

AWARENESS ABOUT FOOD SAFETY AND ANIMAL HEALTH STANDARDS – THE CASE OF DAIRY CATTLE IN ALBANIA

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Abstract

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The objective of this exploratory study was to assess Albanian farmers' awareness about food safety standards. More specifically, the authors focused on farmers' awareness of the food safety institutional framework, national food safety standards, and basic animal welfare. Farmers' lack of awareness is likely a contributing factor to food standards not being met in most cases. A structured questionnaire-based study was conducted to assess farmers' general knowledge about the food safety aspects of farm practices. Some aspects of farmers' lack of awareness follow. In one example, about 87 percent of respondents stated that they have no cooling tank for storing milk, which is a prerequisite for meeting milk safety and quality standards. Most farmers were also found to be unaware of the institutions responsible for food safety and animal health control. A surprising 1/3 of the farmers surveyed stated that they rarely or never use ear tags to identify their own animals. Based on these and other findings, extension and veterinary services must plan and implement farmer awareness development activities. They also need to commence teaching and training programs for dairy farmers, specifically targeted at improving safety standards at farm level. Finally, public and donors' farmer support schemes should be strongly linked to the implementation of food safety standards.

Key words: food safety, animal health standards, dairy farm, Albania

List of abbreviations: CSPro – Census and Survey Processing; EC – European Commission; EFSA – European Food Safety Authority; EU – European Union; GAP – Good Agricultural Practice; GDP – Gross Domestic Product; HACCP – Hazard Analysis and Critical Control Point; LGU – Local Government Unit; MAFCP – Ministry of Agriculture, Food and Consumer Protection; MARDWA – Ministry of Agriculture, Rural Development and Water Administration; NFA – National Food Authority; NMS – National Minimum Standards; RAD – Regional Agriculture Directorate; SPSS – Statistical Package for Social Sciences; WHO – World Health Organization

Introduction

For several years, Albania has been undergoing transition to an open-market economy, and, as a result of this, similar to other Eastern European countries, has experienced important changes in food production and consumption patterns. During the early phase of this transition, Albania, being a

developing country, made food security its agricultural priority. However, in recent years based on four primary factors listed below, food safety and quality have received growing attention by policy makers and private sector. These factors are: 1) increasing consumer income and concomitant food safety and quality awareness, 2) ongoing approximation by Albania of EU institutional models, levels of agricultural de-

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velopment funding, and EU legal structures, 3) introduction of EU owned supermarket chains, and 4) increased levels of domestic livestock production. EU legal approximation also imposes more attention to animal health control which previously had not been a priority policy concern.

The agriculture sector remains one of the most important sectors of the Albanian economy. It employs about ½ of the working population. Agricultural production amounts to almost 1/5 of the GDP; and livestock is its most important subsector accounting for about ½ of agriculture's total production. Livestock production is seen as the backbone of Albania's agriculture and it has, especially the dairy sector, become a priority agricultural subsector by government (MARDWA, 2014).

The cattle subsector is important in Albanian agriculture as it provides 86 percent of milk and 47 percent of meat production (MAFCP, 2012; MARDWA, 2014). Cattle breeding focuses on dairy husbandry because there is not, as of yet, any specialized beef industry. Most of Albanian beef consumed domestically is sourced from dairy farms. Farm level – dairy and beef production is characterized by small-scale peasant farming systems. Most small farms continue to produce in the traditional ways and their products are marketed largely through informal channels.

Diseases caused by microbiological contamination of food remain major threats to public health. Despite the recent progress of the Albanian food sector, the move from centralized to market-based economy has affected food safety. Animal and human health systems are threatened in their entirety, leaving the population increasingly at hazard (WHO, 2009). Multiple problems in Animal Health and Food Safety System have been identified by several studies and reports – the most notable issues were found in meat and milk products. Brucellosis has been a major health concern (WHO, 2009; World Bank, 2007). One of the reasons, for this situation, in addition to weak law enforcement, is limited farmer awareness about animal diseases and food safety standards and their consequences in terms of health risks for farm households and final consumers.

There are gaps in food safety standards throughout the dairy value chain going downstream. The system for the control of milk quality is still weak and not functioning well. A major concern comes from milk being sold on the road or directly delivered to households at their homes. These traditions make control difficult. Conversely, laboratories are not efficient and, despite this, farmers are required to pay for the analysis. Thus, for many reasons, farmers neglect analyzing samples of their milk which might be dangerous to the public health. Only a few larger mechanized dairies have implemented an internal system of quality control that also

includes raw milk. Closed cooling chains from producer to consumer are still rare. EU quality and food safety standards are not yet implemented (Berkum et al, 2009).

Despite improvements in food safety, the Albanian agri-food sector, particularly meat and dairy subsectors face serious challenges (World Bank, 2007). Uncontrolled or non-application of sanitary and quarantine rules, combined with farmers' low level of cultural and technical education contribute to the problem. Other actors in the value chain further exacerbate this weakly supervised system. Unreliable food safety and quality undermine domestic product competitiveness as consumers with rising incomes seek alternative choices that are safer. These weaknesses will only grow as average incomes rise and consumer preferences and purchase options continue to evolve.

Food safety institutional framework and standards in Albania

Food safety and veterinary institutional framework in Albania

The Albanian Government considers food safety and consumer's health protection a policy priority in its agenda. The basic law in Albania on food safety is Food Law No 9863¹, (dated 28.01.2008). It provides the basis and principles for a higher standard necessary to better protect human life and health. It represents consumers' interests, and sets requirements for production and circulation of safe food and feed. The law is partially compliant with the EU provisions (European Regulation No.178/2002 on food law) but improvements are still needed. According to the Food Law (Article 26), food production companies are obliged to implement Hazard Analysis and Critical Control Point (HACCP), as a self-control mechanism. HACCP is a basic tool to improve and ensure food safety in Albania.

In compliance with the Law on Food, the National Food Authority (NFA) was established. The creation of the NFA was based on strategic priorities set down in the European Commission's "White Paper on Food Safety". The NFA was supported by EU funded projects aiming to consolidate and strengthen the administrative structures responsible for enforcement of EU compliant food safety measures.

The Food Safety System² in Albania is enacted and administered through the following three institutions:

¹ All Albanian legislation can be found (in Albanian) in <http://ligjet.org>.

² The description of the food safety and veterinary institutional framework and background situation dates back to the time when the farm survey was conducted. Food safety institutions and legislation have been subject to ongoing reform/changes.

- Ministry of Agriculture, Rural Development and Water Administration (MARDWA) which has primary responsibility for official control of animal health, plant protection, and safeguarding human health from animal and food born diseases. These tasks are implemented by the veterinary and plant protection services.

- NFA, a public entity under MARDWA, which has these functions: a) controls and inspections, b) risk assessments, and c) communication between involved parties; all three activities needed to support food safety, animal health, and plant protection in Albania.

- Local Government Units (LGU), mainly municipalities, which are responsible for veterinary-sanitary control of animals before, during and after slaughter. They also provide veterinary certification in accordance with those requirements set forth in law.

The Food Law is not fully enacted and limited coordination between LGUs and NFA has led to duplications of functions with regards to control and certification (EC, 2013). Information on safety issues has not been updated; and the interaction and exchange of data, experience, and, situations arising, between the three institutions remains a challenge for the future. The system exists legal and institutional limitations are further hampered by inadequate funding to strengthen the Food Safety and Nutrition System's research and laboratory facilities.

The Veterinary Inspectorate is organized according to the provisions of the Law on "Veterinary Service in the Republic of Albania" (No. 10465, dated 29.09.2011). This service functions for both state and private systems. It carries out multiple veterinary services; inspection and maintenance for animal health and animal well-being, as well as public veterinary health and control of veterinary medical products. The Veterinary Inspectorate operates under the MARDWA at the central level and with the veterinary services at the regional level. District veterinary inspectors carry out these services at district and municipality levels. Each municipality has its own veterinary office.

In Albania, the legislation on animal health and welfare, as well as disease control, is in place but not often enforced; for example animal movements are not controlled at all. Often these policies remain insufficiently implemented and insufficiently enforced primarily due to a lack of advocacy groups as well as weaknesses in public administration.

Food safety and animal welfare minimum standards in Albania

According to the European Union, animals are sentient beings. The general aim of animal welfare regulations is to ensure that animals need not endure avoidable pain or suf-

fering and obliges the owner / keeper of animals to respect minimum welfare requirements. Human safety along the food chain is indirectly affected by the welfare of animals; particularly those farmed for food production, due to the close links between animal welfare, animal health, and food-borne diseases. Stress factors and poor welfare can lead to increased susceptibility to disease among animals. This can pose risks to consumers through common food-borne infections such as Salmonella and E.Coli (EFSA, 2015)

EU has among the world's highest standards of animal welfare. The overall framework for EU action on animal welfare is set out in the EU Animal Welfare Strategy 2012-2015. Harmonised EU rules are in place in Albania covering a range of animal species and welfare-affecting issues. Council Directive 98/58/EC lays down the minimum standards for the protection of all farmed animals, while other EU legislation sets welfare standards for farmed animals during transport and at the time of stunning and slaughter. Specific Directives cover the protection of individual animal categories such as calves, pigs, and laying hens. In addition to farmed animals, animals used in laboratory tests and wild animals kept in zoos are also protected by harmonised EU standards (EFSA, 2015)

The welfare of food producing animals depends largely on how they are managed by humans. A range of factors can impact on their welfare including housing and bedding, space and crowding, transport conditions, stunning and slaughter methods, castration of males and tail docking.

Therefore MARDWA³ has introduced National Minimum Standards (NMS) in accordance with EU practice. Good Agricultural Practice (GAP) should correspond to the type of farming that a farmer would follow in the region concerned, entailing at minimum, compliance with general statutory environmental requirements. The beneficiaries of such policies are: a) small, medium and large-scale farms, who will achieve added value for their produce and better access to markets; b) consumers, who will be assured of better quality and safer food, produced in sustainable ways; c) business and industry, who will gain profit from higher quality products; and d) all people, who will enjoy a better environment.

During recent years, food safety, animal welfare, and the NMS have been reformed through amendments and new laws; as well as through the Minister of Agriculture's Orders applying to such issues such as animal and farm registration, business licensure, transport and slaughtering of animals, milk collection and transport, animal health etc.

³ Ministry of Agriculture full name was Ministry of Agriculture, Food and Consumer Protection (MAFCP) until 2013 and as of 2013, following institutional changes, it is named Ministry of Agriculture, Rural Development and Water Administration (MARDWA).

The Veterinary and Livestock Breeding Services are responsible for controlling and supervising the application of the legal framework in the field as per the law and the Minister's orders.

As says the Law "On Veterinary Service in the Republic of Albania" and Law on "Livestock Breeding" (No. 9426, dated 6.10.2005), responsibility for the identification and the welfare of the animals rests with the Veterinary Service and Zoo-technical Service. However, the Zoo-technical Service has shrunken significantly in the last years. In addition, the proper functioning of veterinary service is hampered by overlapping responsibilities, lack of good communication with the NFA, properly qualified staff, and financial resources. As result, animal databases are not updated regularly due to a lack of reporting. No measures have been taken with regard to animal waste management or improving animal market infrastructure (EC, 2013).

Materials and Methods

This is an exploratory study, aiming at assessing farmers' awareness about animal health and food safety standards focusing on the NMS. It is expected that most farmers have limited awareness about national animal health and food safety standards, and given the constraints in the institutional framework, such standards are not met in most cases. This survey provides insight into gaps in awareness and information at farm level as seen from different points of view.

The questionnaire was designed based literature review including national minimum standards – the draft questioner was consulted with various experts and was tested in the field with 8 farmers. 144 interviews were carried out on randomly selected larger farms. These farms were selected from Shkodra and Lushnje regions. In principle interviewers were instructed to interview farmers with more than 3 cattle; thus focusing on market oriented rather than subsistence farms (which typically have 1 cow) – the average sample farm size having been 9 cows (Table 1).

Data was entered into the CSPro based database. The database was then transformed into a SPSS file and has been analyzed based on descriptive statistics.

Table 1
Main sample socio-demographic and farm indicators.

Sample farm household indicators	Mean	Std. Dev
Household size	5.20	2.200
Age	50.85	11.321
Experience with livestock (years)	18.08	8.449
No. of cattle	8.72	9.174

Source: Field survey

Results

Milk storage

According to the law on "Production, Collection, Processing and Marketing of Milk and Milk-based Products" (No. 9441, dated 11.11.2005) – *Milking be made respecting all hygienic conditions. If the milk is not collected within two hours of milking, it is cooled to the temperature of 8°C or less in the case of daily gatherings or 6°C when collection is not daily. When transported to the processor, temperature of the cooled milk must not exceed 10°C, if the milk is not collected within two hours of milking (appendix A of the law).*

To reach such temperatures, a cooling tank must be used. Otherwise the quality of raw milk will not be satisfactory, especially in the case of low hygienic conditions during milking and transporting. It's important to improve the level of knowledge of dairy farmers within the scope of hygienic conditions and microbiological milk quality standards, guarantee law enforcement and support for cold storage related investment. Most of the farms in the study were not following the requirements specified in the above mentioned milk law. It is not surprising then that about 87 percent of the respondents stated that they have no cooling tank for storing milk (Table 2). Thus, it is striking that even most relatively large farms (which were the target of the survey) do not possess cooling tanks, which is a prerequisite for attaining milk safety and quality standards.

Table 2

Answer to the question: "do you have cooling tank?"

Answer	Frequency	Percent
No Answer	1	.7
Yes	18	12.5
No	125	86.8
Total	144	100.0

Source: Field survey

Awareness about the institution responsible for food safety

Information provided by Article 39 of Food Law notes that official control of food shall be carried out by the inspectorate of food and feed control and NFA laboratories of food safety and veterinary inspection. The inspectorate of food and feed control has in its structure experts in the areas certified by NFA. As an increasingly important role for food control systems is the delivery of information, education and advice to stakeholders across the farm-to-table principle, these institutional resources are critical to its best functioning.

Farmers were asked to choose the institution in charge of food safety in Albania providing them several options. Most

farmers stated that they did not know (Table 3). Among those that answered that they knew; many chose the wrong answer, indicating the low awareness level among farmers about how the food safety system functions.

Table 3

Answer to the question: “which is the institution in charge of food safety?”

Answer	Frequency	Percent
National Food Authority (NFA)	41	28.5
Regional Agriculture and Food Directorate (RAFD)	18	12.5
Ministry of Environment	2	1.4
Food safety sector, Ministry of Agriculture	5	3.5
Other	2	1.4
I don't know	76	52.8
Total	144	100.0

Source: Field survey

Awareness about the institution responsible for animal health certificate

The Law on “Veterinary Service in the Republic of Albania” (article 55 and 59) emphasizes that the veterinary service is responsible for issuing veterinary certificates for: a) the movement of the animal or those products of animal origin, out or from of the ‘holding’ of origin, b) trade of animals, and c) slaughtering of animals.

Farmers were also asked to identify the institution in charge of issuing animal health certificates providing them several institutional options from which to choose. Almost half of the farmers stated that they did not know (Table 4). Of those that answered that they knew, many chose the wrong answer, again indicating the lack of awareness of institutional responsibilities, in this case regarding animal certificates.

Table 4

Answer to the question: “which is the institution that issues animal health certificate?”

Answer	Frequency	Percent
NFA	3	2.1
RAFD	57	39.6
Ministry of Environment	2	1.4
Commune	5	3.5
Food safety sector, Ministry of Agriculture	6	4.2
Other	4	2.8
I don't know	67	46.5
Total	144	100.0

Source: Field survey

Awareness about the institution responsible for ‘stable’ standards

According to the Law on “Livestock Breeding” (article 9, 10, 14 and 16) Regional Agriculture Directorates (RAD) are responsible for approving the designs of stables for livestock farms, as animals are bred and used in a way that fits the purpose of keeping them in line with their physiological needs and characteristics of the species. Stable standards are important basic prerequisite and also indicator of animal health standards.

Almost 2/3 of interviewed farmers stated that they did not know which institution controls stable standards (Table 5). Also among those that answered that they did know, many chose the wrong answer, indicating the lack of information about controls on livestock facilities.

Table 5

Answer to the question: “which is the institution that controls stable standards?”

Answer	Frequency	Percent
NFA	2	1.4
RAFD	29	20.1
National Registration Center	1	0.7
Ministry of Environment	5	3.5
Commune	9	6.3
Food safety sector, Ministry of Agriculture	1	0.7
Other	2	1.4
I don't know	95	66.0
Total	144	100.0

Source: Field survey

Awareness about animal identification and farm register use and control

It is essential that farmers, veterinarians, and public health officials can identify which animals have recently been transported from one farm to another or from a farm to a processing facility. If that animal is found to be sick, through this information, these institutions can trace the animal's path and find any other animals it may have come into contact with and be potentially exposed to a disease. Veterinarians can then determine if those animals need to be tested, treated, or even quarantined to prevent further spread of disease. While this is one more action the farmer must take, and paperwork is required; this is a very important step in securing the safety of our food supply. The regional veterinary service (part of RAD) is in charge of livestock identification (article 9, law on Veterinary Service in the Republic of Albania).

Although most farmers state that they have a farm livestock book/register (Table 6), they are not aware of the institution which is in charge of controlling it (Table 7).

Table 6

Answer to the question: “do you have a farm book/register on livestock?”

Answer	Frequency	Percent
No Answer	2	1.4
Yes	77	53.5
No	65	45.1
Total	144	100.0

Source: Field survey

Table 7

Answer to the question: “which is the institution that should control animal book/register?”

Answer	Frequency	Percent
NFA	1	.7
RAFD	30	20.8
National Registration Center	1	.7
Commune	3	2.1
Other	7	4.9
I don't know	102	70.8
Total	144	100.0

Source: Field survey

According to the law on “Veterinary Service in the Republic of Albania” (article 6 and 131) and the law on “Identification and Registration of the Animals and the Livestock Farms” (No. 8702 dated 1.12.2000) the owner is responsible for the animal’s identification and for keeping the identification register. A penalty of 200–350 Euros is applied to the farmer who doesn’t use ear tags for her/his animals.

Only about 60 percent of the interviewed farmers state that they always use ear tags for the identification of their animals, while about 1/3 state that they never or rarely use the ear tags (Table 8).

Table 8

Answer to the question: “do you use ear tags for livestock identification”

Answer	Frequency	Percent
1 Always	86	59.7
2 Often	10	6.9
3 Rarely	21	14.6
4 Never	27	18.8
Total	144	100.0

Source: Field survey

Conclusions

Despite recent attempts to raise awareness of livestock farmers to increase food safety and animal welfare, it still

appears that most farmers do lack information or awareness on these issues. About 87 percent of the respondents state that they have no cooling tank for storing the milk, which is a prerequisite for attaining milk safety and quality standards. Most farmers do not know which institutions are in charge of food safety, animal health, or stable standards control. Although most farmers state that they have a farm livestock books/registers, they are not aware of the institution responsible for controlling them.

A major key to raising animal agricultural production to a sustainable level is building an Agricultural Education for farmers (Gorden, 2014). However, the 2014 Progress Report of the European Commission on Albania (EC, 2014) notes that there has been little progress in the area of food safety and veterinary policy. Risk assessment capacity has not yet been established and systematic inspection plans have not yet been adopted.

There is a need to koordinate actions between extension and veterinary services. This is needed to develop institutional coordination and inter-organizational communication; keys to providing useful information and effective support to farmers; those farmers needed for implementation of the NMS and GAPs. The lack of such basic information makes it more difficult for farmers to understand the role and importance of NMS and GAPs. There is a critical role for veterinary and extension services in explaining standards to farmers and helping them meet those obligations and requirements as found in Albanian food law. Otherwise small scale farms will face difficulties in selling their dairy products as they fail to meet market and statutory hygienic standards. Paralel to raising the awareness, there should be scaled up financial support towards investments that enable improvement of safety standards at farm level.

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