the time of production, but post-harvest is also important. If we prevent loss of products, we know the value of the resources of production, especially water, and this is really ethical.   | minimizing post-harvest losses                      |  |
| What do people of Hosseinabad plain really think? They think they can use well water while we have no water for our products in some years. Stealing water is not only related to illegal wells; likewise, legal wells that overdraft in the current situation are considered as stealing water and they are abusing the right of other people. | optimal use of production factors especially water  |  |
| The so-called authorized or unauthorized digging wells are destroying the rest of the nation and it is immoral.   |   |  |
| Sometimes I tell the owner of the unauthorized well that the use of this water in your production is not right, because water is a national capital and should be available for everyone, especially for future generations.  |   |  |

Continued...

**Continue of Table 4.** Conceptualization and explanation of typical examples of agricultural ethics from the view of the studied case

| Descriptive phrases  | Subcategory  | Category/<br>Theme |
|--|--|--------------------|
| Water dams are preventing the loss of resources and benefiting us, but today they do not give us water, which in the area where we have 70 wells are legal and illegal, and as a result our motivation to exploit more resources will be the main culprit. You see much pipelines and its staggering costs. How much of our land is destroyed? In many cases, the government does not act ethically. If the government wants, we will act ethically. Do we like immorality? Certainly not. At first we and our family suffers from the immorality. | lack of adequate access to resources and equity in access to resources |                    |
| In the drought season, people in our village on the river water, some farmers who are not too many, use a pump to irrigate the land near the village, and water is in fact illegal and immoral because it belongs to other villagers, but they are somehow taking their profit. In my opinion, it is not right at all.   | observing the rules and conventions                                    |                    |
| Keeping the proper time interval between the time of use of poisonous agrochemicals and the time of consumption of the products can be considered a kind of morality.  | adherence to standard period between use of pesticides and harvesting  |                    |

Theoretical phase results indicated that, in general, agricultural ethics is a multifarious, complex, and dynamic subject. In short, with advances in technology, the topics related to agricultural ethics will be enhanced. In his study, Qari Seyyed Fatemi (2001) concluded that bioethics is expanding according to the advancements in biotechnology, such that a comprehensive list of issues in this field cannot be presented. Dundon (2003) argued that multifunctional agriculture has complicated the ethical issues in this field.

Meanwhile, the results indicated that agricultural ethics has been studied in terms of both behavior and philosophy, where topics such as farm structure, food security, food safety, global trade, agricultural biotechnology, trust in science, research ethics, environmental effects, and animal ethics lie in its subcategory. The results of the theoretical phase showed that agricultural ethics, while addressing macro agricultural issues, such as policy-making and confronting phenomena such as hunger and its causes, also captures the normative analysis of all stages of production, distribution, and consumption of agricultural products. Despite the importance of addressing issues at a global level, what can indeed lead to sustainable production, crisis control, development, and sustainability improve the human ecology of farmers and

behavior towards the natural resources for production. Based on the results of theoretical phase, agricultural ethics involves considering ethical framework for agricultural activities at various stages and achieving comprehensive criteria for judging about policies and practices in production, distribution and consumption of agricultural products, which in total is protective, need-driven, systemic and defensive. Agricultural ethics is an ethical-philosophical analysis of the challenges and crises in the agricultural system to control and resolve those challenges to achieve sustainability. In the fieldwork phase, a review of the data showed that agricultural ethics is a kind of non-anthropocentric thinking, joint with theocentrism, which is a result of justice. Agricultural ethics based on the results of fieldwork phase involved exploitation of production resources without exerting pressure on resources, that is, production with minimum damage, respect for unspoken natural laws, thoughtful development, and reconciliation with the nature. On the other hand, the results of the study suggested that agricultural ethics is redefinition of agricultural sustainability. Nevertheless, the important point of the results of fieldwork phase is to change farmers view on their profession and their role in food security as well as human and

environment health. However, farmers' perspective will not change, unless appropriate structures as well as educational and motivational mechanisms are created.

The most important characteristic of agricultural ethics is its systemicity and its direct relationship with the "choice". Studies have suggested that agricultural ethics pays attention to theoretical and practical agricultural issues, and covers the broadest macroeconomic issues to the smallest agricultural practices undertaken by farmers. Achieving clear, comprehensive, inconsistent and universal criteria for judging the right and wrong policies and practices in the agricultural system is a key objective of agricultural ethics, implicitly confirmed in the interviews. In this regard, the studied society described the "irrational and inappropriate policies of the state" as one of the main reasons for the unethical agriculture. An important feature of agricultural ethics identified in the theoretical phase was prioritizing cultivation according to the need rather than preferences, as noted by the community studied for the definitions and expressions of agricultural ethics.

The most important difference between the theoretical and fieldwork results was that, in the theoretical phase, the definitions of agricultural ethics were more based on the issues and ethical contradictions associated with some challenging decisions that can potentially create crisis in agriculture. However, the definitions of the studied community mostly involved the type of attitude of agricultural actors towards production resources and management.

It was also found that many aspects of agricultural ethics were debatable at international level while the studied community did not mention these specific issues. The subjects of bioterrorism, international trade, the conflict between food and energy, determination function of agricultural products as food or biofuels, uneven distribution of food at the global level, etc. are issues that create ethical challenges. The resolution of these

challenges requires an ethical and philosophical analysis, not a cost-benefit analysis of economics, which never captures inter-generational equality, intra-generational equality, justice and the environmental and agricultural sustainability in its analytic equations. The unpleasant experience of many years of developmental actions based on economic approach without considering the environmental, cultural, and social impacts of these actions (Fazeli, 2009) is an affirmation of this.

Agricultural ethics based on integration of theoretical and fieldwork results can be summarized as follows: "Agricultural ethics is an anthropocentric systemic thinking that is based on theocentrism, has ten key themes, and has a defensive, need-driven, and protective nature. The working scope of agricultural ethics ranges from a large scale national and global issues to human ecology of a farmer. This suggests that this concept has a systemic thinking required for achieving sustainability. Note that agricultural ethics is not indifferent to production increase, but the need-based production is of higher priority to preferences. Certainly, it is unexpected for agricultural ethics to be indifferent to issues such as intergenerational equality, intergenerational equality, justice, fairness, and rights". The important challenges of agriculture are understanding sustainability and acting appropriately to help farmers to deal adequately with the resources, sense of responsibility towards the health of consumer and environment, Therefore, the study and refinement of the concept of agricultural ethics can pave the way for improving the current situation. The findings of this study can provide an opportunity for further study on the development of the concept of agricultural ethics and its application in the fields of theorization and research in agricultural education and management. Identifying the features of the concept of agricultural ethics will further promote it. Indeed, the importance and applicability of this concept to agriculture can serve as a tool for research, development

and extension of the knowledge base existing in this profession. The results of this study can also be used as a guide for farmers, managers, and agricultural experts in managing production resources, controlling environmental crises, and protecting human and environment health. Also, as concepts are the constructive blocks of theories, the findings of this study can be helpful in developing a model and theory. Finally, it should be noted that the concept analysis is an endless process, and as long as knowledge and experiences are available, the concept should always be developed further. In other words, concepts changes over time, and what looks right today may not be correct tomorrow (Rafii *et al.*, 2010). Therefore, the final product is always experimental. Indeed, the findings of this study are only the beginning of further studies on agricultural ethics.

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### مطالعه دیدگاه کشاورزان از اخلاقیات در کشاورزی (مورد مطالعه: شهرستان سنقر)

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#### چکیده

اخلاق کشاورزی در دهه‌های اخیر به‌طور گسترده مورد بحث قرار گرفته است. علی‌رغم مطالعات بسیاری که پیرامون این مفهوم انجام شده است، هیچ توافقی به‌طور خاص در کشورهای در حال توسعه در مورد تعریف اخلاق کشاورزی وجود ندارد. از این رو، این مطالعه با هدف بررسی دیدگاه کشاورزان شهرستان سنقر از اخلاق کشاورزی انجام شد. این مطالعه با استفاده از مدل هیبرید به تعریف مفهوم اخلاق کشاورزی در ۳ مرحله پرداخت. در مرحله نظری، ویژگی‌های اخلاق کشاورزی از طریق مرور ادبیات (تا سال ۲۰۱۷) شناسایی شد، برای توسعه ویژگی‌های و تأیید ابعاد حاصل از مرحله نظری، مصاحبه‌های عمیق با ۳۲ مشارکت‌کننده نمونه در مرحله میدانی (کار در عرصه) انجام شد. در مرحله سوم تحلیل نهایی بر روی اخلاق کشاورزی بر اساس یافته‌های مرحله اول و دوم انجام شد. بر اساس ادغام نتایج مطالعات و یافته‌های مصاحبه، تعریف اخلاق کشاورزی را می‌توان به شرح زیر توصیف کرد: اخلاق کشاورزی موضوع ساختار مزرعه، امنیت غذایی، ایمنی مواد غذایی، تجارت جهانی، بیوتکنولوژی کشاورزی و اعتماد به علم، اخلاق تحقیق، اثرات زیست محیطی، اخلاق و حقوق حیوانات را شامل می‌شود. دامنه و حوزه کار اخلاق کشاورزی از مسائل کلان در سطح ملی و جهانی تا اکولوژی انسانی (روابط انسان با محیط‌زیست) یک کشاورز را دربرمی‌گیرد که نشان می‌دهد این مفهوم از تفکر سیستمی برخوردار است که لازمه دستیابی به پایداری است.