PEST analyses of milk and dairy sub-sector in the Republic of North Macedonia

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Abstract

The European Union (EU) establishes common rules for managing agricultural markets, standards for marketing agricultural products and for trade with third countries and these rules are outlined in the so-called Single Common Market Organisation (CMO) Regulation. Republic of North Macedonia, as an aspirant country is committed to gradual alignment of the national regulations with EU CMO policies and commodity regimes. In this sense, the priority for the coming period shall be a full implementation adherence of the legal provisions to achieve minimum quality (and safety) standards by operators with agricultural products. A significant improvement in the quality and marketing of agricultural products is a paramount issue for particular sub-sectors, such as milk and dairy.

Milk and dairy sector in the Republic of North Macedonia operates in a dynamic environment where it is influenced by-collective social trends, consumer spending behaviour, increasing environmental activism among consumers, regulatory framework, technological changes, increasing regulatory framework for environmental factors, government decisions, and ever evolving legal system.

This paper presents PEST analysis of the internal and external factors that impact the situations in the Macedonian milk and dairy sub-sector, with regard to the introduction and implementation of the Common Market Organisation (CMO) measures.

Key words: Milk and dairy sub-sector; PEST analysis; Common Market Organisation; Republic of North Macedonia

Introduction

The Common Market Organisation (CMO) have been a key component of the Common Agricultural Policy (CAP) since its inception, providing the framework for the market support schemes set up in the various agricultural sectors. It builds on the rules for the common market in goods and services with specific policy tools that help improve the functioning of agricultural markets. The CMO is concerns public intervention in the markets, private storage, production quotas, marketing periods, exceptional measures and aid to specific sectors, marketing and quality standards as well as to facilitate cooperation through producer and inter-branch organisations. Finally, it covers issues related to international and competition rules. The implementation of minimum quality standards which are harmonized with the respective ones in the EU markets is very important for Macedonian agricultural products since will contribute towards improvement of their export competitiveness, while as to the imported products it can support the process of import substitution, as in the case of the milk and dairy sub-sector.

The milk and dairy sub-sector is one of the most important segments of the agro-industrial complex, and its products make up a significant portion of the total food consumption of the average Macedonian family. This sub-sector, at farm

level, was valued at about 10.662 million MKD (or around 173 million EUR) and 9.880 million MKD (or around 161 million EUR) in 2016 and 2017, respectively (SSO, MatStat, 2019). Moreover, milk has the largest share in the total animal output and a significant share in the total agricultural goods output. It contributes to formation of over the half of the animal output's value, and 13.6% of the agricultural goods output's value (SSO, MatStat, 2019).

Milk and dairy products are a regular part of the dietary habits of domestic consumers who prefer domestic products and brands. As a result, despite negative demographics, volume demand for milk and dairy products remains stable. Domestic dairies maintain a clear competitive advantage over international players by offering diverse portfolios of traditional milk and dairy products (www.Euromonitor, 2019). Consumers have also traditionally purchased milk and dairy products directly from farmers, particularly sheep and goat farmers.

In despite these advantages, there are still many constraints across the value chain that hinder the development and progress of the milk and dairy sub-sector, and yet many other will arise in future, with uniting the national market within the EU's common market. All tough in regards to the common market organization, generally speaking, the national legal framework on quality and marketing standards for agricultural products are mostly in place and some legal provisions on market interventions in line with the EU acquis exist, still much needs to be done and implemented. Hence, in regards to the Macedonian milk and dairy sub-sector, prompt and proper introduction and implementation of CMO measures is necessary so to organize and regulate the milk and dairy value chain and to increase its efficiency. Progress is still needed in aligning of commodity-specific schemes and in supporting for public and private storage, producer organizations, and market intervention. Implementation capacity needs to be strengthened.

Agricultural policy in the Republic of North Macedonia is committed to supporting investment projects in agriculture and policy dialogue (through budget support or other assistance schemes) and to enhance development. In order to achieve the overarching goal of sustainable development and in same time develop evidence-based measures in line with EU CMO Regulation and other recommendations for policy interventions in line with EU relevant policies, support to milk and dairy sector requires that political, economic, social and technological dimensions be thoroughly considered, identified and assessed. The concept is that by setting out the many effects of the milk and dairy products value chain, the likelihood of unintended consequences will be reduced. In this sense, we apply PEST (Political, Economic, Social, and Technological) analysis[1] in order to identify political, economic, social and technological factors, which influence the value chain of milk and dairy products in the Republic of North Macedonia in order to obtain relevant and feasible policy recommendations regarding the introduction and implementation of CMO measures in the national milk and dairy sub-sector.

Materials and methods

PEST stands for - Political, Economic, Social and Technological and is valuable tool that policy makers can use to analyze internal and external factors that impact the situations in milk and dairy products value chain. Political factors considered in the analysis refer to the general political situation in the country, political interventions with the potential to disrupt or enhance trading conditions e.g. government statutes, policies, funding or subsidies, support for specific industries, trade agreements, tax rates and fiscal policy. Economic factors are those with the potential to affect profitability of and the prices that

[1] PEST analysis of Macedonian milk and dairy sub-sector was produced within the project "Introduction and implementation of common market organisation measures in the Republic of North Macedonia" that is funded by the EU and started on 4th December 2018. The direct beneficiaries of the project are the Ministry of Agriculture, Forestry and Water Economy (MAFWE), State Agriculture Inspectorate, Agency for Financial Support of Agriculture and Rural Development (AFSARD), and other public institutions. Other stakeholders such as farmers, processors, traders, and their organisations are indirect beneficiaries of the project.

can be charged, such as, economic trends, inflation, exchange rates, seasonality and economic cycles, consumer purchasing power, labor market and available human recourses. Social factors are observed in terms of how they can affect demand for products, consumer attitudes toward health and safety, changes in lifestyle, tastes and preferences, demographics and cultural influences, consumer confidence, shopping habits. Technological factors regard innovation, technological developments or breakthroughs that create opportunities for new products, improved production processes or new ways of transacting business e.g. new materials, new ingredients, new machinery, new packaging solutions, new software and new intermediaries.

In this paper, PEST (Political, Economic, Social, and Technological) is applied to identify political, economic, social and technological factors, which influence the value chain of milk and dairy products in the Republic of North Macedonia, in regards to introduction and implementation of CMO measures.

Applied PEST analysis only aims to identify factors in the macro environment of the milk and dairy subsector. It does not provide solutions or strategies to deal with the individual factors.

Conducted PEST analysis is based on desk research that includes consulting of the latest relevant statistical data (State Statistical Office, MAFWE, Food and Veterinary Agency, etc.), relevant national and international strategic documents, reports, studies etc.

Results and discussion

Development of agricultural sector in North Macedonia is influenced by a number of internal and external factors. Milk and dairy sub-sector, as its integral part, operates in this dynamic environment where it is influenced by-government decisions, regulatory framework, and ever evolving legal system, economic factors, collective social trends, consumer spending behavior, technological changes. PEST analysis can be used as an analysis framework of macro-environmental factors. PEST stands for-Political, Social, Economic and Technological factors that impact the macro environment of the milk and dairy sub-sector that it operates in.

This section presents PEST analysis of the internal and external factors that impact the situations in the Macedonian milk and dairy sub-sector, with regard to the introduction and implementation of the Common Market Organisation (CMO) measures.

Political factors

Republic of North Macedonia has a parliamentary democracy political system, but constant political crisis and early elections over the past decade, maintained generally unstable political situation that significantly slowed down implementation of strategic political decisions for development of the milk and dairy sub-sector. Political ambient also slowed down the realization of the National Program for financial support in agriculture, under which milk producers, among other subsidies, can also receive direct payments. Regarding the internal environment, this has caused frequent change on governing positions within relevant state institutions and in the external environment, very low level of trust and confidence in the state institutions. Other than general political crises, there aren't any particular political disputes or disagreements among coalition parties that could negatively affect introduction and implementation of CMO measures in the Macedonian milk and dairy sub-sector.

In same time, generally speaking, among the milk producers, milk traders and milk processors, as external environment, there is positive attitude for introduction and implementation of CMO measures.

As an internal factor, Macedonian agricultural policy has integrated and systematic approach for addressing milk and dairy production and takes into consideration all levels of the vertically integrated value chain: primary production-milk farmers; milk processing-dairies and milk, and dairy trade-milk buy-out and milk and milk products market. Within the national political documents regarding milk and dairy subsector, strategic approach is built upon the abolition of milk production quota in 2015, structural characteristics of the national milk and dairy

sub-sector and favorable market conjuncture for increased demand for high quality milk over the last few years, and they all contain actions that could have positive influence upon introduction and implementation of CMO measures in North Macedonia.

First of all, the urgent need for consolidation of milk farm size and by that increasing productivity per milking animal, reducing production costs, and significantly improving milk quality and safety is recognized. The goal is to gradually move from milk producers with 1-3 heads towards milk producers with 5–10 heads (and minimum 4 ha. of plows and meadows per farm) and in the long run to have majority of milk producers with an average of 11-20 heads, which should be target category for CMO policy measures. In favor of this political decision goes new Law on agricultural land consolidation (Official gazette, 2018). These actions are expected to strengthen links with processors and further enhance vertical integration of the stakeholders in the value chain, thus hopefully lead to formation of associations of producers, producer organizations and interbranch organizations (AP, PO, IBO). However, here it needs to be point out that in the country there is relevant legislation and support for establishment of cooperatives (Official gazette, 2016) and other form of joint operation, but its execution in the external environment is extremely poor.

Another internal factor that can have positive impact upon implementation of the CMO measures is the adopted approach towards food safety with the Law on Food Safety (Official gazette, 2018) and its related bylaws. This regulative is functional since 2015 and gives minimum framework for improvement and control of the quality and safety of milk and dairy products and should facilitate access to milk markets. This regulative introduces defined objective food safety requirements in terms of permissible number of microorganisms and somatic cells in the raw milk that is primarily responsibility of the milk producers themselves, while the management bodies perform the control function. Thus, it is expected to foster investments in small milk farms for modernization and mechanization of labor-intensive activities in nutrition, milking and extermination of cattle farms. As for the milk processing industry, especially small dairies, they should also make serious investments to meet food safety requirements, or otherwise will have to halt their production. If given appropriate strategic perspective and relevant invectives, both milk farmers and dairy processors should be able to prioritize vertical integration of the value chain in order to meet food safety and quality requirements. Primary risk in this regard is that most of farmers have basic information about the quality standards, but there are a large number of farmers that have never heard of such standards. Information on standards is usually spread among farmers themselves so the main information sources are informal networks. Only in few cases, dairy acts as main source of information, being that has bit better informed about quality standards.

North Macedonia has necessary institutional capacity for carrying out the activities in the field of food safety and animal feed, the legislation in the sector is aligned with the *acquis* but additional efforts are needed in implementing the relevant rules. National Food and Veterinary Agency is an independent body of the Government responsible for implementation, control, supervision and monitoring of veterinary activities in the field of animal health, their well-being, veterinary public health, and control of national reference and authorized laboratories that provide appropriate support for the needs of the Agency. In regards to milk quality and safety, Agency has the mandate to carry on a categorization process of all milk operators (farms and processors) in the country, which should be completed by 2020. The aim is to improve the quality of raw milk from the point of view of total bacteria and somatic cells, in accordance with European legislation. At present, the categorization process is still in progress. Its dynamics is slow since in order to provide for the adjustment of the dominant number of small milk producers, a transitional period has been given to meet the necessary farm hygiene criteria and raw milk criteria. The deadline for achieving European standards for raw milk has been delayed several times, border line of somatic cells and microorganisms was flexible but not fulfilled and un-

fortunately, till this day, there are numerous violations of food safety requirements. According to data from the Agency, there are 7.100 food operators who buy and process milk, including milk farms with a total of 34.000 dairy cattle that need to undergo the categorization process[2].

As external factor in this matter and in regards to the low trust level in state institutions, it needs to be mentioned that currently, analysis on hygienic safety is performed mainly at the State Faculty of Veterinary Medicine but farmers continuously request and independent, national laboratory for milk quality.

Milk producers in North Macedonia, among other support measures, receive direct payment for raw milk. The structure of support to milk produces remains relatively stable. In same time, the operation of the milk quality control system is cornerstone for the payment of milk buy-out and direct payments per liter of milk, since they take place according to the quality classes. In the application documentation for direct payments, farmers are requested to provide Plan for individual improvement of production capacities and Plan for implementation of good farm and hygiene practice. (National program, 2013–2017)

In order to enhance organization of the Macedonian milk market and pursuant to Article 22 from the Low on Agriculture and Rural development, within the MAFWE there is a standing milk subsector group. The group holds regular session and produce valuable analysis and recommendations for development of the sub-sector, but general impassion is that they are not taken into consideration by relevant authorities.

Also, there is National Extension Agency (NEA) that provides advisory services to milk producers regarding application of farm practice that will improve production properties, ensuring proper nutrition and obtaining better quality products. NEA, in close cooperation with other relevant bodies and experts provide trainings, educational seminars and materials regarding milk production and its hygiene and quality properties. However, its activities did not provide significant improvements in the production of raw milk.

Regarding the possibility to introduce national CMO fruit and milk school schemes, there isn't any official political document adopted yet.

As for the collection of agriculture market information and market transparency, the MAFWE has Agriculture Market Information System (AMIS), intended to be functional and well-operable system and to become exclusive source of market data in the country. Unfortunately, regarding milk and dairy products, AMIS is processing and publishing only annual average buy-out prices. Its obscure information on milk and dairy prices prevents its effective use both in policy design of for business decision. Thus, AMIS needs to start collection and publication of wholesale and retail milk and dairy products prices. In fact, gathering and publishing this type of information is prerequisite for national school milk scheme. Namely, there are other sources of information regarding the milk price for milk school scheme but AMIS should be most reliable and its prices should determine in great deal the price of school milk.

Complexity of the milk and dairy sector requires good and synchronized cooperating among many State institutions that in this moment is at very low level. From perspective of CMO measures, the luck of cooperation and coordination, can particular negatively affect introduction and implementation of milk school scheme.

As external factors, other stakeholders such as cooperatives, civil-society and non-government organizations, protest and pressure groups, activist movements, LAGs and other interest groups, still don't play critical role in policy making in milk and dairy sub-sector. MAWFE should improve its collaborate with these organizations so that it can contribute better to the development of the sub-sector, community goals as well as to the

[2] Milk farms are categorized according to the number of somatic cells and the total number of microorganisms in milk, in accordance with the EU regulation on the quality of raw milk. The first category is farms where the number of somatic cells in milk is less than or equal to 400.000 per milliliter of milk, and the total number of microorganisms is up to 100.000. Milk farms with somatic cells and microorganisms above defined number are second or third category. Third-class milk farms are not able to hand over milk for buy-out and further processing. Second-class farms, however, are able to deliver milk for cheese processing if they mature it for at least 60 days.

introduction and implementation of the Common Market Organisation measures.

Economic factors

North Macedonia is a small, landlocked, middle-income country of 2 million people with a GDP of around EUR 11 billion, dependent on trade, with exports and imports in goods and services representing around 133% of GDP in 2018 (Country diagnostic report, 2018). GDP growth averaged 2.2% on an annual basis from 2012 to 2018, and is expected to remain at this level in the medium term. The share of agriculture, forestry and fishing slightly declined between 2012 and 2018 (from 10.5% to 8.4%). When we add agricultural processing industry (including beverages and tobacco), contributions go for an additional 3% of GDP. Regarding other macro-economic indicators, Macedonia has low inflation rate of < 2% on average in the past 10 years, fiscal discipline confirmed by the international financial institutions and a well-functioning coordination between fiscal and monetary policy. Also, net foreign demand contributed positively to growth, as exports jumped 15.6 percent (from 21.7 percent in Q4) and imports went up at a softer 14.4 percent (from 17.5 percent). Meanwhile, both household consumption (2.6 percent from 4.6 percent) and government expenditure (0.1 percent from 4.7 percent) slowed. GDP Annual Growth Rate in Macedonia averaged 2.73 percent from 2001 until 2019, reaching an all-time high of 10.70 percent in the second quarter of 2005 and a record low of -12.70 percent in the third quarter of 2001. (Country diagnostic report, 2018)

National currency, denar is pegged to the euro and its exchange rate remains stable.

The most obvious economic factor with influence on demand of the milk and dairy products in Macedonia is that GDP per capita increased from EUR 3,678.0 in 2012 to EUR 5,169.4 in 2018, and positively affected purchasing power in the economy as a whole.

A factor that will enhance trade connectivity and value chain integration in the milk and dairy sub-sector is a well-developed transport network. Long-term transport policy of the Republic of North Macedonia is defined in the National Transport Strategy 2018–2030, adopted in December 2018. Government is putting significant effort for improvement of the main road and rail corridors but there is a backlog of maintenance on the secondary and tertiary network. At present, country has insufficient transport infrastructure for higher-value added activities in milk and dairy sub-sector. Also, local roads need a prioritized program of maintenance, rehabilitation, and road safety improvements. Interviewed milk producers share same opinion regarding the luck of transport infrastructure, but they also claim luck of infrastructure regarding water and electricity supply.

In regards to the labor market, agriculture remains an important economic activity for Macedonia's economy, accounting 15.7% of employment. However, productivity of the country's agricultural labor force is very low. Calculations' based on data from Eurostat shows that the average Macedonian farmer produces less than a third of the average farmer in the EU–28 (EuroStat, 2019). The changes and the current status of the available labor force in the milk and dairy sub-sector are considered on the bases of available data from the National Labor Force Survey (LSF, 2019), which regards rural labor force. During this period, in rural areas, within the total labor force, relatively larger growth was seen in the share of the employed (41.1%), compared with the unemployed (17.3%). Such changes caused a rise in the employment rate and a fall in the unemployment rate. Apart from these changes, employment in rural areas remained relatively low and unemployment extremely high. The working-age population (15–79)[3] in rural areas is characterized by the predominant participation of individuals with low levels of education. The active agricultural population in the country is characterized by a specific structure owing to the significantly large share of unpaid family workers[4]. Their participation among the total active agricultural population after 2000 has been higher than 45%, which means that almost half the ac-

[3] Age span based on LFS data for the working-age population according to the ILO recommendations.

[4] In the LFS, unpaid family workers are defined as persons who work without pay in a business entity or farm (owned by a family member).

tive farmers do not practice their occupation professionally and are helped by members of their families in the agricultural household.

With respect to the influence of migration on changes in the rural labor market, as well as the existing size and structural characteristics of the labor force and available human resources, emigration abroad has played a crucial role. During the last two decades, it has reached a very high scale. In the absence of precise information, based on numerous domestic and foreign data sources, it can be estimated that 150.000–200.000 persons have left the Republic of North Macedonia. (Janevska and Bojnec, 2011)

The structure in the financial sector in the country is constantly growing and presents 15 banks, of which 11 foreign-controlled banks (6 subsidiaries of foreign banks and 5 owned by non-bank foreign shareholders), 1 state-owned bank, and 3 domestic private banks and 2 saving houses or 17 deposit taking institutions, 16 insurance companies, 1 issuance of corporate bonds on the securities market to 3 investment funds, and 4 pension funds. Country has High Credit Ratings, that is: Standard & Poor's: BB - (stable outlook) an Fitch: BB + (positive).

Agricultural financing remains traditional, with the dominant use of mortgage loans, while other forms and sources of capital are not efficient enough. Various formal financial institutions and support mechanisms are still lacking, including agricultural credit unions, financial nongovernmental organizations, the National Agricultural Guarantee Fund and the like, and this seems to hinder the proper functioning of the demand-supply mechanism in agricultural finance.

In the tax regime, within the Law on personal incomes (Official gazette, 2017) there are tax exemptions for milk producers. Agricultural producers who are physical persons or member of co-operatives are exempted from income taxes on the revenues derived from agricultural activities. Also, a value added tax (VAT) is charged at a standard rate of 18% on the supply and import of goods and services but for milk and dairy production a lower rate of 5% applies to supplies food for livestock and agricultural material and equipment.

Regarding trade agreements and arrangements, North Macedonia is a member of the World Trade Organization (WTO) since 2003 and on 5 October, 2015 has accepted WTO Trade Facilitation Agreement (FTA) that went into effect in February, 2017. According to the trade figures for 2018, North Macedonian's export reaches to 95.2% and 77% of its imports under the abovementioned FTAs. This is especially important for milk and dairy, as perishable products and being that Macedonia is both importer and exporter of milk and dairy products. In this regard, it is also worth to mention that as a Member state, North Macedonia has an opportunity to apply for TFA facilitation assistance.

Republic of North Macedonia is a signatory of four multilateral Free Trade Agreements: SAA-Stabilization and Association Agreement, with the EU member-states; EFTA, with Switzerland, Norway, Iceland and Liechtenstein; CEFTA-between North Macedonia, Albania, Moldova, Serbia, Montenegro, Bosnia and Herzegovina and Kosovo and Regional Convention on Pan-Euro-Mediterranean Preferential Rules of Origin. In addition to the multilateral, North Macedonia has also signed two bilateral Free Trade Agreements: Bilateral Free Trade Agreement with Turkey, and Bilateral Free Trade Agreement with Ukraine. These agreements give North Macedonia duty free access to more than 650 million consumers, but unfortunately, except the CEFTA agreement, they all have negative trade balances for North Macedonia.

General situation on the milk and dairy market in the Republic of North Macedonia is that demand for milk, and dairy products is strong especially in urban areas and the country is a net importer of milk.

The Government of North Macedonia showed an open and welcome attitude towards the foreign direct investments. Milk and dairy sector is qualified as worthwhile to conduct the long-term investment and dairy industry attracted some of the foreign investors. The share of foreign capital is mainly in the larger milk processing plants. In addition, needs to be point out that there have been improvements in certain aspects of the business climate, as illustrated by the change in North

Macedonia's ranking in the World Bank Index from 29 in 2013 to top 10 in 2019 and reached the tenth position in the World Bank "Doing Business" Index, ahead of 26 EU member States.

Social factors

Based on the census in 2002, population in the Republic of North Macedonia is estimated at about 2 million, nearly 25 percent of who live in the capital, Skopje, and about 40 percent live in rural areas. An aging population and a long tradition of emigration pose demographic challenges. Macedonia's population is aging and will continue to do so. The fertility rate has declined from 2.17 in 1991 to only 1.5 in 2016, lower than the average for Europe and Central Asia (1.94). Estimated population growth is near zero (World Development Indicators, 2019). The long and continuing tradition of emigration is a further complication. Because of low birth rates and emigration, the working-age population (15–64 years old) is projected to decrease from 71 percent in 2015 to 60 percent by 2050, with total population falling by 10 percent in the same period (UN population statistics, 2019).

One socio-cultural element that has influence on the milk and dairy product is that they are considered most important food for young children and elderly people, especially regular milk, sour milk and yogurt. Milk and milk products are staple source of protein in diet both in urban as well as rural areas which makes its consumption level high. In this sense, nation vise, in the Republic of North Macedonia milk and dairy product are purchased on daily basis.

Milk and dairy products are integral part from the palate in all social layers of Macedonian population and have long tradition of consumption. Among dairy, white brine cheese is the most preferred product, produced both from sheep's and cow's milk. Macedonian white brine cheese is a product with good nutritional values and is highly valued and demanded by consumers of all generation, who enjoy its complexity and variations in taste and sensory properties (appearance, color, odor, taste and texture). Back in days, typical Macedonian family was used to purchase white brine cheese in a large can, containing 10-20 kilograms, but modern trend, urban life-style and new technologies pushed aside this habit and now white brine cheese is purchased individually-packed, in flexible packaging. Domestic customers also have strong preferences for domestic yellow hard cheese (kashkaval) and sour milk. Regarding other dairy products (yellow cheese, spreadable cheese, butter, fruit yogurts), imported brands are preferred, especially among young and urban people.

The dominant religions in the Republic of North Macedonia are the Orthodox Christians and the Muslims and both consume milk and milk product very frequently. Also, both use milk and dairy products as ingredient in many recopies; especially white brine cheese and cottage cheese have been incorporated in dishes or food items that can be considered as distinctively Macedonian.

However, negative demographic trends in North Macedonia tend to limit the volume growth of drinking milk products as there are fewer regular consumers. On the other hand, health and wellness trends, coupled with local consumers' continuously evolving diets in line with global weight management and wellbeing trends, frequently exclude dairy products, including drinking milk, and rely more on fruit, vegetables and non-animal protein. A move towards vegan lifestyle is not very intensive in North Macedonia, but should be considered since will negatively affect the sales of the dairy products.

One very specific socio-cultural characteristic of Macedonian milk and dairy consumers is their low expectation from marketing standards. There is Law on protection consumers' rights (Official gazette, 2004), but Macedonians tend to have high tolerance in regards to insufficient application of marketing standards, especially in the segment of getting proper and detailed information on product characteristics, ingredients and/or farming process. Prominent example is labels (content declarations on packaged products) on domestic packaged dairy products, where producers do not inform in details what kind of milk has been used. Namely, in some dairy products beside raw milk, processors are adding condensed and/or milk powder, which are not a prob-

lem from the hygiene and safety perspective, but mislead consumers so they are convinced they are purchasing dairy product that has been produced entirely from raw milk. Also, translation of labels on imported packaged dairy product is poor; tend to be generic so importers can use them on several dairy products of same type. In brief, the movement of consumerism in the country is in its very early stage and is far from being significant factor in marketing standards implementation.

Technological factors

It was already mentioned that biggest share in production of raw milk in the Republic of North Macedonia comes from small, low-yielding farms. Only 25% of raw milk is delivered by specialized dairy farms with more than 20 cows. This milk production structure speaks for itself that use of modern milking and cooling equipment is not on sufficient level and gives output with poor hygiene and quality. Down the chain, this cause increase in the cost of milk collecting since it demands cooling equipment (lactofreezers) and thus decrees buyout price of the row milk. It is obvious that this situation becomes vicious cycle since it keeps small milk producers in continuous low productivity and low profitability. Thus, small milk producers have limited capacity to invest in growing and/or purchasing modern milking and cooling equipment and they remain constrained in accessing good market information and new technologies.

At the level of collection of raw milk, presence of technology per se in not a problem, but rather that it is not sufficient to ensure convenient gathering of the whole raw milk produced in the country. This situation leads to lack of proper testing. Namely, testing is very basic and is not individual for a farm/producer but rather a general testing is done for all collected milk.

Insufficient capacity of available milk collecting technology is main reason for collective collection of various types of milk-cow, sheep and goat milk, meaning the milk is mixed. Dawn the chain, this prevents small and medium size dairy processors to orient towards production of competitive higher value products from sheep and goat milk. For such a business orientation dairy processor would have to organize complex logistics, collection and testing that will increase production cost. Thus, at present, majority of small and medium size dairies operate with outdated technology and equipment and have problems introducing and/or maintaining food safety. Due to this, their production is with low marketing standards and medium to low quality. Often, they run the business with very scarce working capital that causes irrational use of installed capacity.

Technology wise, situation is bit better in big (industrial) dairies. Many of the milk processing companies have already launched investments in refrigerating equipment for their milk producing suppliers, as well as in modern technological solution in the processing plants.

Main findings of the conducted PEST analysis of the internal and external factors that impact the situations in the Macedonian milk and dairy subsector, with regard to the introduction and implementation of the Common Market Organisation (CMO) measures, presented in the four quadrants PEST analysis template are as follows:

PEST Analysis

Situation being analyzed: "Introduction and implementation of Common Market Organization Measures in milk and dairy sub-sector in the Republic of North Macedonia" (on next page).

General founding from the conducted PEST analysis in regards to introduction and implementation of CMO measures in the Macedonia milk and dairy sub-sector is that particularly attention should be devoted to intensifying the development of primary production, improving the quality of raw milk, as well as adapting the chain actors to the market reality chain and recognizing the need for stronger mutual organization and connection. In this sense, main goal of policy actions must be better inclusion of risk-averse smallholders who fall short of direct market viability, and to safeguard their household incomes, appropriate risk-minimizing strategies should be defined for these target groups (eg. saving and other forms of asset accumulation, insurance schemes, state employment or sales guarantees, different forms of con-

Political	**Economic**
• Political stability • Integrated and supportive sub-sector policy • Food quality and safety regulation • Milk sub-sector group • Low market transparency and reliable data source • Low level of synchronized cooperation among state institutions • Low involvement of other stakeholders • Growth of global milk production and dairy trade, but slower growth rate • Brexit uncertainty	• Middle-income and modest economic growth • Agriculture is important sector in the economy • Stable inflation rate and exchange rate • Modest positive trend of GDP per capita • Poor execution of Transport policy in secondary and tertiary network • Unfavourable labour market • Stable financial sector with potential for crediting • Tax exemptions • Trade liberalization • Net importer of milk and dairy
Social	**Technological**
• Positive attitude of domestic consumers • Stabile demand for traditional milk and dairy products • Negative demographic trends • Orientation toward high value products • Low expectations from marketing standards	• Missing or outdated milking and cooling equipment in raw milk production • Insufficient collecting technology • Some small and medium dairies have an outdated processing equipment • Majority of production and processing technologies are not specialized, advanced and innovative. • Only big dairies have modern, and somewhat innovative technology

tract farming, etc.) and corresponding promotion activities carried out. The exchange of information about successful packages of support activities, the development of new approaches, and the further development and piloting of corresponding activities should be highly prioritized in order to improve the integration of these target groups into value chains.

In light of the diverse challenges faced by Macedonian milk and dairy sub-sector, the portfolio of policy activities should continue to be broadly framed in future. The combination and coordination of different approaches and development cooperation organizations, e. g. within joint programs, should be adopted. Since financing and infrastructure are of such high relevance to the effectiveness of Macedonian milk and dairy value-chain, particular attention should be paid at this juncture to the closer interlinking of financial cooperation and technical cooperation in value-chain projects within the scope of joint programs.

Also, an appropriately adapted mix of organizations and institutions (lead firms, state advisory institutions, and organizations of the value chain actors) should be enabled or supported to make advisory and financial services and agricultural inputs available to the target groups. In this connection, extra attention should be devoted to the establishment and ongoing development of contract-farming systems.

National agricultural policy should promote the development of innovative financial services, e. g. by means of contract-farming systems, refinancing mechanisms, matching funds, or microfinance instruments. In this regard, especially in-

novative approaches that specifically address the relationships between the actors on the micro and meso levels should be piloted in selected projects and programs.

Also, state support will need to have the flexibility to target support at specific challenges such as small size milk producers. Possible measures available here include support for investments in physical assets, payments to areas facing natural constraints, income stabilization tools, advisory services, incentives for innovation.

Having said general support to the value chain, to support establishment of producer organizations (PO), associations of producer organizations (AP) or interbranch organizations (IBO), national agricultural policy needs to provide practical and organizational support, such as clearer rules on written contracts but more importantly increased bargaining power for producer organizations. In this regard, broad policy support of diverse vertically integrated structures within the scope of systemic development of milk and dairy value-chain, will give sound basis for sustainable development of PO, AP, IBO. In order to ensure the sustainability of milk and dairy value-chain in future, support should-whenever possible-build on structures that are already in place. As far as possible, policy decisions and actions for development of cooperation for vertical integration should refrain both from initiating new and taking charge of certain functions in existing vertically integrated structures. To increase the actors' sense of ownership, the structures of vertical integration for the participating actor groups should rapidly achieve tangible improvements, particularly during the start-up phase.

As for the aid schemes, school milk and milk products scheme can play significant role in dairy sector growth, reduce import, improve child nutrition, create future consumers of milk and support dairy producers. Also, school milk can be linked with smallholder dairy development strategy. Apart from ensuring production of raw milk which complies with the specific safety and quality requirements for foods provided in childcare facilities, school canteens and retail outlets on the territory of schools and childcare facilities, involvement of authorities and stakeholders needs to be provided. Survey on children nutrition and adoption of national strategic document are imperatives. The MAFWE, the Ministry of Education and Science, the Ministry of Health, Paying Agency (Agency for financial support in agriculture and rural development, AFSARD) and the National Food and Veterinary Agency needs to get involved in the organization of the milk scheme. Within the MAFWE, AMIS has crucial role since it needs to be the most reliable source for establishing the price per delivery milk and milk product. Thus, it is of immanent importance to straight its capacities to the level of providing reports on average monthly wholesale prices.

Conclusions

General conclusion is that introduction and implementation of CMO measures in milk and dairy sub-sector in the Republic of North Macedonia will require a multipronged approach to address such issues as small size of milk producers, fragmentation of farm land, lack of economies of scale, low use of credits, deficient infrastructure, lack of a market orientation, outdated labor-intensive farming technologies, and the deficiency of labor force. A focus on milk quality and safety requirements will also be essential to improve standards and productivity. Focal point of political actions must be to build and reinforce competitive value chain and meet the challenges of common market organization in the sub-sector.

Current support policies generally pursue the right aims, but most of them could be fine-tuned to have much more effect in inducing change, rather than subsidising farmers to continue the status quo.

Based on the conducted PEST analysis of Macedonian milk and dairy sub-sector, in regards to introduction and implementation of CMO measures, the actions suggested to be taken, can be grouped in the following several areas presented below:

• **Enforcement of the system for monitoring of minimum quality standards.** The improvement of milk quality and milk safety is a process that should include a set of complementary measures, most of them already defined in the poli-

cy documents. From the marketing point of view, the enforcement of minimum quality standards in the milk sector is of utmost importance in the upcoming period. Due to the fact that establishment of the system for regular quality control and milk safety is blocked in its institutional phase, meaning legislation, procedures and definition of the roles of the involved parties, process requires technical and other support in the implementation. Beside the institutional component, the activities should also include training for the cattle producers on hygiene breeding practices and other skills with an impact on the quality, like nutrition and investments in post-milking treatment at the agricultural holdings. The actions should be organized in cooperation with the dairies and combined with efforts to establish longer-term contractual relations that include co-investment in equipment and herds. The help for the implementation of farmers' laboratories has to be foreseen.

• **Strengthening of organization capacity of associations of dairies.** Strengthening of the organizational capacity of milk processing industry seems important for better positioning of the national milk production at the domestic market against the imported products. The association should become able to plan and implement commonly agreed action for important issues, like improving the milk quality, need to diversify the production assortments, strengthening of the vertical links with farmers etc. The project should support development of the programme of activities and implement some of them during the project lifetime. The horizontal organization of milk processors shall be assessed in regards to possibility to operate the milk production information system that should monitor the situation on the market and recommend actions for its improvement.

• **Institutional support in enforcement of milk minimum quality standards.** An appropriate support scheme for achievement of minimum quality standards on the farm level should be developed for implementation of the recommended investments by the FVA inspections made during the categorizations of the farms. The project-based support that integrates all required investments for farm modernization as to the plan, in parallel should be aimed to increasing the size of the farms.

Finally, policy planers should be advised on potential development of variety of new measures in accordance with the EU CMO concept that are adoptable in the national policy context. They should also be aware that predominant target group to be assist with introduction and implementation of CMO measures are small milk producers and small dairies which do not constitute a homogenous group. In fact, in the Republic of North Macedonia they vary in terms of their access to material, social and cultural resources and hence in their opportunities to be included in the milk and dairy value chain. It is therefore necessary all policy actions to differentiate between them further.

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