Nutritional challenges and agricultural strategies in national nutrition policies of Central and Eastern European countries

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Abstract  
Central and Eastern European countries experience significant socio-economic changes and are characterized by nutrition transition. They deal with persistent undernutrition and micronutrient deficiencies while being confronted with emerging consequences of overnutrition and diet related non-communicable diseases. Effective solutions will require investment in contextual drivers of diet, in particular in agriculture.

This study examines how national nutrition policies of Central and Eastern European countries published between 2004-2011, articulate agricultural measures to address nutritional challenges: undernutrition, micronutrient deficiencies, food safety and overnutrition using structured content analysis. Only 5 (24%) national documents (Bulgaria, Georgia, Moldova, Poland and Slovenia) out of 21 countries officially belonging to Central and Eastern European region were retrieved that met research criteria. Agricultural measures to tackle food security in vulnerable population groups mainly propose mechanisms to support agricultural production in rural settings and facilitated access (e.g. through subsidies) of healthy foods (e.g. fruits and vegetables) for vulnerable groups. Other strategies entailed education of producers and consumers about healthy food consumption, fortification of staples with micronutrients and establishment of food safety systems throughout whole food chain.

Strategies aimed at the agricultural sector for better diets in CEE region are interesting examples to generate lessons learned and provide information to further integrate agriculture and nutrition research for countries in nutrition transition.

Key words: agriculture, nutrition, micronutrient deficiencies, food safety

Introduction

Central and Eastern European countries have been experiencing vast political, economical and social changes in the last 10 years. They are however, still coping with persisting problems such as social inequalities, poverty and causally food insecurity. In many of these countries more than half of the population lives in rural areas and is poorer than urban citizens. They are predominantly engaged in agricultural activities as a mean of employment and income. Even though basic infrastructure services such as roads, electricity, clean water, education and health
services are available, as a legacy from socialist system, there is a lack of integrated strategies to use the assets present to address numerous social problems (Mizik, 2010).

With regard to this, the nutrition status of the population in the region is one of the factors highly affected. Malnutrition is persistent amongst vulnerable groups- poor, mothers, children and elderly, and it is mainly characterized by nutritional deficiencies in iron, zinc or overall malnutrition due to poor diets (Rokx et al., 2002). Moreover, other nutritional problems such as overnutrition and obesity are prevalent and drive the development of diet related non-communicable diseases epidemic in the region. An estimated 80% of the adults are obese (Knai et al., 2007). The epidemic of non-communicable diseases contributes further to an estimated 77% of the total loss in DALYs (%) and affects mainly poor and people in rural communities (Pomerleau et al., 2002).

Finally, food safety monitoring, that concerns quality of food available to the people and access to the foreign markets and international competitiveness, especially in EU, is poorly developed in the legal frameworks of countries in the region. In countries which joined the EU after 2004, the application for EU membership acted as a catalyst for adjustment of legal frameworks and implementation of food safety standards and guidelines. Similarly candidates countries for EU accession, such as Croatia, are passing through a similar adaptation process, while some other countries (Armenia, Georgia) that are coping with the poverty, experiencing difficulties in transition processes (Mizik, 2010).

The reality is that agriculture and nutrition (and health) are dealt with in separate contexts. A comprehensive approach at national level is seldom adopted. Food and nutrition which act as dominant cause of contemporary health conditions in various forms (malnutrition, deficiencies, overnutrition, food poisoning) is considered as an isolated issue under Ministries of Health or other, such as agriculture and social affairs. On the other side, the development in agriculture is usually observed through an increase in production, price trends, access to the markets and other economical indicators. Agricultural policies and strategies are designed under the supervision of Ministries of Agriculture and Economy which influence the trend of their development. In this context, nutrition remains idle in political and institutional frameworks (Fan & Brezska, 2012). So far, nutrition has not been widely used as an objective in development strategies considering both agriculture and health. There is a need for evidence based policy making and to formulate strategies for concerted action in nutrition. These strategies have to take into account activities such as the promotion of productivity growth of more nutritious foods; increase in demands for and access to nutritious foods along the entire food chain through consumer knowledge and awareness campaigns; breeding more nutritious varieties of staples that are consumed by the poor through the use of e.g. biofortification practices, or even the introduction of taxes on unhealthy foods and complementary subsidies on nutrient-rich foods.

Altogether, the nature of agricultural policies – essentially mostly perceived in terms of food production - equally needs to provide people with adequate quality and complete nutrition and provides livelihoods for the rural poor. The development of agricultural policies consequently has a significant public health impact. Despite this, however, broad societal and public health consequences of agricultural policies are usually neglected (Hoddinott J., 2012). To give consideration to such comprehensive approach, policy makers have to be informed on different aspects of implementation of nutrition strategies in public policies through information that includes data on nutritional patterns, micronutrient intake data etc. (Fan & Brezska, 2012).
This study analyses the nutritional policies of Central and Eastern Europe with the perspective of reviewing agriculture initiatives that are relevant for nutrition. It will examine how policies design agricultural strategies to address issues of undernutrition, overnutrition, nutrient deficiencies and food safety. It aspires to give an idea on current situation in terms of nutrition policy development in CEE countries and to point out alternative ways of thinking about plausible and clearly necessary segments in building new effective food and nutrition policies.

Methods and materials

Nutrition and diet related policy documents were retrieved by study group from Faculty of Bioscience Engineering, Gent University, using following inclusion criteria (i) officially approved policy of a WHO member state; (ii) publicly available document, published between 2004-2011 and (iii) written in English. Selection of the documents for this study was done from this collection, where we took all available documents for the countries that officially belong to Central and Eastern Europe group. The entire data set of policy documents was used for other research analysis by the study group, as well.

Information regarding the agricultural strategies was extracted manually from the text following a structured content analysis approach. In this analysis process, key issues regarding agricultural strategies were: food security, micronutrient deficiencies, food safety and overnutrition. The contextual of the policy documents was extracted for the various pieces of coded text to allow further consideration, interpretation and comparison. The extracted information was summarised and is presented in tables to facilitate comparisons and to allow a comprehensive evaluation.

Results and discussion

The Central and Eastern European sub-region consist of 21 countries out of which only 5 (24%) national documents (Bulgaria, Georgia, Moldova, Poland and Slovenia) were retained for review as they were the only available nutrition related policies officially approved, satisfying research criteria. Table 1 lists the documents used for analysis in the study.

Prior to presenting concrete results, it is key to point out that, even though a total number of endorsed policies are small, other countries in the region have been active in development of various strategies to address nutritional needs of their people and are at different stages of nutrition/food policy development. These activities could be seen through formation of capacity development network of regional professionals in CEE in 2006 suggested by UNU/SCN. This network have indentified major common nutritional challenges of all the countries in the region, which included: irregular meal patterns, low consumption of fruits and vegetables, milk and fish, low intake of micronutrients and high intake of fat, sugar and salt (Pavlovic et al., 2009).

Countries such as Serbia, Hungary, Romania, Croatia, Albania etc. are facing various challenges in formulating policies. These problems are multifactorial e.g. limited interaction between ministries, governmental bodies and overall rigid political system which do not recognise the need for the policy, lack of coordinated nutritional activities i.e. monitoring systems. Furthermore, higher education and training on nutrition, which are prerequisites for the establishment of nutrition policy, are inadequate both for medical and agriculture professionals. Tools for building policies- food based dietary guidelines, recommended dietary allowances, food databases, are also randomly developed in those countries (Pavlovic et al., 2009).
The next sections provides an overview of agricultural measure to address food security, micronutrient deficiencies, promotion of healthy foods and food safety in analysed CEE policies. Table 2 provides an overview of the main strategies for nutrition and agriculture in the analysed policies.

**Agricultural measures to address food security in vulnerable population**

Strategies to support agricultural productivity in ensuring food security for vulnerable groups - children, elderly, poor and disabled were found in 4 policies. The Bulgarian, Georgian and Moldavian policy measures mainly propose the development of mechanisms to support agricultural production in rural settings and facilitated access (e.g. through subsidies) of healthy foods (e.g. fruits and vegetables or fish) to vulnerable groups. Beside this, there are programs such as free milk and fruits for school children in Bulgaria and healthy foods in schools in Georgia or self-supply anti-crisis programs in Slovenia.

**Measure to address problems of micronutrient deficiencies**

The Bulgarian and Moldavian policies propose a fortification of staple foods with iron, folic acid and iodine. Slovenia encourages production of food for those with special nutritional needs, while Georgia asks for agricultural response to micronutrient deficiencies. None of the countries considers methods for bio-fortification as possible solution to address micronutrient deficiencies widely. The issue of fortification of staples in many of CEE countries is at the control of the state and is not regulated by the law i.e. law only regulates salt iodisation. The domestic food industry is commonly believed to lack technological and other knowledge and incentives to embark into these processes.

**Promotion of food with health- benefit production, processing, trade and distribution**

Strategies to promote the production of healthy foods, facilitated access to the markets and education of producers and consumers were found in 4 policies. They are comprised of (i) Proposed activities to rise and approve awareness on healthy food consumption (in Bulgaria, Slovenia and Moldova), (ii) Giving incentives for healthy food production such as: subsidies for production (Bulgaria), facilitation of access to the markets, strengthening of local production (Slovenia), cooperation with food operators for development of pro-health food products (Poland).

There are few successful examples from other CEE countries (i.e. Poland, Czech Republic and Romania) which set certain taxes on fat (butter and snacks) and sugar (sweets, ice creams, confectionary) that had a huge impact on reduction of consumption of these commodities. Fruit and vegetables prices reduction at retailers has shown to be effective pricing strategy, as well (EHN, 2011).

However, agricultural policies in these countries have been tailored to produce cheap energy food supply with low nutritional profiles – low priced animal products with undesired fats and highly refined cereals, which were to satisfy basic needs of public and keep social ease. However, these policies have dire health consequences, reflected in rampant overweight, obesity and non-communicable diet-related diseases (WHO, 1998).

**Food safety system establishment**

The Bulgarian and Slovenian policies propose an integrative approach to establish a food safety monitoring system. This entails education and training on implementation of HACCP principles,
assessment of risks, recommendations, monitoring, research (Bulgaria) and enforcing of inspectorial control system (Slovenia). Moldova however, encourages food producers to implement HACCP systems in their processes. This situation clearly shows comparison in food safety system establishment between EU members and those countries which are still striving toward EU. Since this process entails financial, organizational and other resources such as well as trained staff, it is obvious why these processes are in delay. It is also important to mention that, while Western Balkan countries are building EU compatible regulatory systems, former soviet countries - Commonwealth of Independent States, still use principles of Russian GOST system, which is now administered by the Euro-Asian Council for Standardization, Metrology, and Certification, a standards organization chartered by the Commonwealth of Independent States which are not compliant to the WTO standards and are not recognized by most of the world’s trading countries (Mizik, 2010).

Other strategies

There are some other aspects projected in a few policies. For example, the policy of Georgia emphasizes the importance of development of monitoring systems for food availability and food consumption. Capacity Development Network for CEE countries recognizes the need for these systems and it can be expected that it will come up with their own databases and information systems which will help them to develop future policies (Pavlovic et al., 2009).

The Slovenian policy stimulates development of local sustainable supply systems and economies and rural development and points out importance of consumer needs' satisfaction. It is the only policy that recognizes the importance of preservation of local sustainable supply systems. While other countries have even more natural resources to do so, their traditional diets and commodities are being replaced with intensively imported foods e.g. tropical fruits in continental countries or raising high-cropping easy-storing varieties of fruits and vegetables with lower content of vitamins or breeding of farm poultry with higher percent of fat and farm fish with lesser percent of poly-unsaturated fatty acids (EHN, 2011).

Conclusion

Strategies aimed at the agricultural sector for better diets in CEE countries' nutritional policies all together imply mechanisms such as production promoting mechanisms, nutrition education on different levels, market accessibility and regulation of food safety systems. The low number of available policies is an important indicator of the state at which countries of the region are in term of their capacity and resources to formulate and then take over proposed actions. Specific setting of the countries, as well as historical background and development have to be taken into consideration.

There are prerequisite measures that are of crucial importance for further development – raising awareness of the important link between agriculture and nutrition among professionals from various fields- agriculture, nutrition, food technology, politics, economics, market, civil society etc. and bringing them together around building of capacity to tailor appropriate policy which will steer agricultural activities towards meeting nutritional needs for all.

Acknowledgements
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References:


<p>| Table 1: List of official national documents used for analysis |
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<table>
<thead>
<tr>
<th>Country</th>
<th>Title</th>
<th>Publisher</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>Draft Food and Nutrition Action Plan</td>
<td>Council of Ministries</td>
<td>2005-2010</td>
</tr>
<tr>
<td>Georgia</td>
<td>“Food security, healthy eating and physical activity” national policy</td>
<td>Public Health Department of Georgia (Ministry of Labour, Health and Social Affairs)</td>
<td>2006-2010</td>
</tr>
<tr>
<td>Slovenia</td>
<td>The national programme of food and nutrition policy</td>
<td>Official gazette of Republic of Slovenia</td>
<td>2005-2010</td>
</tr>
<tr>
<td>Moldova</td>
<td>National Health Policy- Republic of Moldova</td>
<td>Ministry of Health</td>
<td>2007-2021</td>
</tr>
<tr>
<td>Poland</td>
<td>National prevention programme of overweight, obesity and non-communicable disease through diet and physical activity improvement</td>
<td>Ministry of Health, National Food and Nutrition Institute</td>
<td>2007-2016</td>
</tr>
<tr>
<td>Strategy</td>
<td>Bulgaria</td>
<td>Georgia</td>
<td>Slovenia</td>
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<tr>
<td>- Productivity to ensure food security for vulnerable groups: children, elderly, disadvantaged</td>
<td>- Support agriculture production and facilitate access of foods to vulnerable</td>
<td>- Support projects to facilitate access of poor to healthy foods</td>
<td>- Strengthening of self supply – anti-crisis</td>
</tr>
<tr>
<td>- Problems of micronutrient deficiencies</td>
<td>- Fortification of staples with Fe, folic a.</td>
<td>- Agriculture response to Micronutrient deficiencies</td>
<td>- Production of food for those with special needs</td>
</tr>
<tr>
<td>- Fortification of food with health-benefit production, processing, trade, distribution</td>
<td>- Awareness of food operators on healthy diet principles</td>
<td>-Facilitate access of healthy food to markets and institutions</td>
<td>- Raise awareness and promote healthy food to food operators and consumers</td>
</tr>
<tr>
<td>- Safety system establishment-GAP, GMP, GHP</td>
<td>- Establishment of Food Safety system: Monitoring, Control Training, Research</td>
<td>- Encourage and educate food operators for HACCP implementation</td>
<td>Monitor and</td>
</tr>
</tbody>
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Table 2.: Overview of main agricultural and strategies in analysed policies