Food and Agriculture Organization of the United Nations

Food security and nutrition policy dialogues in Europe, the Caucasus and Central Asia 2016–2019

A retrospective

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Labi Daro, Tajikistan - Gardener picking cucumbers in the greenhouse of the elementary school no 10.

Contents

About this publication

This publication is a compendium of the main outcomes of the online stakeholder dialogue organized by the project "Developing Capacity for Strengthening Food Security and Nutrition in Selected Countries in the Caucasus and Central Asia", funded by the Russian Federation, in collaboration with the Global Forum on Food Security and Nutrition (FSN Forum). The Agricultural Development Economics Division of FAO leads both activities.

The publication presents an overview of the multiple topics that were discussed from 2017 onwards and provides the reader with a brief introduction to the main ideas and conclusions that emerged during these online consultations.

In addition, this publication includes a series of short case studies that highlight good practices and lessons learned from school food and nutrition programmes and from the implementation of food security and nutrition policies in Europe, the Caucasus and Central Asia.

The time and effort devoted by the participants to the online consultations, calls and webinars is deeply appreciated. Their input constitutes an invaluable addition to this body of knowledge as well as to the work of the Russian-funded project.

Individual contributions are acknowledged by name in the summary report of each online activity, which can be accessed through the links provided in each section.

As the content of this publication is based on the comments and input shared by the participants, it does not necessary reflect the position of FAO or of any of the organizations mentioned.

Developing Capacity for Strengthening Food Security and Nutrition in Selected Countries of the Caucasus and Central Asia

The countries of Europe, the Caucasus and Central Asia (ECA) are strongly committed to promoting food security and nutrition among their populations. Still, they continue to face various interconnected challenges that have contributed to rural poverty and malnutrition, especially among children. In light of this, the Food and Agriculture Organization of the United Nations (FAO), with support from the Russian Federation, provides assistance to three countries in the region — Armenia, Kyrgyzstan and Tajikistan — to address these issues and to meet the internationally agreed Sustainable Development Goals (SDGs) through innovative approaches adapted to the local and regional context.

One of these approaches, the Russian-funded project "Developing Capacity for Strengthening Food Security and Nutrition in Selected Countries of the Caucasus and Central Asia", implements the concept of capacity development in a far-reaching and comprehensive manner, by helping governments, institutions, business and communities to formulate, plan and implement programmes aimed at promoting nutrition and poverty reduction and transforming their national food systems. The project focuses on three thematic areas: school food and nutrition, social protection and migration.

A key developmental objective of the project is to lay the groundwork for the scaling up of successful initiatives with an integrated approach to development. Specifically, the project is carrying out six pilots that aim to operationalize the linkages between agriculture, nutrition and social protection. The results of these pilots will feed into key policy, legislative and programming processes at the country, regional and global level.

Coordination and advocacy form another major component of the project. To encourage political commitment and the formulation of comprehensive development policies, the project promotes policy dialogue and increased interministerial support and collaboration with other partners. Furthermore, it provides guidance and know-how for improved policies, and aims to identify knowledge gaps and opportunities for cross-sectoral action. In this way it helps build the capacities of countries to scale up or adjust their efforts towards eventually achieving the SDGs.

The Global Forum on Food Security and Nutrition (FSN Forum) approach

The Global Forum on Food Security and Nutrition (FSN Forum) embodies FAO's role of a neutral knowledge broker by engaging a broad spectrum of citizens, experts, governments, non-governmental and private entities and other stakeholders in policy dialogue and knowledge sharing.

Active since 2007, and today counting over 20 000 registered experts, practitioners and stakeholders from 190 countries, the FSN Forum is considered the foremost online platform for people and institutions to share knowledge and support policymaking in the field of food security and nutrition, in keeping with the 2030 Agenda for Sustainable Development and the SDGs.

By offering facilitated online discussions and building communities of experts for thematic and regional consultation processes, the FSN Forum plays an important role in creating synergies, ensuring greater transparency of policy processes, and encouraging inclusive multistakeholder dialogue on food security and nutrition.

Over the years, the FSN Forum online discussions have played an important role in strengthening and democratizing policy dialogue in line with the United Nations (UN) move towards more inclusive decision-making processes within the development community.

The FSN Forum has helped drive the food security and nutrition dialogue in innovative directions, giving participants the opportunity to raise new questions and issues and lend their voices to high-level discussions which otherwise might not be accessible to them. The mutual learning and networking supported by the Forum's activities help increase capacities towards the realization of the SDGs.

To maximize its impact at the regional and country level, the FSN Forum also facilitated a regional online platform targeted at the audience of the ECA region (FSN Forum in ECA).

This regional FSN Forum was fully integrated into the overall activities of the global FSN Forum, and provided a channel for stakeholders in English and Russian to contribute to existing initiatives and decision-making processes, and to voice their ideas and concerns on food security and nutrition across the region. In doing this, both FAO's regional priorities and the local cultural and linguistic context were taken into account.

A productive partnership

The collaboration between the Russian-funded project and the FSN Forum served to extend the involvement of key stakeholders from the three focus countries and the greater region in policy dialogue on how to strengthen food security and nutrition, while also linking them to experts from different disciplines all around the world. Further, the online consultations were organized at the global, regional and country level to foster linkages between the project activities across these three levels.

The joint activities also improved the project's outreach and gave stakeholders and practitioners from other parts of the world the opportunity to share their experiences and to engage in a fruitful learning dialogue with experts from the project's focus countries. The consultations involved relevant stakeholders from a diversity of sectors, resulting in a strong representation of experts from academic and research institutions, non-governmental organizations (NGOs), civil society, the private sector, UN agencies, public sector institutions and intergovernmental organizations.

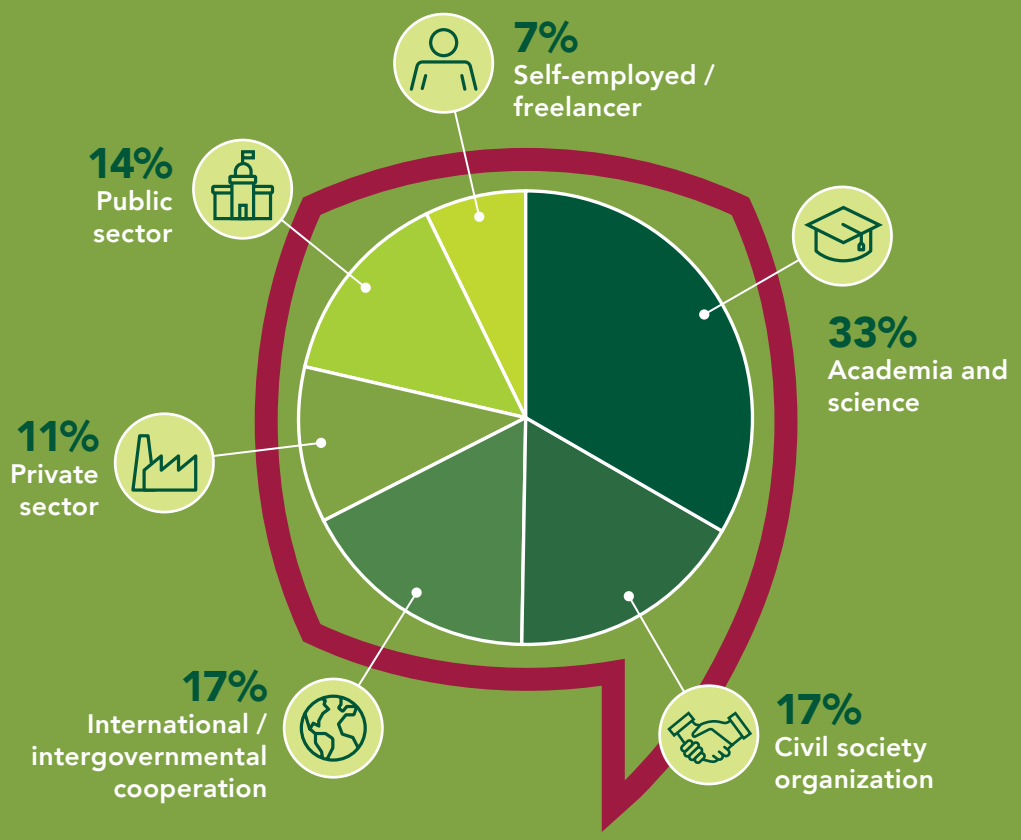
By covering the three thematic areas of the project, the online consultations helped to clarify the linkages between social protection, nutrition and agriculture, and to increase awareness of the need for concerted initiatives and coherent food security and nutrition policies.

Activities and results in figures

- Website available in Russian and English
- 1 100 registered members
- 4 200 experts on the mailing list
- 15 000 hits on FSN Forum pages with content related to the Russian-funded project
- 35 percent of visits coming from the following countries: Armenia (8 percent), Kyrgyzstan (40 percent), Tajikistan (26 percent) and Russian Federation (26 percent)
- 500 comments and replies

- 60 messages sent to mailing list
- Summary reports published in Russian and English
- 4 country-level consultations (Armenia, Kyrgyzstan, Tajikistan)
- 3 regional-level consultations
- 1 call for good practices
- 1 survey
- Participation in 4 global-level consultations and calls
- 5 webinars

Affiliation of FSN Forum in ECA members



Ararat Region, Armenia - The greenhouse of the FAO beneficiary school, built under a food security and nutrition project.

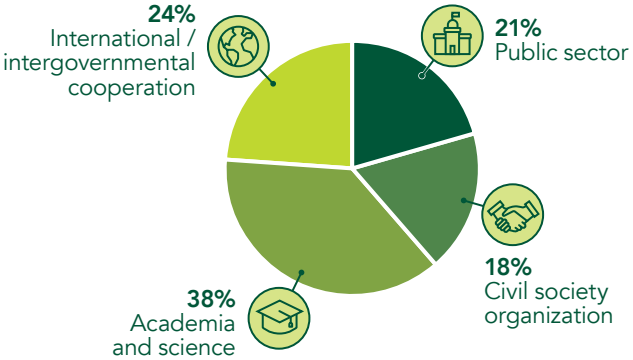
The online consultations

Country level

The three focus countries of the Russian-funded project, Armenia, Kyrgyzstan and Tajikistan, were each the subject of one online consultation.

Each consultation looked into issues of particular relevance for the specific country, with the goal to stimulate transparent and inclusive dialogues at the country level while at the same time opening up the exchange to the experiences and knowledge from other countries of the region and beyond.

Affiliation of participants



Stronger intersectoral collaboration for improved food security and nutrition in **Armenia**

The Government of Armenia has made substantial efforts to create an institutional structure in which the case for social protection is strongly embedded. An important step in its efforts to provide effective social services has been the establishment of mechanisms for interagency and intersectoral cooperation. However, intersectoral cooperation remains challenging in practice. Recent structural changes in the government, such as the reduction in the number of ministries, present additional challenges to efficient interministerial collaboration and the adoption of multistakeholder approaches — aspects that are necessary for the implementation of social protection measures that benefit the poor and ensure positive nutrition outcomes.

During this online consultation, some of the comments received stressed that indeed, not always all actors that have a stake in a specific policy are engaged in the policymaking process. Furthermore, those who are involved in the process are not necessarily aware of the details of the issue under discussion, or lack the knowledge to contribute professionally to the conversation. A lack of timely intra- or interagency communication may be among the reasons for the fact that participants are not always adequately informed about the discussions taking place or about the topic itself.

Consultation participants stressed the importance of addressing these issues and of strengthening intersectoral collaboration, pointing to the fact that eliminating malnutrition requires the adoption of a sector-wide approach that should at least include the social protection, agriculture, health, education, infrastructure and finance sectors. In this context, participants referred to the National Strategic Review of Food Security and Nutrition in Armenia, conducted by the government and the World Food Programme in 2017, which recognizes the need to ensure programmatic synergies and to adopt a holistic approach to food security and nutrition. To this end, a multistakeholder approach should be adopted that ensures involvement of relevant public and private stakeholders, research institutes, international development organizations and civil society organizations.

Some comments pointed out that establishing effective intersectoral cooperation is not an easy task. It involves the consolidation of resources and significant efforts to improve their cost-effectiveness, which, in turn, requires political will from government agencies and coordination among other organizations involved in the process, both at the national and global level. Participants pointed out that a coordinating body should be established, and that a clear framework through which the policymaking bodies operate should be created. Furthermore, some comments stressed that there is a need to develop mechanisms to hold relevant actors to account for their actions (or lack thereof).

Vardablur, Armenia - FAO beneficiary Ovsanna Papoyan and her family in Vardablur village.

©FAO/Karen Minasyan

The more practical implementation of policies and measures that aim to contribute to better nutrition was discussed as well. Starting from the perspective that a sector-wide approach linked to wider rural development measures is needed, some comments stressed that it is critical to engage local people – more specifically, agricultural producers, local enterprises and input service providers. For instance, if provided with access to information, services and tools for capacity development, groups of local people can work towards realizing the comparative advantage of different geographic areas in the production of specific nutritious foods.

Coupled with public awareness-raising on the importance of proper nutrition, this could contribute to healthier diets and improved market and food system engagement of producers. Lastly, participants pointed to the need to address systemic issues in local governance and to strengthen structures of public administration and service provision. In this context, comments stressed the need to improve local advocacy capacity by strengthening leadership capacity in communities and enabling local people's participation in policymaking, with the overall aim to secure quality public services.

The online consultation webpage can be accessed here:
www.fao.org/fsnforum/activities/discussions/armenia

A new deal for school gardening in **Kyrgyzstan**: developing a framework for a comprehensive policy approach

Kyrgyzstan has shown significant progress over the past decade in reducing undernourishment and stunting. However, micronutrient deficiencies, overweight and obesity have increased in recent years, and non-communicable diseases are on the rise. To protect children from these forms of malnutrition and their consequences, substantial efforts are needed. In light of this, the Kyrgyz Government has recognized the important role school feeding can play in addressing children's nutritional needs.

One way to improve school food and nutrition programmes and to promote healthy diets among children is to further develop school gardening, which allows food to be produced directly for school meals, and income to be generated through the sale of the produce. More than 65 percent of Kyrgyz schools already have a school garden, and almost all rural schools have access to a plot of land, as local government bodies are obliged to allocate these plots.

In this consultation, participants' contributions reflected the idea that school gardening could take on two roles at the same time: a "productive" role, by supplying food for school meals and generating additional income; and an "educational" role, by increasing children's knowledge on sustainable agricultural production and healthy diets.

Furthermore, participants stressed the general pedagogical value of school gardening, given that the activity can help develop children's social and scientific skills through participation in playful educational activities. School gardening could also benefit the broader society by bringing together different groups of local people, with sometimes differing interests, to engage and cooperate.

Some participants pointed out that the implementation of school gardening may be hampered due to the lack of a clear framework. There are many unanswered questions regarding the management of school gardens, their profitability, and how to ensure the food grown is safe. Furthermore, the traditional approach to agriculture is problematic, and the system for transferring scientific agricultural knowledge to those working in the field has proved ineffective. Participants also pointed to a number of legal and institutional issues regarding the implementation and management of school gardens, such as the lack of a clear legal and regulatory framework, especially in relation to children's rights and child labour.

To overcome these challenges it was proposed to encourage political dialogue and commitment with the aim to develop a set of measures and regulatory acts regarding the development and management of school gardening.

Participants also called for the setup of a public system of training and consulting to

Kemin, Kyrgyzstan - Pupils benefit from healthy school meals.

©SIFI/Rustem Ilyasov

focus on developing approaches to school feeding that suit local conditions. Access should be given to necessary resources such as finance, high-quality seeds and fertilizers. The participation of the local community needs to be encouraged as well. Finally, school gardening should be linked to other strategies for family and local food security and the promotion of organic production methods.

The online consultation webpage can be accessed here:
www.fao.org/fsnforum/eca/activities/discussions/kyrgyzstan_school_gardening

The way forward towards coherent policies for food security and nutrition in **Tajikistan**

The launch of the "Programme for Reforming the Agriculture Sector of the Republic of Tajikistan for 2012–2020" has been an important step in addressing Tajikistan's low agricultural production and productivity as well as for improving its food security and nutritional outcomes. However, in order to achieve these goals, coherent policies need to be developed that reflect the multiple dimensions of food security and nutrition issues and the diversity of stakeholders involved.

In this consultation, participants stressed the need to involve multiple stakeholders in policymaking processes related to food security and nutrition but were equally mindful of the risks associated with broad stakeholder inclusion, such as increased decision-making times due to conflicting interests. Furthermore, it was argued that the process should be aided through substantial scientific and legislative support, should involve the media, and should be inclusive of the country's youth who constitute a large and increasing share of the population.

Some participants suggested that UN agencies such as FAO, the United Nations Children's Fund (UNICEF) or the World Health Organization (WHO), working under the guidance of the Ministry of Health or the Ministry of Agriculture, should take the lead in the policymaking process to ensure full involvement of all stakeholders.

Equally, it was also suggested to establish an interdepartmental working group operating at two levels and including representatives from all relevant ministries, the private sector, and UN agencies and other international institutions (in particular, FAO, IFAD, WFP and the World Bank). The first level would be a working council chaired by the Deputy Prime Minister, the second level a working group chaired by the Ministry of Agriculture. The working groups would determine the priority areas for improving food security and develop a strategy and respective indicators. The UN organizations and the World Bank could provide support by establishing a secretariat for coordinating these working groups, monitoring and assessing situations, providing technical advice, and facilitating the exchange of knowledge and experience.

Consultation participants stressed that a good technical understanding of food security, nutrition and agriculture, as well as their interlinkages, is essential for developing coherent and mutually reinforcing food security and nutrition policies. Specialists with expertise covering all stages of the value chain need to be involved and context-specific knowledge need to be made available, especially concerning the needs of farmers and consumers.

Those leading the policymaking process must also be equipped with adequate coordination skills. Multistakeholder approaches thus require a clear understanding of the roles and responsibilities of the different actors throughout the process, and leaders should have the required negotiation skills to reach a consensus in the context of a technical debate, while integrating social, economic and ecological aspects.

Dusti, Tajikistan - Rural woman cooks a traditional noodle soup, called laghmon on open fire.

©FAO/Nozim Kalandarov

Some concrete measures suggested by participants to facilitate the development of healthy food systems were the improvement of rural infrastructure; the promotion of access to land; boosting women's empowerment; enhancement of access to markets, inputs, technology, information and knowledge; and the definition of standards for healthy food.

Furthermore, to make agricultural value chains more nutrition-sensitive, it was suggested to review food industry technologies, and to promote pro-nutrition behaviour change among farmers to help them introduce local varieties and adopt biofortification methods.

The online consultation webpage can be accessed here:
www.fao.org/fsnforum/eca/activities/discussions/tajikistan

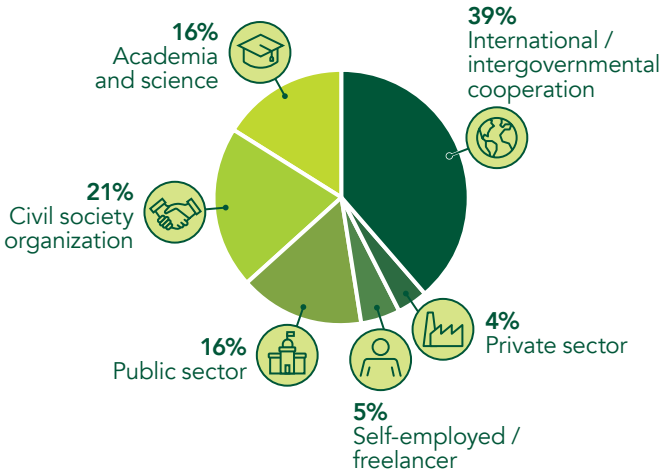
Bagysh, Kyrgyzstan - FAO Beneficiary, Apysheva Elmira works in her greenhouse in the village of Bagysh, some 500 km from Bishkek.

The online consultations

Regional level

The regional online consultations focused not only on the three main thematic areas (school food and nutrition, social protection and migration) of the Russian-funded project, but also covered issues that are particularly relevant to the region as a whole. These consultations provided an opportunity to extend the dialogue to other countries of the region and beyond, raising awareness on the project's activities and helping facilitate the sharing of lessons learned and good practices.

Affiliation of participants



Strengthening the linkages between agriculture and social protection

Countries increasingly recognize that social protection measures are needed to provide relief to people living in poverty, and to prevent others from falling into poverty when a crisis strikes. However, evidence has shown that social protection programmes can sustainably bring people out of poverty only when integrated into broader livelihood promotion and rural development strategies. Specifically, promoting coherence between social protection, food security and nutrition, and agricultural interventions is needed to maximize and sustain impacts of social protection over time. In this online consultation, participants explored this nexus and shared their experiences and views with regard to developing and implementing social protection schemes that are coherent with agricultural policies in the ECA region.

Considering the broad context in which social protection programmes are implemented, participants highlighted the common characteristics of the region's agricultural and rural environment that would warrant particular attention in developing these programmes. For instance, inadequate infrastructure and territorial distance were mentioned as factors that complicate the provision of social protection in rural areas. Social services are mainly located in small towns and regional centres; in rural areas, specialized social institutions and workers are generally lacking. In addition to the limited institutional capacity in these areas, there is also a general lack of understanding of the scope and functions of social protection. Therefore, participants recommended that special education programmes be developed in order to adequately prepare staff for social protection work in rural areas. It was stressed that in a context that is significantly shaped by out-migration and population ageing, specific groups of rural people — including the elderly, women and children — deserve particular attention. Furthermore, the local traditions of those residing in rural areas should also be taken into account.

Various examples of programmes that connect social protection and agriculture already exist. For instance, participants mentioned cases in which programmes have supported vulnerable households in cultivating their land, or have provided them with cattle and poultry with the aim to increase their income. They also highlighted that in order to achieve long-term and sustainable results for this type of programme, adequate disaster management and sustainable agricultural methods should be integrated in the approach. However, participants stressed that while schemes enhancing coherence between social protection and agriculture have much potential to support people's pathways out of poverty, increasing income and/or food availability will not automatically lead to better nutritional outcomes. The integration of nutrition education in these types of programmes was thus mentioned as a strategy to maximize results.

Nutrition education is an important component of the Cash+ pilot of the Russian-funded project, which aims to strengthen the link

Kyrgyzstan - World Food Day celebrations.

©FAO

between social protection and agriculture by providing vulnerable households with a flexible combination of cash transfers and productive activities, resources and assets, and technical training and extension services. Nutrition training is part of the pilot's activities, and consultation participants highlighted the positive results this training has achieved. For example, in Armenia, pre- and post-training testing showed that after the training, beneficiaries were more attentive in their eating habits and selection of food products. Likewise, feedback on the pilot in Kyrgyzstan suggested that the nutrition training helped many beneficiaries to change their dietary patterns, for instance by including different food groups in each meal. According to consultation participants, the fact that the nutrition training was interactive and included many practical exercises was fundamental for its success.

To further improve the effectiveness and sustainability of the Cash+ pilot as a whole, participants suggested that the receipt of benefits should be conditional upon participation in the nutrition training. This training should be extended and also provided to other important actors, such as school cooks, but the heavy workload of the current trainers needs to be addressed as well. Above all, a supportive environment, including the involvement of local media and leadership of local authorities and organizations, was mentioned as a precondition for the sustainability of Cash+.

The online consultation webpage can be accessed here:
www.fao.org/fsnforum/eca/activities/discussions/agriculture-social-protection

Addressing the challenges and realizing the potential nutrition benefits of migration in the Europe and Central Asia region

Limited opportunities for non-farm employment and income diversification, coupled with stagnant agricultural entrepreneurial activity, have led to large-scale rural out-migration in the ECA region. One of the region's major international migration flows is that of labour from the South Caucasus and Central Asia region to the Russian Federation. Migrants from this region, who often engage in circular migration, are attracted by the high labour demand and better wages in the Russian Federation, while cultural and historical ties between the countries facilitate the migration process. These migration flows help to address the labour surplus in the countries of the South Caucasus and Central Asia, while at the same time they are essential to solving labour shortages in the Russian Federation; in this sense, the migration is mutually beneficial.

Countries of origin such as Kyrgyzstan and Tajikistan, however, are increasingly regulating these migration flows and strategically assessing the consequences of migration and remittances for their development. In this online consultation, participants looked into the impact of migration by focusing specifically on its potential consequences for food security and nutrition and agriculture in countries of origin. Comments from participants reflected the belief that migration both boosts development and poses a threat to it as well.

A number of contributions from participants highlighted that inflows of remittances — sometimes equalling more than 30 percent of gross domestic product — have helped reduce overall poverty and are associated with better food security outcomes at the household level, although there is also a potential risk of increased consumption of unhealthy products. But there is also a concern that migration can pose a real threat to food security due to its impact on agriculture in countries of origin: the loss of agricultural labour can increase the sector's vulnerability and hamper the development of agricultural regions. On the other hand, participants also stressed that migration can promote agricultural development if migrants' new skills and experiences are applied in their home country upon return.

Consensus emerged on the fact that the development potential of migration has not been realized, as remittances are rarely used for productive investments. In the South Caucasus and Central Asia it would be particularly useful to invest these remittances in agriculture, as this has the potential to become a driver of economic and social growth in the region. To accomplish this, agriculture must be given special attention in state policy; in addition, governments should foster a favourable investment climate. Participants shared examples of programmes implemented in countries such as Mexico and China that have successfully attracted financial resources from migrants for productive investments. However, some comments stressed that context-specificity would make it difficult to replicate these programmes in

Jalal-Abad Oblast, Kyrgyzstan - A farmer in a field.

©FAO/Sergey Kozmin

other locations, and that the South Caucasus and Central Asia region's agricultural sector would not be ready for such initiatives due to the structural challenges it still faces. Another issue is migrants' scepticism of investing in agriculture and of the procedures for participation in these kinds of programmes, with family ties playing an important role in the process of selecting beneficiaries.

Regarding efforts to increase migrants' engagement in the development of their home country, one of the participants stressed the importance of the emotional component in the concept of "homeland". States should take note of how very important this concept is for the people from the region, and how many migrants dream of returning to a "prosperous homeland", which they themselves can help to create. In fact, if states realize the positive potential of migration, they can use this emotional attachment to convey the appropriate message to society. However, in other participants' comments a more rational perspective was adopted: it was stressed that migrants will only return to their fields once farming has become a profitable business. In this context it was also observed that in fact, resolutions of the problems related to agricultural stagnation will directly depend on the level of economic development of the country concerned, and that until the country becomes rich and economically developed, out-migration will continue.

In any case, favourable investment conditions should be created for returnees and alternative sources of income should be promoted in rural areas to boost development. In this respect, the pilot "Promoting Inclusive Economic Growth through Matching Grants", which has been implemented in Tajikistan and supports migrants and their families in business development in the agricultural sector, was mentioned as an important initiative.

The online consultation webpage can be accessed here:
www.fao.org/fsnforum/eca/activities/discussions/migration

Promoting sustainable food systems for healthy diets in the Europe and Central Asia region: the key role of school food and nutrition programmes

Different forms of malnutrition significantly affect the well-being, learning ability and future productivity of children in the ECA region. In the Caucasus and Central Asian countries in particular, moderate rates of stunting and undernourishment among children persist, and the prevalence of iron, vitamin A and zinc deficiencies is the most severe of the ECA region as a whole. In many ECA countries, iodine deficiency in children is high, and estimates suggest that overweight affects 20 to 50 percent of all school-aged children.

Schools provide a unique opportunity to address the different causes of malnutrition in a coherent way — an idea that emerged from the comments that were shared during this online consultation on school food and nutrition (SFN) programmes. These programmes are recognized as pertinent nutrition-sensitive interventions to fight malnutrition and to support the physical and intellectual development of schoolchildren. During the consultation, participants shared their views on the potential of these programmes and provided suggestions on how their impact can be maximized. In particular, often drawing on relevant existing initiatives, they explored how multisectoral approaches to SFN programmes can promote nutrition and help build sustainable and healthy food systems.

Comments that addressed SFN activities in their broader context of food security and nutrition governance highlighted that while the implementation of SFN programmes takes place mainly at the local level, the multisectoral framework that anchors these activities is developed at the national level. As SFN programmes often aim to achieve a number of policy objectives, their legal basis, policy foundation and institutional set-up require a cross-ministerial mechanism that includes, *inter alia*, the ministries in charge of health, education, social protection, poverty reduction and agriculture. In addition, vertical coordination was mentioned to be crucial for the success of SFN programmes. Participants also highlighted the value of involving different stakeholders in general.

Furthermore, participants stressed that SFN programmes have great potential to help improve children's food-related practices and capacities when they include school-based food and nutrition education. So far, however, this aspect has received insufficient attention, and current approaches may not lead to sustainable results. Some participants included suggestions for improvement, such as ensuring that the selection of the food products for school canteens is based on the dietary recommendations provided to the schoolchildren during nutrition classes, and organizing activities to promote the practical implementation of nutritional knowledge.

Kemin, Kyrgyzstan - A girl eating a healthy school meal.

©SIFI/Rustem Ilyasov

Participants also discussed the importance of involving the private sector in SFN programmes. They referred, for instance, to France, where several municipalities have implemented home-grown school feeding programmes by establishing partnerships with farmers, with the former employing the latter to grow organic food on municipal land for school canteens. Participants' pointed out that home-grown school feeding in general contributes to improved nutrition and health in various ways: it improves the diet of schoolchildren, encourages the production of healthy and organic food, contributes to healthy environments, revives local economies by supporting the livelihoods of small-scale farmers, and improves the dietary practices and nutritional knowledge of schoolchildren and their families.

Policy and regulatory frameworks, school food and nutrition education, and home-grown school feeding are three of the four pillars of the Russian-funded project's pilot "School Food and Nutrition Programme Linked to the Agricultural Sector"— the fourth pillar being the provision of schools with healthy school food and meal guidelines. This pilot has been implemented in all three project countries with the same comprehensive, food systems-based approach, but different models have been adopted to meet the specific needs of each country.

The online consultation webpage can be accessed here:
www.fao.org/fsnforum/eca/activities/discussions/school-food

Rome, Italy - A meeting with international participants at FAO headquarters.

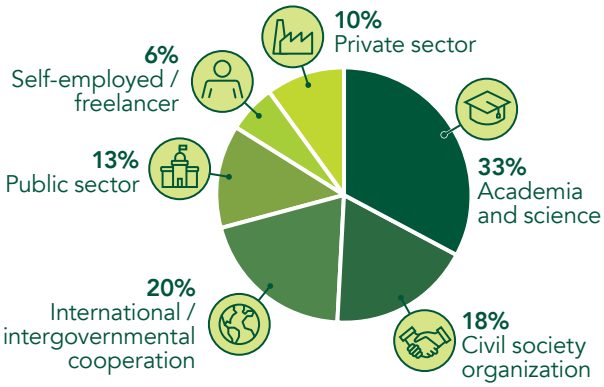
The online consultations

Global level

At the global level, the Russian-funded project supported the inclusion of Russian-speaking audiences by providing translations of the FSN Forum discussions. These discussions also contributed to raising awareness about important global food security and initiatives among relevant experts in the ECA region.

Topics being discussed globally that were of particular relevance to the project could thus benefit from the knowledge existing in the region, allowing practitioners to help shape global policy initiatives and to connect with and learn from other actors working on similar topics.

Affiliation of participants



Rural migration, agriculture and rural development

Migration has received substantial international attention in recent years. While the main focus has been on international migration, this in only part of a bigger picture that includes both international and domestic migration. Rural migration — migration to, from and between rural areas — is an important component of these migration flows. It has a close bidirectional relationship with agricultural and rural development, where agricultural and rural development affect migration and vice versa. In this online consultation, participants focused mainly on rural out-migration and discussed some of its drivers and impacts, while sharing their views on how migration should be dealt with in policies.

Participants pointed to the fact that rural out-migration is driven by factors such as poverty, food insecurity, demographic pressures, conflict and acute climate events. While these factors are often interrelated, they are also connected to more specific rural conditions. In this regard, many participants highlighted problems in the agricultural sector that pose a threat to rural livelihoods, such as: low productivity, high prices of inputs, low prices for produce, inadequate market access, depletion of natural resources, shrinking farm size, and land grabbing. Some participants argued, in fact, that rural migration is almost always a manifestation of the failure of national policy to create a favourable environment for agriculture. The lack of off-farm opportunities, inadequate social services and lack of infrastructure in rural areas are additional factors pushing rural people to migrate, while the demand for labour in other areas or countries serves as a pull factor for those searching for a way to improve their conditions.

The multiple impacts of rural migration can be positive or negative, depending on the context. Participants stressed that migration brings economic benefits, skills, knowledge and networks to countries of origin. In particular, the positive role of remittances in economic development and poverty reduction was emphasized. Research has found that a 10 percent increase in official remittances per capita leads to a 3.5 percent decline in the share of people living in poverty. However, regarding migration's impact on agriculture, a mixed but largely negative picture emerged: while in some cases the inflow of remittances was associated with higher agricultural productivity, most participants stressed that migration-induced labour loss adversely affects agricultural production.

Some participants also discussed migration's impact on host communities. On the one hand, they stressed that migrants help fill labour shortages and provide different skills and knowledge. On the other hand, they pointed to problems that may emerge as a consequence of rural-urban migration, examples being the uncontrolled growth of cities, establishment of illegal settlements, and a rise in unemployment. These issues can in turn lead to social tensions in host communities.

Despite recognizing both the costs and benefits of migration, participants' policy recommendations generally reflected the idea that migration negatively affects areas of origin, with a focus mainly on reducing the factors that drive it. For instance, some

Sukkur, Pakistan - Flood victims escaping the flooded areas by truck.

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participants advocated for a paradigm shift regarding development, with a focus on building "smart villages" rather than "smart cities" in order to boost employment and the provision of facilities in rural areas. By contrast, other participants pointed out that a different perspective may also be needed, noting that the sometimes prevailing idea that "small is beautiful and sustainable in farming" may, in fact, prevent rather than enable the structural change needed in the sector.

While many participants stressed that reducing rural out-migration requires a focus on agricultural development, it was also argued that migrants should not just be seen as producers in the agrifood system, but as individuals with capacities, aspirations and expectations. Hence, a human development perspective should be adopted when looking at migration, with an integral approach to analysis that treats migration as a complex and systemic phenomenon. But first, in order to promote a better understanding of migration, a common language and migration-related definitions should be established. Addressing the current ambiguity in terminology is crucial to the promotion of a well-informed debate on migration and hence the development of sound and evidence-based policies.

The online consultation webpage can be accessed here:
www.fao.org/fsnforum/activities/discussions/SOFA_migration

How can value chains be shaped to improve nutrition?

Nutrition-sensitive approaches to value chain development constitute a promising way to shape food systems for improved food security and nutrition, as they allow for harnessing opportunities to enhance nutrition from the production to the consumption phase. Recognizing this, the Rome-based Agencies — FAO, the International Fund for Agricultural Development (IFAD), the World Food Programme (WFP) and Bioversity International — have identified nutrition-sensitive value chain (NSVC) development as a key area where their collaboration can be strengthened to enhance progress towards ending malnutrition. For this purpose they have established a Working Group on Sustainable Food Value Chains on Nutrition, which has, *inter alia*, developed a joint analytical framework for NSVC project design. This framework was presented during a special event organized in the context of the Committee on World Food Security Plenary Meeting in October 2016.

In the process of further developing the analytical framework and refining their common approach to NSVC development, the working group decided to launch this FSN Forum online consultation to solicit feedback from a broader audience of development practitioners and researchers from all over the world. In addition to providing concrete suggestions on the analytical framework, consultation participants responded to the working group's invitation to identify opportunities and challenges for NSVC development and to share case studies and good practices — input that would support the working group in the process of moving from principles to action, and in introducing the NSVC approach into operations in the field.

Consultation participants discussed a wide array of opportunities for increasing nutrition at different stages of the value chain. For instance, participants stressed the need to diversify agricultural production and to increase the availability of naturally nutrient-dense food. They also argued that in order to meet the nutritional needs of local populations, the value chains for local and indigenous foods need to be strengthened. In cases were nutritious diets are not available or accessible, fortification, and in particular biofortification, could provide solutions. However, some participants also stressed the need to adequately monitor the impact of fortification interventions on NSVCs in order to prevent the marginalization of local food systems.

Multiple participants pointed out that across the value chain as a whole, much can still be done to increase the availability of safe and nutritious food on the market. Storage facilities, transportation, processing and packaging can be improved, and efforts to reduce food loss and waste can be strengthened. Nutrition awareness also needs to be promoted among all value chain actors, as this is crucial to stimulating the demand for nutritious food, which in turn determines whether or not producers will engage in NSVCs.

Participants also brought up a number of challenges that arise in the development of NSVCs, particularly the current fragmentation and lack of coordination among value chain actors and across sectors. It was argued that a multisectoral approach is needed that links the health, nutrition and agriculture

Pissa, Central African Republic - Farmers transporting harvested cassava by cart.

©FAO/Riccardo Gangale

communities together; this would require a shared vision and the commitment of all actors involved, and a clear definition of their roles and responsibilities in relation to food security and nutrition. In addition, some participants stressed that legal and regulatory frameworks should be reviewed to make sure they are in line with NSVC approaches and that human rights are integrated.

Another challenge that emerged from the discussion concerned the task of ensuring that value chains are nutrition-sensitive, environmentally sustainable and economically viable all at the same time. As most value chains are driven by private sector entities that often focus on specific commodities in order to use economies of scale, it is quite challenging to make the economic case for diversification and for the production of nutritious foods. In light of this, it was pointed out that nutrition-sensitive approaches seem easier to implement in initiatives driven by development actors than in those driven by the private sector. It was also stressed that in fact, a shift in focus would be needed away from economic value and towards a holistic approach to value chain development, one that is inclusive of the poor and vulnerable — both as producers and consumers — and one that makes nutritious and diverse food available and affordable in a sustainable manner.

The online consultation webpage can be accessed here:
www.fao.org/fsnforum/activities/discussions/nsvc

What role can agricultural extension and advisory services play in realizing gender equality and improved nutrition?

Compelling evidence exists that gender inequalities significantly undermine food security and nutrition objectives. To tackle these inequalities, it is essential to adopt integrated approaches that connect the design and delivery of programmes across disciplines and sectors. With agricultural extension and advisory services (AEAS) now shifting from a production-oriented, technology transfer model to one with greater emphasis on broader development objectives, there is now a potential role for AEAS to promote gender equality and support nutrition.

Members of the Nutrition Working Group of the Global Forum for Rural Advisory Services (GFRAS) launched this FSN Forum online discussion to reflect on the role AEAS can play in reducing gender inequalities and improving nutrition, and invited discussion participants to share their thoughts, experiences and lessons learned on gender-sensitive and nutrition-enhancing AEAS practices. Participants' input served to inform the work of the recently established Nutrition Working Group, and the discussion participants were invited to become part of the working group's broader community.

During the discussion, suggestions were shared regarding the approaches and strategies AEAS should adopt in order to facilitate improved gender and nutrition outcomes. Participants stressed that AEAS should take a whole-of-family approach, but also pointed to the need to better target women. For instance, when establishing contacts with farmers, AEAS staff could directly contact women instead of contacting the head of the household. AEAS should also recruit more female extension workers, who are often better able to help female farmers in adopting innovative processes and advising them on other (household-related) issues. Moreover, the mere presence of these female extension workers visiting other farmers can change local perceptions and promote gender equality. Furthermore, AEAS could more actively try to improve gender equality and nutrition by identifying the entry point to women's empowerment and by working with local "influencers" to devise engagement strategies using tailored messages relevant to women's spheres of influence.

Participants' contributions also included ideas for the activities AEAS should carry out to support gender equality and nutrition. Participants stressed the need to facilitate women's access to financial services and productive resources, to establish and support self-help groups for women, and to invest in improving women's education. In addition, AEAS should promote digital literacy among women and train them in topics such as the use of improved seed varieties, conducting online sales, resource management, and, more generally, in health and nutrition. Another suggestion was to invest in time-saving technologies, which would improve income generation and allow

Lubombo Region, Swaziland - Assistant Extension Officer and Farmer Field School (FFS) Master Trainer Mr Thembinkosi Mango engages a farmer group.

©FAO/Believe Nyakudjara

for engaging women in strategic activities such as political participation.

In addition, participants pointed to challenges regarding the possibility of AEAS addressing gender and nutrition issues in its activities. A major problem is the fact that developing countries often lack the financial and human resources to expand AEAS, and that female farmers lack the necessary funds to implement solutions that would empower them. Another issue is the traditional focus on economic objectives and increasing productivity, which has led to inadequate attention given to gender and nutrition goals. Furthermore, due to poor linkages between research organizations, extension services and farmers, research is often not demand-driven and the priorities of women are rarely brought into the research agenda. Finally, some participants highlighted that AEAS is not in a position to address the whole household food situation, as it deals only with what people grow for food, not with what they buy.

Referring to the challenges AEAS faces in operating effectively, in particular when improving gender equality and nutrition, participants stressed the need for regular capacity building and reviewing of curricula for extension workers. AEAS staff should be trained in gender-differentiated methodologies, and nutrition should be included in pre- and in-service curricula. In addition, particular attention should be paid to intrahousehold dynamics that influence decision-making related to agriculture and that have a bearing on nutrition outcomes.

The online consultation webpage can be accessed here:
www.fao.org/fsnforum/activities/discussions/extension-gender-nutrition

Ittifok, Tajikistan - FAO beneficiary, Amrinisso baking traditional Tajik flat bread, named kulcha, in the oven.

Case studies

To address the increased demand by development actors for ideas and experiences from within their own region, the Russian-funded project and the FSN Forum invited experts from the ECA region to share good practices and lessons learned on food security and nutrition policy implementation. The aim of this call was to take stock of the specific processes that facilitated the creation of inclusive policies and intersectoral coordination mechanisms in this field.

This chapter showcases a selection of the most relevant case studies submitted. They are organized into three categories: sustainable food systems, school food and nutrition (one of the thematic areas of the project), and governance and accountability. The other thematic areas, migration and social protection, also appear in some of the case studies.

The webpage of the call can be accessed here:
www.fao.org/fsnforum/eca/activities/open-calls/FSN_policy_implementation

Sustainable food systems to improve nutrition

CASE STUDY 1: INFLUENCE OF SOCIAL MARKETING ON HEALTHY NUTRITION BEHAVIOUR OF GEORGIAN CONSUMERS

Author:

Charita Jashi, professor at Tbilisi State University, Caucasus Development Group, Georgia

Time period and scope:

Georgia, national level, since September 2016

Implementers:

Ministry of Education and Science of Georgia

Objectives and approaches:

Georgia's Association Agreement and Comprehensive Trade Agreement with the European Union (DFCTA), entered into force on 1 July 2016, pays special attention to the issues of food safety and food security. The Health Strategy of Georgia (2015–2020) emphasizes that information on the dietary habits of the country's population is insufficient and in need of a thorough improvement. FAO and WHO indicate that food security is the right of every individual person to have access to sufficient, safe and nutritious food for an active and healthy life. In order to ensure the effective implementation of the recognized principles of food security at the national level, governments must ensure the formulation of food policies, through the incorporation and promotion of international standards of food security and adequate nutrition into national legislation and their subsequent application and promotion.

Funding and technical assistance:

A national study on school feeding carried out in Georgia in 2016 revealed that there is no integrated government policy on healthy nutrition in schools. Many schools, especially in the provinces, do not provide school lunches.

Stakeholders and coordination:

Schools with their own canteens choose food suppliers on the basis of a tender. There are no official documents and standards regulating school nutrition. The school administration and / or organizers involved in the tendering process do not have methodological school nutrition guidelines that they can follow.

Addressing food security and nutrition issues:

The Ministry of Education should integrate the principles of a healthy lifestyle into the school's curriculum. It is important to cooperate with health organizations and experts to ensure the development of school nutrition standards, and to focus on using social marketing to raise awareness among schoolchildren about healthy food that they can choose themselves.

Elements essential to the viability of this practice:

It is necessary to conduct a study on healthy nutrition in Georgian schools to understand the behaviours of children and adults, and the prospects for changing them.

Catering facilities should be located in schools and higher education institutions should maintain healthy food standards. There must also be a system for monitoring a healthy diet. Currently, about 95 percent of the Georgian population receive more calories than recommended.

Impact on national policy and people's lives:

A new social marketing initiative of the Ministry of Education and Science was introduced in Georgian schools on 17 September 2017. One of the requirements is a ban on the sale of junk food in school canteens and unhealthy foods in school cafeterias. In Tbilisi's schools, this includes a ban on crisps, carbonated drinks and foods made with gelling agents.

Key lessons:

Key state institutions, business, civil society and the media should unite to promote the social marketing campaign to encourage healthy nutrition and the supply of fruits, vegetables and other organic products to the schools. The Market Research Centre of Tbilisi State University will actively participate in the monitoring process.

CASE STUDY 2: THE EFFECTIVE APPLICATION OF ORGANIC FERTILIZERS IN KYRGYZSTAN

Author:

Nurlan Kadyrkulov, General Manager, EkoAgro LLC

Time period and scope:

Kyrgyzstan, provinces of Chu, Jalal-Abad and Osh, since 2014

Implementer:

EkoAgro LLC

Objectives and approaches:

Human health depends on the quality of agricultural products, which in turn depends on having biologically healthy soil. EkoAgro specializes in the production of biofertilizers under the registered trademark «Bio +» for the cultivation of organic products in greenhouses and in fields. Production is certified, and has won awards at international industrial exhibitions.

Funding and technical assistance:

Funding is provided by EkoAgro shareholders. Local and foreign agricultural professors and consultants were involved in the development of the biofertilizer.

Stakeholders and coordination:

EkoAgro works closely with the Department of Application of Chemicals and Pesticides under the Ministry of Agriculture and Melioration of the Kyrgyz Republic. Field trials were conducted with Kyrgyz farmers to test the biofertilizers in the cultivation of various crops.

Addressing food security and nutrition issues:

Food security in the region is ensured through the use of organic fertilizers to increase crop yields.

An analysis of the soil fertility of agricultural land in Kyrgyzstan by specialists of the company and the Kyrgyz National Agrarian University determined that around 88 percent of land was degraded and vulnerable to desertification, and therefore impossible to use to achieve high yields of quality crops. The solution was to switch to organic farming by providing farmers with high-performance, low-cost organic fertilizers.

Farmers normally use manure as organic fertilizer, which leads to fields clogged with weed seeds and pathogenic microorganisms that cause plant diseases. The company produces efficient, liquid, dry-bulk and granular organic fertilizer, as well as biocompost processed from cattle and poultry manure.

Elements essential to the viability of this practice:

From 2014 to 2017, EkoAgro conducted more than 50 training workshops on organic farming, production of environmentally friendly products, composting, and methods of applying organic fertilizers. State support for increasing public awareness of healthy nutrition and quality of agricultural products is important.

Impact on national policy and people's lives:

The research on the development and use of organic fertilizers in the cultivation of crops allowed for the acquisition of new types of organic fertilizers, which has had a positive effect on the yield and quality of products in different regions of Kyrgyzstan.

Key lessons:

In Osh province, the application of organic fertilizers has increased yields for corn, potatoes, radishes, cabbage, tomatoes and melons by an average of 15–20 percent. In Jalal-Abad province the strawberry yield increased to 17 percent, and in Chui province to 30 percent. In Chui province, the yield for cabbage increased by 16–22 percent and that of sugar beet increased by 21–33 percent.

CASE STUDY 3: FOOD SECURITY AND NUTRITION POLICY IN BELARUS

Authors:

Natalia Kireenko, PhD, Associate Professor, Deputy Director for Science of the Republican Scientific Unitary Enterprise "Institute of System Research in Agroindustrial Complex of the National Academy of Sciences of Belarus"; and Svetlana Kondratenko, PhD, Associate Professor, head of the food security sector of the same enterprise

Time period and scope:

Belarus; national, regional, local and household levels, since 2015

Implementers:

Ministry of Agriculture and Food of the Republic of Belarus; National Academy of Sciences of Belarus; Belarusian State Food Industry Concern "Belgospischeprom"; Republican Scientific Unitary Enterprise "Institute of System Research in Agroindustrial Complex of the National Academy of Sciences of Belarus"

Objectives and approaches:

Food security is defined as the most important component of national security and a necessary condition for ensuring high living standards and harmonious personal development of the population in Belarus. The provision of raw materials and food should not be affected by adverse internal and external influences.

A series of complex scientific and practical documents form the basis of the country's food security monitoring system: Concept of National Food Security (2004); "Recommendations for monitoring food security"; "Recommendations on the formation mechanism of identifying, evaluating and pre-empting threats in the food sector (2015)"; "Scientific and technical base of the food security information" (http://prod.refor.by); and the National Food Security Doctrine of the Republic of Belarus until 2030 (draft).

Food security monitoring is carried out by the National Academy of Sciences in cooperation with the Ministry of Economy, Ministry of Agriculture and Food of the Republic of Belarus, and the Belarusian State Food Industry Concern "Belgospischeprom". A specially designed system of food security indicators and thresholds allows for quickly identifying potential threats to public nutrition and the economic and physical access to food. The monitoring results are then used to adjust the direction of socio-economic and agricultural policies in the light of problematic issues and potential threats.

Funding and technical assistance:

Financing of scientific development to ensure food security is carried out under the framework of the State Programme for Research and the government scientific and technical programmes. These bodies continue to research complex and innovative developments in the field of food security.

The National Statistical Committee of the Republic of Belarus promptly provides the necessary statistical information and the results of household surveys.

Indicators and methodological approaches used for monitoring are based on FAO recommendations.

Stakeholders and coordination:

The Government of Belarus and state administrative bodies are charged with implementing a uniform food security policy: taking measures to achieve and maintain target criteria; coordinating activities at national and regional levels; organizing monitoring; and taking measures to forestall emergencies.

Regional bodies in Belarus implement a common economic policy on food security in terms of ensuring an adequate level of agricultural and agro-industrial production; creating economic conditions for real income growth; and maintaining the necessary reserves of agricultural products, raw materials and food.

The results of the national food security status assessments are published in the press and are used to inform the population.

In 2015, on the basis of the Republican Scientific Unitary Enterprise "Institute of System Research in Agroindustrial Complex of the National Academy of Sciences of Belarus", the International Centre for Food Security (www.prod.refor.by/centrprod) was created. The Centre is responsible for creating conditions for innovative scientific and technical developments in the field of food security and food safety; maintenance and development of the national scientific school of food security; and interdisciplinary projects and international cooperation at the level of the Eurasian Economic Union (EAEU).

The experience of Belarus is actively used in the development of the EAEU Food Security Concept; the concept of improving food security of the CIS member states; the concept of agreed (coordinated) agricultural policy of the Member States of the Customs Union and Common Economic Space; as well as in the collective Concept of Food Security of the States Parties of the EAEU (project).

Addressing food security and nutrition issues:

Essential in addressing food security challenges were the State Programme of Rural Development for the period 2005–2010, the State Programme of Sustainable Rural Development for 2011–2015, and the State Programme of Development of Agricultural Business in the Republic of Belarus for 2016–2020. These programmes have resulted in a significant increase in production of agricultural raw materials and food, greater potential for exports, and higher incomes and improved social conditions among the rural population. The country now fully meets its food demand and allows the domestic market up to 15 percent of imported products. The level of own food production achieved in 2016 ensures the physical accessibility of food to the public of approximately 3 400 to 3 500 kcal per person per day. Exports of agricultural products account for about 8–9 percent of GDP, and for 16–18 percent of the total exports of the country.

The government pays special attention to increasing food production and boosting the supply of baby foods. Using criteria and indicators incorporated in 2016, the food security system monitors the quality of children's diets, as well as the food security of the population in urban and rural areas.

Elements essential to the viability of this practice:

The foundation of the existing national food security monitoring system lies in the Concept of National Food Security, 2004. Current goals and objectives in the field of food security, as well as the mechanisms and measures for their implementation, are defined in the National Food Security Doctrine of the Republic of Belarus until 2030 (draft), aimed at providing the population with quality food for good nutrition and a healthy lifestyle.

The doctrine's goals and objectives include: sustainable development of the main food types to ensure self-sufficiency; transitioning to a system for evaluating the quality of food products according to international standards; the availability to the public of safe and quality food products in the volume and variety required for an active and healthy lifestyle; timely identification, assessment, prediction and anticipation of internal and external threats to food security, to minimize their negative impact; and creating a culture of nutrition.

Impact on national policy and people's lives:

Belarus has achieved a high annual per capita level of food consumption. The indicators of food quality are also at a sufficiently high level: the ratio of proteins, fats and carbohydrates is 1.0: 1.4: 3.6, with an optimum ratio of 1.0: 1.2: 4.0.

FAO considers Belarus among the countries with a "very low proportion of undernourished people in the total population — less than 5 percent", on a par with the Russian Federation and with European Union countries.

Key lessons:

The level of economic access to food is a deterrent to improving the diet of the people of Belarus. The rate of real income of the population is not sufficient to improve the quality of food. Expenses for food as a part of household consumption expenditure accounted for 41.5 percent in 2016.

There are persistent differences in the level of consumption of basic foodstuffs between urban and rural areas. Urban households on average consume more dairy (28 kg per person per year), meat products (6 kg) and fruits (23 kg), but less bread (29 kg).

The population groups most vulnerable to food security threats are households with children. Families with three children have the highest consumption of potatoes, bread and bread products. The share of low-income households in the category with children is about 7 percent, while in families with two or more children it is 11 percent.

The prevalence of overweight has increased in both urban and rural areas as well. At the beginning of 2016, the share of overweight people in the country's urban population aged 16 and over was 23.6 percent, and for the rural population, 31.9 percent. In 2010, these figures were 19.8 and 23.0 percent, respectively.

The monitoring results indicate that in order to ensure improvements in the quality of food, especially for children, it is necessary to increase the affordability of products, saturate the domestic market with local high-quality products, and improve food supply in rural areas.

CASE STUDY 4: BAKERY DEVELOPMENT PROJECT IN THE REPUBLIC OF KARELIA

Author:

Valery Koshelev, Head of Department, Lyudmila Shushkina, second-year graduate student; Russian State Agrarian University – Moscow Timiryazev Agricultural Academy

Time period and scope:

Russian Federation, Republic of Karelia, regional level, since 2017

Implementers:

Industrial level: Russian Guild of Bakers and Confectioners (RGBC). *Federal level*: department of food and processing industry. *Regional level*: RGBC local office in the Republic of Karelia; Department of the Economy of the Government of Karelia; regional administration; Ministry of Health and Social Development of the Republic of Karelia

Objectives and approaches:

Bread is the most important product in the food security system. People have enough bread, but to ensure variety and affordability in some regions of the country requires the development and implementation of sectoral programmes with the involvement of the government.

The Bakery Development Project is a research study aimed at developing a universal methodical approach for the baking industry, using the required scientific basis to achieve optimal, cost-effective development of the industry at the regional level, with subsequent testing of the approach in the Republic of Karelia. The study also aims to develop measures specifically aimed at improving food security in the region.

The study consists of several stages: collection of statistical data; identification of areas with greatest consumption of grain products; identification of territories with potential to attract investment for production and delivery to retail outlets; development of economic and mathematical models for bakeries, raw material supply centres and the distribution of finished products; and analysis of the models to determine optimal solutions.

The goal is to ensure food security for the region's population by providing bakery products of adequate quality and quantity, and at affordable prices. This is dependent on the location of production centres, availability of raw materials and development of the logistics network. Analysis of the effectiveness of the chosen model, the required investment, and the expected length and return on investment allows for developing an attractive proposal for investors.

Funding and technical assistance:

In accordance with the preliminary agreement, the RGBC finances the project and provides technical support at the federal level. The programme is interdepartmental, with funding and technical support provided by the Ministry of Economic Development and Industry, Ministry of Agriculture and Fisheries and the Ministry of Social Welfare, Labour and Employment of the Republic of Karelia.

Stakeholders and coordination:

An important mechanism for the implementation of the bakery development programme is its coordination of all actors and stakeholder actions at all levels. This involves horizontal, interdepartmental actions (at the federal and regional level), as well as vertical interactions between the RGBC and ministries and departments (from a regional to a federal level).

Addressing food security and nutrition issues:

Bread and bakery products are a top priority staple of daily life; moreover, they have strategic significance as well. The former Soviet Union created a powerful baking industry, with large-scale production and centralized supply channels to cities and other settlements, and using economies of scale to reduce the unit cost of bread production. The quality and variety of products, however, was a secondary priority. In the post-Soviet period, a wide variety of better-tasting imported products has had a negative impact on the development of the sector.

Development and implementation of sound investment decisions based on the interests of the people in the region, its economy and resources, will reduce prices of local bakery products and hence reduce their import substitution as well, with eventual positive impacts on the food security situation in the region.

Elements essential to the viability of this practice:

In order to ensure institutional, social, economic and environmental sustainability of the baking industry, the Government of the Republic of Karelia should initiate a regional baking development programme. This programme should have clearly prescribed goal and objectives, roles of participants, rights and responsibilities, distribution of functions between responsible institutions and ministries, timeline, and budget.

It is important to identify the agencies that have supervisory functions, as well as agencies that monitor and report to stakeholders on a regular basis.

Impact on national policy and people's lives:

This regional bakery development programme in Karelia should aim to encourage sustainable rural development, reduce rural unemployment and out-migration, and improve living standards through the opening of new businesses in small settlements, infrastructure development, and the creation of new jobs.

Key lessons:

Now there are 88 baking enterprises in Karelia (down from 110 in 2009) serving 13 cities and 776 rural settlements. Over the past five years, the price of bread and bakery products has increased by 22 percent, and prices are higher than in neighbouring federal districts.

The volume of bread and bakery production in the Republic of Karelia in 2015 totalled 20 300 tonnes, down by 7 600 tonnes (or 40 percent) from 2010. In 2015, consumption of bread and bakery products in the region amounted to 33 500 tonnes, of which 13 200 tonnes were imported from neighbouring regions. Therefore, it can be assumed that the quality and variety of local bakery products does not meet demand, and local producers are losing out to competition from producers in other regions.

It is hoped that the implementation of the regional baking development programme will make bread locally and economically accessible for the population, and increase the competitiveness of local bakeries.

CASE STUDY 5: SUSTAINABLE SCHOOL FEEDING TO PROVIDE BETTER NUTRITION IN KYRGYZSTAN

Author:

Nurlan Baigulov, Head of the Department for Control of catering services and public procurement, City Hall Department of Education, Bishkek

Time period and scope:

Kyrgyzstan, Bishkek, since 2017

Implementers:

96 secondary schools, 84 preschool educational institutions and six extracurricular organizations in Bishkek; Bishkek City Hall Department of Education

Objectives and approaches:

The Law of the Kyrgyz Republic "About the organization of meals in general education schools of the Kyrgyz Republic" No111 dated 27 June 2002, Law "On preschool education" No. 198 dated 29 June 2009, Decree of the President of the Kyrgyz Republic "About catering services for pupils in secondary schools" No. 673 dated 12 July 2006, and the Ruling of the Bishkek City Council "About catering services for children in educational institutions of Bishkek city" No. 129 dated 20 May 2015, determine the organization of meals in Bishkek educational institutions.

Nutrition is one of the most important factors affecting the health of children and adolescents, contributing to the prevention of diseases, improvements in health and academic performance, and physical and mental development. Recognizing this, the Bishkek Department of Education has developed a methodology for the organization of school meals consisting of the following: monitoring of catering services for children in secondary schools and preschool educational institutions; assessing the financial requirements for school feeding; menu pricing; food price monitoring; and competitive bids according to estimated costs and the Law of the Kyrgyz Republic "On state purchases".

Funding and technical assistance:

The city of Bishkek provides the funding for the school feeding programme, which is then implemented by 96 secondary schools in the city.

Stakeholders and coordination:

The Bishkek mayor's office has prepared a draft agreement on cooperation and mutual assistance with WFP in the framework of the School Nutrition Optimization project and identified pilot schools for the development of variable nutrition models. In December 2017, competitive bidding for catering services in educational institutions of Bishkek for 2018 will be held.

Addressing food security and nutrition issues:

As part of the school feeding programme, hot meals and pastries were organized in school cafeterias for a total of 73 935 students in Bishkek. This included 69 380 children in grades 1–4 (free meal), 3 230 children in grades 5–7 (meal costing KGS 14 per day), 651 children in specialized schools (KGS 28 per day) and 674 children in orphanages or home care (KGS 110 per day).

The programme aims to improve nutrition and health in various ways, including educating consumers on nutrition, creating a "cold" value chain, keeping perishable food fresh, and linking agricultural production on a contractual basis with farmers.

Elements essential to the viability of this practice:

The success of this practice depends on the establishment of a resource-efficient system of school feeding that offers a healthy menu. However, it must also educate consumers about the problem of food waste.

Impact on national policy and people's lives:

Currently, more than 72 000 children benefit from these meals in their educational institutions.

Key lessons:

A growing number of children consume more calories than they need for a healthy and active life. Increases in animal protein intake, particularly beef, which is an inefficient and resource-intensive product from the viewpoint of ecology, is also affecting land use and greenhouse gas emissions.

Food consumption must be reduced to build a sustainable food system, taking into account the effective utilization of the soil, water and energy and reduction of food loss and waste.

CASE STUDY 6: THE PILOT PROJECT OF SCHOOL BAKERIES IN TAJIKISTAN

Author:

Elena Bolotnikova, Director for International Cooperation, Social and Industrial Foodservice Institute (SIFI)

Time period and scope:

Tajikistan, cities of Norak and Rogun; a local pilot project from 2015 to 2016

Implementers:

The pilot project for school bakeries was a joint project of WFP and SIFI under WFP's School Feeding Programme, with support from national and local authorities

Objectives and approaches:

Bread is a staple food in Tajikistan. An assessment of the state of school meals in Tajikistan conducted by SIFI showed that schools bake their own bread or buy it in stores, or on the local market. A private bakery can bake bread, or the parents can bake bread at home and bring it to school. Other studies however have reported that baked goods can be prepared in one of the schools in the district, and then delivered to neighbouring schools. This seems to be the most cost-effective and sustainable model. The schools submit orders specifying the number, and the school bakery supplies products to those schools.

The main objective of the project was to provide high-quality nutritious bread as well as additional funding to schools to improve school nutrition.

School bakeries create employment opportunities for local communities, who can sell the surplus on local markets. Profits from the sale of bread can be deposited in the school feeding fund. The funds can then be spent on a variety of school food and on improving school infrastructure.

School bakeries ensure a stable supply of bread, and also check the bread for quality and for compliance with hygiene standards.

At the initial stage of the project two schools were selected. School selection criteria were: the school director taking responsibility for the arrangement of the bakery, and for assisting in the repair of the premises; the support of local authorities; and the availability of vocational bakers in state schools. The schools were provided with technical assistance in equipping the bakeries, staff training, and all necessary documents and approvals from local regulatory authorities. At school number 3 in Norak and school number 1 in Rogun, bakeries were established to produce bread for their own needs and for 8 other schools in Rogun and 14 schools in Norak.

Funding and technical assistance:

SIFI analysed the situation of bread production in the regions, consulted with local authorities (*Hukumats*) and then selected schools to participate in the pilot project.

After receiving approval from the school directors, SIFI prepared feasibility studies of the project and all necessary documentation for repairing buildings and infrastructure, selected equipment, and supervised the renovation of the buildings and installation of equipment.

Finally, SIFI conducted a training session for cooks and developed recipes and instructional charts for baking the products.

The pilot project was a part of a WFP project funded by the Government of the Russian Federation. The local *Hukumat* supported school number 1 in Rogun, paying the cost of electricity, as well as investing in repair works. The local Norak government supported its bakery in transporting the products to schools.

Stakeholders and coordination:

The intergovernmental coordination council on the development of school feeding, created by the Government of the Republic of Tajikistan in 2013, included representatives of the Ministry of Education and Science; Ministry of Finance; Ministry of Agriculture; Ministry of Economic Development and Trade; Ministry of Labour, Migration and Employment of the Republic of Tajikistan; Institute of Nutrition of the Republic of Tajikistan; and the government sanitary and epidemiological surveillance service. The agency for standardization, metrology, certification and supervision in the field of trade resolved all issues at the initial stages of the project, taking into account the interests of all stakeholders and the requirements of national ministries.

There was also a supervisory board which controlled bakery operations and served as a decision-making body. The supervisory board was elected at the general meeting of the school, with the Chairman elected by the members of the board.

The supervisory board was responsible for the management and monitoring of the bakery, including the budget, and held quarterly meetings. The school provided quarterly financial reports to the board.

Addressing food security and nutrition issues:

In Tajikistan, there is currently a national school feeding policy under development. The Government has approved the Concept and Development Strategy of school feeding, but the national school feeding programme funded from the state budget is not planned to be launched until 2020.

The WFP School Feeding Programme is currently operational. Under this programme, WFP provides food to schools for hot meals, in particular enriched wheat flour, sunflower oil, salt and peas, and assists in refurbishing school canteens.

Despite the efforts of WFP and the support from donors, the sustainability of school feeding remains in doubt. In light of this, WFP and SIFI have decided to 1) increase baking quality and safety, and 2) provide schools with the opportunity to earn income by baking additional bread and selling it at school or in the local market.

Elements essential to the viability of this practice:

All schools appreciate the work of the pilot bakeries and speak positively about them. But, at the national level, there is still not a single policy document to encourage schools to undertake this kind of activity, for example using tax credits or other promotions.

To ensure the sustainability of school bakeries, the Government of Tajikistan needs to subsidize (through an actual law or decree) the cost of the energy consumed in bread production. There must also be government regulations to monitor the relations between central bakeries and schools, as well as the involvement of local authorities in the delivery of the finished baking products.

Furthermore, schools should register their bakeries as legal entities to allow them to sell surplus and keep the proceeds in the school fund. Support and advising in the preparation of documents and business training for school principals and staff bakeries is also required.

Impact on national policy and people's lives:

So far, the bakeries have served 3 935 students (2 547 in Norak and 1 388 in Rogun). The project is a successful example of a sustainable school feeding mechanism that can be expanded to the whole country.

From the point of view of current impact on people's lives, the project has improved the quality of school meals and the health of schoolchildren, increased the effectiveness of the educational process, and contributed to the household economy.

In the medium and long term, this project will help to create a permanent sustainable mechanism that can be integrated into the national school feeding system.

Key lessons:

New kitchen equipment and monitoring by the school administration have allowed school bakeries to produce better quality bread. In some cases, however, bakery staff are reluctant to use the new equipment. Additional instruction and regular monitoring of projects at each stage is thus required.

School principals do not take the steps necessary to produce additional pastries, as this requires the registration of the bakery as a legal entity and preparation of additional documents for local executive authorities, the state sanitary and epidemiological surveillance service, the energy company, antimonopoly authorities and fire services. Registering the bakeries also makes them subject to numerous checks in the future, which directors may want to avoid. Joint work with school principals and direct support in the preparation of documents is thus recommended.

There needs to be a written agreement to clarify responsibility for payment of electricity used by the school bakeries.

The assistance provided by the local executive authorities, given as a private initiative of the current Chairperson of the *Hukumat*, may end with his retirement. For this reason, any support from the local authorities should be formalized legally.

CASE STUDY 7: AN ALTERNATIVE MODEL FOR SCHOOL FEEDING IN URBAN SCHOOLS OF KYRGYZSTAN

Author:

Elena Bolotnikova, Director for International Cooperation, SIFI

Time period and scope:

Kyrgyzstan, Bishkek, local level, 2013–2017

Implementers:

The project was initiated by WFP with technical support from SIFI, and supported by the Ministry of Education and Science of the Kyrgyz Republic and the Bishkek Department of Education.

Objectives and approaches:

A national school nutrition programme has existed in Kyrgyzstan since 2006. In Bishkek, city authorities allocate KGS 14 (USD 0.20) per child per day to provide students a free drink (tea, milk, or fruit juice), muffin or pastry. The city of Bishkek has allocated about KGS 140 million (USD 2 million) to schools for the purchase of food only. Analysis of the schoolchildren's nutritional intake showed that younger school-aged children received only about 47 percent protein, 44 percent fat, 54 percent of essential vitamins and 71 percent of minerals necessary for healthy nutrition. Carbohydrate intake was approximately 81 percent, mainly from simple carbohydrates.

In response to these findings, the Government of Kyrgyzstan appealed to WFP for assistance in implementing a school feeding programme to ensure balanced nutrition for schoolchildren. WFP and its technical partner organization, SIFI, proposed a pilot project to improve school meals by contracting with an external organization to provide them. It was proposed to ask parents to cofinance the new menu, as the amount allocated in the city budget was not enough.

School No 64 in Bishkek was chosen because it is the largest primary school, with many children from disadvantaged and/or immigrant families. The project aimed to optimize the subcontracting model, encourage parents to cofinance the school feeding voluntarily, and develop recommendations on improving the school feeding process. The project activities included improving infrastructure for electricity, water and kitchen waste disposal; modernizing equipment in the canteens; capacity building for canteen staff, including an experience-sharing trip to the Russian Federation; and optimizing school menus for primary schoolchildren.

Funding and technical assistance:

SIFI specialists assessed the current state of the school canteen, developed technological recovery plans and retrofitted the dining room. Local laws and regulations relating to the outsourcing approach were analysed, and a package of required documents was developed. SIFI also conducted trainings for cooks and kitchen staff on the use of new equipment, sanitary and hygienic methods, preparation of school meals, and new technologies for preserving vitamins. WFP renovated the school kitchen with technical assistance from SIFI.

The cost of the pilot project was USD 84 000.

Stakeholders and coordination:

The project was launched by WFP with the technical support of SIFI and supported by the Ministry of Education and Science of the Kyrgyz Republic, the Bishkek city administration, the Bishkek Department of Education, and the State Centre of Sanitary and Epidemiological Supervision of Bishkek. City officials and school administrators were responsible for updating infrastructure and retrofitting the canteen. WFP procured all the necessary equipment for the canteen, while SIFI provided technical support and capacity development.

Addressing food security and nutrition issues:

SIFI developed two menu pricing options, at KGS 24 (USD 0.35) and KGS 34 (USD 0.50), with parental contributions of KGS 10 (USD 0.15) and KGS 20 (USD 0.29), respectively. The options were presented to parents and to Bishkek city authorities. The parents chose the option with the KGS 10 contribution.

The canteen was renovated and fully equipped with modern equipment and service catering. The kitchen staff went on a four-day training to learn how to prepare school meals (including sanitation methods and modern cooking technology with low fat content). Employees learned to use the new equipment and prepare nutritious meals that the children enjoyed.

The city administration issued a recommendation on changes to the legislation and tender documents concerning relations with outsourcing companies, in order to ensure the quality of the services provided.

Municipal authorities were asked to subsidize the difference in cost between the two menus, as the second one was more nutritious; this proposal is under consideration at the moment.

Elements essential to the viability of this practice:

Cooperation between local authorities and outsourcing companies;

- Funding from local authorities, with additional parental contribution, and the presence of a transparent mechanism to raise additional funds;
- Cooperation between schools and parents, informing them of the importance of nutritious food in child development and engaging them in school feeding programme management;
- Spreading knowledge of the programme's success to other schools, including the importance of having a social protection policy and of receiving additional funding from the municipal budget.

Impact on national policy and people's lives:

More than 1 200 students in the pilot elementary schools enjoyed varied, balanced and safe meals organized by a new model of outsourcing and parent participation.

Due to the optimization and diversification of the school menu, nutrient intake in primary schoolchildren increased by an average of 20 percent, vitamin consumption by 40 percent, and mineral consumption by 25 percent.

Municipal partners were given recommendations to improve municipal legislation and other documentation which formalizes the relationship between the city administration and outsourcing companies.

Key lessons:

The introduction of new approaches to the organization of school nutrition and modern technology helps to improve school meals.

Parents are willing to cofinance the programme, as the positive effects are obvious.

The school administration should take an active role in the search for resources for the renovation of the school canteen, and should be ready to involve parents in the school feeding programme and request that they provide additional funding.

A clear delineation of the responsibilities, with documentation, of the parties involved (city administration, school administration, development partners, parents) can greatly facilitate the process of project implementation.

The initial involvement of national and municipal authorities will allow them to transfer ownership of the process in the future.

CASE STUDY 8: IMPROVED NUTRITION IN THE MUNICIPALITY OF PREVERENGES, SWITZERLAND

Author:

Anna Perret, associate partner, REDD Programme

Time period and scope:

Switzerland, Preverenges (5 000 inhabitants), local level, 2016

Implementers:

Municipality of Preverenges, REDD Programme

Objectives and approaches:

The aim of the project was to encourage the development and sustainability of the local economy by strengthening the alternative food system in Preverenges.

During 2017 and 2018 six visits were organized to the following local producers: a biodynamic winegrower; a fruit producer; a village bakery; an organic vegetable producer who uses greenhouses; a volunteer-run village shop that only sells local products; and vegetable producers who use direct sales channels. These activities included company presentations, conversations with the owners and, of course, a final tasting. The idea was to show people the opportunity that existed to sell high-quality food produced in the local market using alternative sales channels to supermarkets. Buying food and food products in local companies supports the local economy.

The project aimed to change consumer behaviour in different ways. For example, educational materials were developed for schoolteachers emphasizing the influence of different models on the environment, health, local economy, and so on. The teachers connected the discussion in their classrooms with activities in the school garden and visits to local producers. This training encouraged children to choose healthy foods for themselves, their community and the planet.

Educational events were organized as well, including an evening at the youth centre where teams of teenagers were asked to answer various questions with the help of nutrition experts. Also, the creation of a public garden in the centre of the village on a plot of public land allowed people to collectively grow organic vegetables and fruit.

To improve the quality of food products available in schools, a two-week free distribution of local apples was organized. The event included a leaflet explaining the advantages of eating apples for nutrition and health. The apples distributed to children were local organic apples that did not contain pesticide residue.

Funding and technical assistance:

The project was funded by the Municipality of Preverenges. Technical assistance was provided by REDD.

Stakeholders and coordination:

The stakeholders represented both the private and public sectors. The local companies invited schoolchildren to visit their businesses within the course on sustainable food systems. The state sector was represented by schools and the youth centre.

REDD was authorized by the municipality to organize and conduct visits to local companies, and to develop the educational materials in collaboration with the teachers. The youth centre organized an event with the representatives of REDD acting as experts. REDD helped the municipality to find local apple producers who were ready to deliver organic apples to schools. The municipality ordered the apples and organized a two-week apple distribution campaign in the schools.

Addressing food security and nutrition issues:

Strengthening alternative food systems allows agribusinesses to keep other outlets for local products, which is essential for sustainable food systems. Indeed, "a variety of food systems and modes of production and supply can help to ensure food safety, and should be recognized and supported by proper regulation" (Fournier and Tuzard, 2014).

Elements essential to the viability of this practice:

For the sustainable development of alternative food systems it is important to educate consumers (children, adolescents and adults) to change their behaviour and to create strong demand for local products. All local actors — the municipality, food manufacturers, teachers, associations, and so on — must be involved as well.

Specifically, the following elements are needed:

- *Engagement of municipality members*, who believe in and defend the idea of alternative food systems that can contribute to local and global sustainable food systems;
- *Support*, including financial, from the municipality to carry out activities in the school and in the village;
- *Communication*, using local companies and associations who are ready to participate in various promotions and want to discuss their work with the public;
- *Education*, with teachers who are interested in discussing sustainable food systems and willing to work with students in the school garden.

Impact on national policy and people's lives:

Preverenges' population and local actors were very excited about the project.

The visits gave local producers the opportunity to interact with potential customers; this had a positive effect on customer loyalty and increased sales. Meeting with local farmers, bakers or winemakers, and actually learning about their concerns and life experience, helped change the behaviour of consumers and ultimately strengthened sustainable food systems.

The results of the online survey showed a high degree of satisfaction of the population, as well as an increased desire to buy more local products and take part in activities for the development of sustainable food systems.

There are plans to repeat this project in two other municipalities in Switzerland. If a sufficient number of municipalities become interested and work to strengthen their alternative food systems, this could affect national policy in the future.

Key lessons:

Some participants were apprehensive about the project. For example, the initial contact with the person in charge of the youth centre was not fruitful, as she did not understand REDD's interest in food-related activities and was not open to further discussion with teenagers. A meeting was then organized with representatives of REDD in order to better explain the purpose and objectives of the project, with the municipality also giving a strong signal that the issue should be taken seriously. Afterwards the youth centre began gradually changing the selection of snacks and drinks available for teens, and organized the food event with the teams of teenagers answering nutrition questions.

The lesson to be learned from this example is that participants may be reluctant to change and may not be engaged. It is important to carefully consider how to address the key stakeholders and how to submit the proposals accordingly.

CASE STUDY 9: MAPPING SUITABLE SOILS FOR ORGANIC FARMING IN CENTRAL ASIA

Author:

Igor Hadzhamberdiev, coordinator of the anti-toxic "Water, pollution, health" network in Central Asia

Time period and scope:

Kyrgyzstan and part of Uzbekistan, Fergana Valley, subregional level, 2014–2016

Implementers:

"Water, pollution and health" network

Objectives and approaches:

This project aimed at the development of materials (tables and charts) to provide information about the presence of toxic substances in the soil, water, vegetables, meat and milk, for use by farmers who sell their own products for export. It also aimed to increase awareness of the nature of certain threats to organic crops.

The "Water, pollution and health" network conducted a study of pollutants in the soil and water. Maps were then developed on the basis of this analysis to enable local authorities and village authorities to explain the serious risks of using obsolete pesticides and the formation of toxic waste, thus contributing to improved soil, pasture and irrigation policies focused on the safety of human health and the environment.

Funding and technical assistance:

Funding was provided by agribusinesses, with periodic funding from local state administrations.

Stakeholders and coordination:

Volunteers, businesses and local governors.

Addressing food security and nutrition issues:

The Fergana Valley (in Kyrgyzstan and Uzbekistan) is the region with the richest soil in Central Asia. There are many opportunities for small and large businesses to develop and export agricultural products. Dozens of species of fruit and vegetables can be grown organically in the valley without the use of mineral fertilizers.

The project helped to inform local farmers and authorities about the negative impact of pesticides and contaminants that remain in the soil. The joint work of NGOs and local authorities also encouraged the promotion of policies for the environmentally safe use of soils, pastures and irrigation that are beneficial to people's health, with the added benefits of reduced poverty and increased economic growth in Kyrgyzstan.

Elements essential to the viability of this practice:

- For social sustainability: involvement from women's organizations (as most of the men work in the Russian Federation), the leader of the Islamic Group, and the water users association;
- For economic stability: involvement from private business and market and transport groups;
- For environmental sustainability: involvement from hunters, beekeepers, craftsmen, etc.

Impact on national policy and people's lives:

The soil maps allow farmers to locate certified organic land.

Ararat Region, Armenia - First graders having lunch in the canteen of an FAO beneficiary school of a food security and nutrition project.

Nutrition programmes and school feeding, related to the agricultural sector

CASE STUDY 1: NUTRITION STANDARDS IN KINDERGARTENS AND PRIMARY SCHOOLS IN NORTH MACEDONIA

Author:

Igor Spiroski, Doctor of Medical Sciences, Head of the Department of Physiology and Nutrition Monitoring, Institute of Public Health of the Republic of North Macedonia

Time period and scope:

North Macedonia, national level, 2014

Implementers:

Ministry of Social Policy, Ministry of Education and Ministry of Health of the Republic of North Macedonia

Objectives and approaches:

In recent years in North Macedonia, a few important documents and legal provisions concerning food suppliers and nutrition were adopted. For the first time, the Ministry of Health and Institute of Public Health prepared and adopted country-wide guidelines on nutrition. The Ministry of Social Policy in cooperation with the Ministry of Health adopted a resolution establishing nutrition standards in kindergartens. Similarly, the Ministry of Education in collaboration with the Ministry of Health adopted a resolution for primary school-aged children in 2014. A comprehensive media campaign aimed at raising public awareness of the importance of healthy eating and a healthy lifestyle in the prevention of early onset of non-communicable diseases was also launched.

Funding and technical assistance:

The new regulations were not accompanied by any specific financing. The amount of food subsidies allocated by the ministries to kindergartens and primary schools has not changed. The processes was led and coordinated by the ministries and government institutions, with the inclusion of experts from relevant national institutions.

Stakeholders and coordination:

The nutrition standards were developed by a working group consisting of representatives of the Ministry of Health (Public Health Institute), the Food and Veterinary Agency, the Ministry of Education, the Ministry of Social Policy and the National Inspection Council. In addition, an Intersectoral Commission for the monitoring and evaluation of the programme was created.

Addressing food security and nutrition issues:

Having a national programme of healthy nutrition for children is one step towards solving the problems associated with child malnutrition. Data collected by a supervisory childhood obesity initiative show that the prevalence of obesity among schoolchildren in North Macedonia is growing, so the process is just one part of the complex puzzle of food policy to be implemented.

Elements essential to the viability of this practice:

The country should have an integrated food policy along with nutrition standards for food in kindergartens and primary schoolchildren. An Action Plan for Food and Nutrition Policy is under review, but the Government needs to develop a more comprehensive approach to creating a favourable environment for the supply of healthy school food. Implementation of the plan requires commitment and resources to carry out the entire process. The adoption of child nutrition standards will be successful if they become part of the country's policy implementation process in the area of food and nutrition.

Impact on national policy and people's lives:

The process of evaluating the influence of the introduction of nutrition standards continues. The main indicators are: 1) the existence of by-laws regulating the content of macro- and micronutrients in the diet of schoolchildren; and 2) the nutritional status of children covered by these rules.

Key lessons:

The main obstacle to the success of the national programme was communicating with food suppliers. Kindergartens already have their own kitchens, so the best results there were achieved by merely changing the recipes. In the primary schools on the other hand, the dishes were prepared by catering companies that had neither sufficient knowledge nor the desire to improve their recipes. Another obstacle was the division of responsibilities between central and local governments to foster a market for purchasing school food. The current process should include consultations with food suppliers and representatives of the Ministry of Health, Education and Agriculture, as well as contacts with some local authorities.

CASE STUDY 2: ATTITUDES AND BEHAVIOURS TOWARD FOOD WASTE IN ITALY

Authors:

Giuseppe Ruocco, General Director, Denise Giacomini, Doctor, and Helena Currano, Nutritionist, DGISAN (Ministry of Health of Italy); Elena Sturchio, National Institute for Insurance against Accidents at Work (INAIL/DIT)

Time period and scope:

Italy, national level, 2016–2017

Implementers:

Ministry of Health of Italy, INAIL/DIT

Objectives and approaches:

Reducing the amount of food waste is a key element in the development of global food production systems that are ecologically and ethically sustainable. Studying the causes of food waste at the household level allows us to influence people's behaviour in order to reduce food waste and develop preventive measures among students, in compliance with nutrition and health regulations.

The teaching methodology in this project applied a "pushing" model (i.e. "pointing to the idea") to encourage proper behaviour. The basic premise is that people often behave in an unpredictable way, and not necessarily in their own interest. Using behavioural ideas as a prognostic factor of human behavioural reactions allows for behaviour modification by altering the "architectural choice" of individuals. These changes can encourage people to make better decisions about health and nutrition that are in their own interests.

The "Food waste: the attitudes and behaviour of consumers" project consisted of two phases: 1) providing scientific information on the food waste occurring at all stages of food production; and 2) using the push model to correct food waste behaviours and increase compliance with relevant food regulations among schoolchildren, youth and families.

Funding and technical assistance:

Funding came from the Ministry of Health, with technical assistance and expertise from INAIL/DIT involving the CRF Research Organization and three Italian high schools.

Stakeholders and coordination:

INAIL/DIT and DGISAN carried out the project, with the participation of CRF and three Italian high schools.

Addressing food security and nutrition issues:

Three high schools were selected from the Lazio region with different socio-economic status and areas of academic focus: a private art school, located in the centre of Rome; a high school for film students, located some distance from the centre; and a biotechnology school located in the province of Rome. The effect of location and socio-economic status on habits regarding food waste (purchases, leftovers, food storage), as well as the perception of individual responsibility for food waste, was studied.

Questionnaires were administered to adolescents and their families to obtain data on the habits that give rise to the creation of food waste as well as the perception of responsibility for these habits. A total of 250 students were educated on the impact of food waste on the environment and the loss of resources.

Students, teachers and experts identified the objectives, strategies and methods for the development of multimedia products to encourage correct behaviour in relation to food waste. Pilot schools used an Internet model of education on food waste, which will be used in other schools.

Elements essential to the viability of this practice:

Food waste occurs at all stages of production, from harvest to processing, distribution and consumption in households. In developed countries, consumers are one of the largest sources of food waste. A clear understanding of the factors influencing food-related waste perception and consumer behaviour will significantly reduce waste production.

Impact on national policy and people's lives:

Effective communication tools were designed to encourage consumers to adopt behaviours that reduce food waste, using two push models: environmental and motivational/emotional.

The environmental push model involved creating or designating areas at school where students could eat food prepared at home. The lack of these areas encourages students to buy from the school cafeteria or from vending machines, often acquiring products that are unhealthy and not environmentally friendly.

The motivational/emotional push model involved holding meetings with students to inspire them to change their lives and behaviours through their own abilities.

The results were presented to students at a public presentation in which they were the main protagonists.

Key lessons:

There is not yet any objective data on the impact of the "push" model. However, a qualitative analysis showed that the students were very satisfied and motivated by both models. Interactive participation of teachers, experts, students and their families in the dialogue on food waste reduction can improve the understanding of the importance of this issue for health and the environment.

After the trainings and meetings, students produced interactive presentations or videos on social networks for their classmates and other youth in order to disseminate best practices, which included cooking recipes using leftover food, amusing street interviews, a photo exhibition, the creation of a learning unit on food waste, and a script for a short film. This active involvement of young people in the creation of media products should be adopted as a standard methodology to stimulate their innate ability to innovate.

CASE STUDY 3: "MY THRIVING ECONOMY" IN KYRGYZSTAN

Authors:

Nadyrbek Kachkynbaev and Meerim Azimzhanova, regional specialists of the Rural Advisory Service in Jalal-Abad, Social Fund

Time period and scope:

Covered 34 schools and 24 rural districts in seven oblasts of Kyrgyzstan, 2014–2016

Implementers:

The Public Fund of the Jalal-Abad Rural Advisory Service implemented the project in cooperation with UN Women

Objectives and approaches:

The "My thriving economy" (MTE) course taught 9th-grade students important agricultural skills using 100 m2 garden plots. The small plots can be implemented with only a small amount of investments, and can be used to improve family nutrition.

The goal was to teach senior high school students skills to become successful farmers, thus leveraging their family land resources and avoiding the need to leave their families for low-paying jobs in the city. In addition, students would emerge from the course with a good understanding of how the market economy works and how to be responsible citizens.

The pupils of 34 schools took the MTE course and then practiced in their home gardens.

Funding and technical assistance:

These were provided by UN Women, the UN Peacebuilding Fund and the Government of Finland.

Stakeholders and coordination:

During the regional "Days of the MTE" event, the results of the students' efforts in their small plots were presented to heads and specialists of rural districts, the district administration, the Department of Agriculture and Department of Education, specialists of the Ministry of Labour and Social Development and Ministry of Education, as well as the public and the media.

Addressing food security and nutrition issues:

The MTE training course involved 4 984 students. Of these, 3 153 (63 percent) worked in their gardens using locally sourced compost, quality seeds, mini-greenhouses and simple solar dryers. Application of compost and quality seeds on the 100 m2 plots increased vegetable

and potato yields by 1.5–2.0 times compared with plots cultivated using conventional techniques. The harvest produced juicy vegetables that were less prone to disease and pests.

Elements essential to the viability of this practice:

The practice requires the interest and active participation of principals, teachers and parents, as well as heads of rural districts and heads of departments of education. The Ministry of Education and Advisory Service must also provide support in implementing and disseminating the MTE curriculum and in addressing other technical and administrative issues that may arise.

Impact on national policy and people's lives:

For the first time, mini-greenhouses with an area of 30–40 m2 were implemented in seven mountain villages located about 2 000 metres above sea level, which allowed planting to begin earlier in the season. For example, cucumbers aren't normally planted in open fields until May, but those planted earlier in the greenhouses were already ripe by this time. Teachers, pupils and parents were thus able to improve their diet. Moreover, the students earned between KGS 1 480 and KGS 15 534 (USD 21 to USD 222) from each plot.

Sardarbek kyzy Alina, a 10th-grade student at Nyman high school in Nookat district, shared her experience: "My mother and brother work in [the Russian Federation]. And until now, I had in mind that at the end of high school I would also go to [the Russian Federation]. But the MTE course changed me. In practice, I found that here in my village I can raise money for my livelihood". Other schools reported good experiences with introducing the MTE course into the curriculum; hence the course could easily be adapted and applied elsewhere.

The following indicators were used to evaluate the impact: the number of students applying the new practices in their gardens; a comparison of the new harvest with that using the traditional local cultivation techniques; and the change in outlook among students regarding their future (i.e. seeing opportunities in their village as a better alternative to labour migration to the Russian Federation).

The results showed that girls and boys had equal access to the MTE. In addition to learning to grow vegetables, they received basic entrepreneurial training in planning investments and accounting. Moreover, they began to more actively search for creative labour migration alternatives.

Key lessons:

The experience of the MTE course in schools could easily be expanded to other regions of the country. The level of implementation depends on the interest and activity of the teachers, the support of directors and head teachers, and the motivation of students. It is also important for students and parents to share their knowledge and experience with each other (both what the students learn in school and what their parents may already know), as this is the easiest way to spread new technology and skills throughout the community.

CASE STUDY 4: SUSTAINABLE SCHOOL MEALS IN ARMENIA

Author:

Naira Harutyuyan, PhD, Lecturer, Haybusak Yerevan University, Yerevan, Armenia

Time period and scope:

Armenia, regional level (Syunik, Vayots Dzor and Ararat regions), since 2010; national level planned for 2030

Implementers:

The Ministry of Education and Science of the Republic of Armenia, SIFI, Russian Federation, WFP

Objectives and approaches:

A sustainable school feeding programme was implemented with the following objectives: 1) Ensure balanced nutrition for primary schoolchildren in the most vulnerable and food-insecure regions of Armenia; 2) Improve local procurement at the national level; 3) Improve data collection on attendance and number of students; and 4) Support the development of national policies and the inclusion of school feeding programmes in national budgets.

Funding and technical assistance:

As of September 2017, 96 percent of the programme budget was confirmed, with the following breakdown: Russian Federation, USD 28.5 million (94 percent of budget); Armenian Government, USD 180 000 (0.6 percent); multilateral donor, USD 100 000 (0.3 percent); other sources, USD 240 000 (0.7 percent).

WFP and SIFI provided operational and technical assistance to the Government in laying the foundations for a stable domestic national school feeding programme.

Stakeholders and coordination:

Ministry of Education; local authorities; school administration; WFP; Russian Federation, which has provided significant financial support; local food suppliers; local employees and parents.

Addressing food security and nutrition issues:

After the global crisis of 2008, GDP in Armenia fell and food and fuel prices rose. This had a great impact on families: 50 percent were forced to buy cheap products and reduce food intake, 25 percent were forced to buy food on credit and ask for help from relatives, and 5 percent had to limit the food intake of adult members to allow small children to eat. In addition, more than 10 percent of students began to miss school because they needed to work at home and help their parents.

To address this, a WFP pilot project was created focusing on school food and nutrition. Today, the resulting national school feeding programme covers the *marzes* (regions) of Tavush, Vayots Dzor, Syunik and Ararat, providing school meals to 29 000 primary schoolchildren (about a third of the total number of primary school pupils in the country), with an estimated value of AMD 140 per pupil per day (or 280 kcal per day).

The programme is expected to be expanded to the national level, which will help more children realize their right to food, health and education. This contributes directly to the achievement of at least nine of the SDGs, as well as the priorities of Armenia's Development Strategy for 2014–2025.

Elements essential to the viability of this practice:

The pilot project began with limited geographical scope (three *marzes* out of ten) allowing for the possibility of expansion once the project was successful, and enhancing the government's capacity for further management.

The project will be implemented by WFP until 2021 with the participation of government and limited support from external donors. In the long term, the plan is to run the project using only state budget resources and internal donors.

The political commitment of the Government is needed to ensure the successful implementation and sustainability of the programme. In addition, national school nutrition policy must take into account national food security priorities and budget allocations.

The involvement of local and national authorities, principals, parents and farmers led to greater contributions from the community in terms of money, food and volunteer work, and ultimately better implementation of the school feeding programme. The Armenian experience in scaling up to regional, national and global levels can be useful for other countries, especially those of the former Soviet Union with similar backgrounds and problems.

Impact on national policy and people's lives:

On 27 December 2012, the Armenian Government adopted a programme of sustainable school feeding (Government Resolution dated 27 December 2012 No 52), developed by the Ministry of Education with the support of Russian experts. For the first time in modern history, the Government budgeted about USD 3 million to fund school feeding programmes from 2013 to 2016. Each child was allocated AMD 140 per day, of which AMD 120 went towards food, AMD 10 for paying kitchen staff, and AMD 10 for utility and transport costs and maintaining hygienic standards.

Since December 2013 there is a working Interagency Committee on School Feeding, consisting of representatives of the Ministries of Education, Health and Agriculture, and Territorial Management, as well as WFP and SIFI.

In September 2017 WFP handed over to the Armenian Government the management of the school feeding programmes in four *marzes* (Syunik, Vayots Dzor, Ararat and Tavush), in which about 29 000 schoolchildren receive school meals.

The school feeding programmes have created jobs for local residents, such as cooks, chefs and farmers, as well as creating a network of school canteens.

School directors have advocated for the programme by creating school gardens to grow fresh fruits and vegetables. Some schools are planning to build greenhouses to supply fresh vegetables in their school canteens.

Key lessons:

The school feeding programme succeeded in developing basic strategy/policy documents and in upgrading school feeding infrastructure using modern food production and delivery technology. A key condition for the implementation of the programme in schools was the availability of kitchens that were in good condition and in compliance with sanitary regulations.

Rules and/or guidance on procurement practices can be helpful in encouraging participation from local small-scale farmers.

Although the Interagency Committee on School Feeding contributed to the development of the National Strategy for school feeding, it did not participate in the practical arrangements for school meals, which limited its ability to monitor the programme.

It is important to have a long-term strategy for transferring the programme implementation and monitoring from the international organization-led model to one that is government-designed.

A phased approach can be an effective strategy for scaling up the initiative to the national level. Transient/pilot projects can help identify the advantages and disadvantages of preliminary plans, allowing officials to make adjustments to improve the sustainability of programme operations in the long run. The projects' success reinforces the political will to adopt the programmes and find ways to finance the school feeding system operations. Still, it is important to gather expertise and have funding from different sources to reduce the risk of failure at the beginning of the project.

CASE STUDY 5: NATIONAL "SCHOOL MILK" PROGRAMME IN THE RUSSIAN FEDERATION

Author:

Olga Panova, Organizing Committee of the national "School Milk" programme in the Russian Federation

Time period and scope:

Russian Federation, 49 regions, since 2005

Implementers:

Ministries of Agriculture, Health and Education; School Milk Organizing Committee

Objectives and approaches:

The national School Milk programme aims to improve the health of the younger generation and foster a conscious attitude towards a healthy lifestyle. Under the programme framework, children receive a free 200 g serving of milk in aseptic individual packaging.

Calcium consumption in the Russian Federation is at about 70 percent of the required level, or 236 kg of milk per person per year. This deficiency has a strong effect on children's health and leads to stunted growth, disruption of the formation of bones and teeth, increased vascular bleeding, excessive nervous irritability, and heart muscle malfunction. Moreover, calcium deficiency during childhood leads to permanent deficiencies during adulthood. By drinking 200 ml of milk — the main natural source of calcium — children receive up to 40 percent of their daily calcium, 13 percent of protein and fat, and eight of ten amino acids that are essential for growth and healthy childhood development.

The "School Milk" label is a guarantee of product quality and safety; it is specifically designed for schools and not sold in stores. The product is safe and ready to use, thanks to the use of ultra-pasteurization technology that preserves taste and freshness and does not require refrigeration.

Funding and technical assistance:

The School Milk programme is financed by regional and municipal entities of the Russian Federation according to Federal Law No131-FZ "On general principles of local self-government in the Russian Federation."

Stakeholders and coordination:

The programme was launched by the participating Federal subjects (e.g. republics, federal cities, etc.) of the Russian Federation and the School Milk Organizing Committee. Funding is provided using regional and municipal funds. The budget is administered by both the education authorities and the Ministries of Agriculture of the respective Federal subjects.

The Ministries of Agriculture support the milk production in accordance with the approved subsidy, with priority given to local producers. Rospotrebnadzor is responsible for product quality and ensuring the delivery of the finished product from the production site to schools.

Education authorities of the Russian Federation determine the amount of milk needed to supply students during the academic year (200 school days). They also negotiate contracts with the milk suppliers and handle accounting and consumption records.

The Ministry of Education and the Ministry of Health, together with the School Milk Organizing Committee, conduct educational training sessions to explain to students the importance of regular milk consumption and maintaining a healthy diet and lifestyle. They also monitor the incidence of eating disorders, diet-related diseases and musculoskeletal pathologies among the students. The Ministry of Health carries out quality control semi-annually.

Educational institutions, together with the School Milk Organizing Committee, survey parents' opinion about the quality and usefulness of the programme. Teachers, children and their parents also participate in events organized under the programme.

The School Milk Organizing Committee provides information and organizational support, including developing and implementing educational programmes for children, teachers and parents, and creating visual aids and training materials.

Addressing food security and nutrition issues:

In the Russian Federation, 2018–2027 was declared the Decade of Childhood and thus the Government made children's health one of its priorities. In this context, the School Milk programme is a good tool for promoting healthy nutrition. The programme is part of the efforts towards the development of domestic food aid and provides for improved nutrition for certain segments of the population, including children of preschool and school age, while indirectly providing state support to the agricultural sector.

Thanks to the implementation of the programme, the number of healthy children has increased and the level of disease among children has decreased. In addition, both the share of domestic producers and the consumption of dairy products have increased.

Elements essential to the viability of this practice:

Granting the programme federal status allowed it to receive partial funding from the federal budget in order to serve all Federal subjects of the Russian Federation.

It is important to designate a person responsible for programme implementation in each Federal subject for the purpose of effective interagency cooperation and monitoring. In those regions where the programme is under the direct control of the Federal subject's Head, the milk has sold particularly well, with considerably improved health effects seen among pupils. Further, it has contributed to the development of the dairy industry in the region.

Impact on national policy and people's lives:

The School Milk programme has 1) improved the health of the younger generation and fostered a healthy attitude towards nutrition; 2) renewed interest in milk consumption among the population, providing stable sales for farmers; and 3) proved to be a good tool for supporting agriculture and promoting technological upgrading of production methods.

Through the implementation of the programme, primary schoolchildren have become loyal consumers of milk and dairy products. In the regions implementing the programme, milk production indicators have been increasing as well.

Today, there are successful examples of the programme in the following Federal subjects of the Russian Federation: Udmurtia, Tatarstan, Kalmykia, Belgorod, Voronezh, Kaluga, Tambov, Leningrad, Rostov, Magadan, Amur and Krasnodar, among others.

Key lessons:

An example of a successful approach to implementing the programme can be seen in the Republic of Udmurtia. Here, the Ministry of Education and Science is responsible for programme implementation, under the control of the Head of the Republic.

The programme was launched in 2005 with 10 000 students. By 2017, 54 392 students from grades 1 to 5 in five cities were being given a daily allotment of UHT milk in individual aseptic packaging. As part of the programme, the local milk factory received a complete technical upgrade. Milk consumption per capita grew to a rate 13 percent higher than the national average. As children got accustomed to drinking milk, they also became loyal customers of all School Milk company products. Consumption of the "Toptyzhka" brand of dairy products (part of the School Milk company), for instance, has been growing annually by 15 percent.

The programme is guaranteed to develop and bring positive results, both for children and society as a whole, and to contribute to the development of the agro-industrial complex, provided that it has 1) a comprehensive approach to its implementation, and 2) stable funding.

The biggest challenge for the region is the lack of regional and municipal financing. Giving the programme federal status will provide it with cofinancing from the federal budget, as well as provide an effective system of traceability of school milk in terms of its origin, safety and quality.

CASE STUDY 6: "SCHOOLS AND PRESCHOOLS, FRIENDLY NUTRITION" INITIATIVE IN THE REPUBLIC OF SRPSKA

Authors:

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Natasha Tsiyanovich, PhD, Head of Preschool Education, Ministry of Education and Culture of the Republic of Srpska;

Radmila Kočić, Deputy Minister of Education and Culture of the Republic of Srpska, Ministry of Education and Culture of the Republic of Srpska

Time period and scope:

Bosnia and Herzegovina, Republic of Srpska, five pilot preschools in five regions, since 2014

Implementers:

The "Schools and preschools, friendly nutrition" (NFSPI) initiative is supported by the Ministry of Health and Social Welfare of the Government of the Republic of Srpska, the Ministry of Education and Culture of the Government, and the UNICEF office in Bosnia and Herzegovina.

Objectives and approaches:

Following a proposal of the Ministry of Health and Social Welfare, in May 2011 the Government of the Republic of Srpska adopted a policy to promote early childhood development through a balanced diet, prevention of nutritional deficiencies, and combating diet-related diseases.

The programme's goal was to create a network of preschool facilities to improve nutrition and physical activity for children through the involvement of parents and professional staff (educators, teachers, cooks) in the implementation of measures to prevent obesity and encourage a healthy lifestyle.

In the first stage, preschool nutrition policies and action plans were developed. Educational materials on children's health were prepared for teachers, parents, cooks, and the children themselves, with more than 30 workshops held for all target groups.

In the second phase, seasonal cookbooks with nutrition standards were designed, as well as tools for monitoring and evaluation, including the creation of a state body for evaluation and certification of preschool institutions.

In the third stage, all the pilot preschools were evaluated by the state evaluating body and nominated for certification. In the fourth phase, four additional preschools will be assessed and certified.

Funding and technical assistance:

Financial support at all stages of the NFSPI initiative is provided by UNICEF in Bosnia and Herzegovina.

Technical and professional support is provided by staff of the Ministry of Health and Social Welfare, the Ministry of Education and Culture, the Institute of Public Health, and preschool institutions involved in NFSPI.

Stakeholders and coordination:

The Ministry of Health and Social Welfare, the Ministry of Education and Culture, and the Institute of Public Health are the main stakeholders.

In September 2012 the Government of the Republic of Srpska adopted a policy to improve public health through 2020, which allowed for the development and implementation of nutrition actions in cooperation with governmental institutions, non-governmental and charitable organizations, private foundations and communities.

Addressing food security and nutrition issues:

NFSPI implementation has led to the adoption of the Regulation on Conditions and Methods of Providing Food, Care, Preventative Health Care and Social Protection for Preschool Children.

Elements essential to the viability of this practice:

- Regulation on Conditions and Methods of Providing Food, Care, Preventative Health Care and Social Protection for Preschool Children (adopted in 2016);
- Promotional materials for children and their parents: for example, a book and poster with the slogan "Choose the right, grow up healthy!";
- Nutrition standards, seasonal cookbooks ("Four Seasons") and the "How to become a school/preschool, friendly to nutrition" guide, which have facilitated the sustainable implementation NFSPI.

Impact on national policy and people's lives:

Preschools use the material developed to monitor the implementation of programme goals. A cross-sectoral body uses these tools as well to evaluate progress in the preschools.

This initiative contributes to policy objectives on improving nutrition and prevention of diet-related diseases in children under five years, through: 1) encouraging a healthy lifestyle in children through better nutrition and physical activity; 2) prevention of non-infectious diseases; 3) reduction in minor mineral deficiencies; 4) elimination of foodborne diseases; and 5) adoption of the WHO growth standards for children under the age of five years.

Key lessons:

The NFSPI initiative has the potential to mobilize the preschool community to improve the nutrition and health of children under five years in the Republic of Srpska.

CASE STUDY 7: SCHOOL FOOD AND NUTRITION PROGRAMMES LINKED TO THE AGRICULTURAL SECTOR IN UKRAINE

Author:

Magali Herranz, programme management and resource mobilization specialist, FAO Regional Office for Europe and Central Asia

Time period and scope:

Ukraine, national level, since 2017

Implementers:

An SFN evaluation was prepared by the FAO Regional Office for Europe and Central Asia through consultation with the Ukrainian Ministry of Agriculture, Ministry of Health, Ministry of Education, Ministry of Economy, Ministry of Regional Development, National Food Agency, research institutes and NGOs.

Objectives and approaches:

The evaluation is being carried out to determine the current status and needs of SFN programmes in Ukraine on the basis of 11 stability indicators, as defined in other related FAO activities in Latin America and the Caribbean and adapted to the context of Ukraine, namely:

1. Participation of all stakeholders in the school feeding programme;
2. Interdisciplinary and interinstitutional interaction;
3. Long-term support from government budgets;
4. Consistency of the school feeding programme with the real-life conditions in the country;
5. Clear legal framework governing the implementation and monitoring of the school feeding programme;
6. Committees that determine funding and mobilize human resources to implement school feeding activities;
7. Provision of appropriate and healthy food to students;
8. Education on food security and the development of healthy eating habits;
9. Related infrastructure and equipment for storage, preparation and consumption of food in schools;
10. Communication with local markets and producers, especially family farms;
11. Diagnostics, monitoring and evaluation of the programme.

Funding and technical assistance:

The evaluation is being carried out within the framework of the FAO Project GCP/UKR/001/NOR, funded by the Government of Norway.

Stakeholders and coordination:

The evaluation is being conducted in coordination and cooperation with the central executive authorities of Ukraine, namely with the Ministry of Health, Ministry of Education, Ministry of Agrarian Policy and Food (through the State Service for Food Safety and Consumer Protection), Ministry of Economy, and Ministry of Regional Development. Some local education authorities and other members of the school community have made valuable contributions to the study as well.

Preliminary assessments indicate a lack of effective intersectoral interaction mechanisms and of a common policy integrating the various stakeholders in a collaborative and well-formulated plan of work.

Two actions are thus necessary: 1) establishment of an intersectoral coordinating body with representatives from central, regional and local authorities, NGOs, academia and civil society to guide policy and strategy development of school feeding programmes in the country; 2) strengthened coordination and mobilization of stakeholders in follow-up activities at national and local levels.

Addressing food security and nutrition issues:

The Ukrainian Government has declared its commitment to improving the health and nutrition of its population, endorsing the "United and comprehensive strategy and action plan for the development of agriculture and rural areas in Ukraine for 2015–2020". The action plan includes the Government's commitment to support and develop SFN programmes in the country.

The FAO Regional Office for Europe and Central Asia with the support of Norway is carrying out a project to support the Ministry of Agrarian Policy and Food in implementing the aforementioned strategy and examining the current status of SFN programmes in Ukraine with an eye towards sustainability. The results in the medium and long term will contribute to the sustainable development of SFN and of Ukrainian citizens.

Elements essential to the viability of this practice:

- Commitment and participation of all competent authorities in the design and implementation of SFN programmes at the national and local level;
- Local budget funding for SFN programmes;
- Awareness raising of stakeholders, including administration, school staff and parents;
- Changes in policy to test existing SFN programmes and adapt them to current conditions and needs.

Impact on national policy and people's lives:

Evaluation is ongoing and the recommendations proposed for strengthening SFN are yet to be approved and implemented in the country.

The main achievements thus far have been: a) institutionalization of the SFN programmes through the development and approval of a law on school meals; b) strengthening of the intersectoral mechanisms among interested parties at the national and local levels; c) increased coverage of the programme; d) increased budget for school meals; e) development of improved school menus; f) implementation of continuous training on food and nutrition and the creation of educational gardens and schoolyards; g) strengthening of community participation in the programme; and h) improvement of school infrastructure for school feeding.

Key lessons:

The growing interest of national authorities in school food and nutrition has been key. The Ministry of Agriculture organized the first SFN coordination meeting with other line ministries.

The lack of coordination and communication between the authorities and stakeholders, particularly at the national level, needs be addressed in the future. Local procurement system elements need detailed consideration before adopting follow-up phases.

CASE STUDY 8: SCHOOL MILK PROGRAMME IN TURKEY

Authors:

Burak Gyuresinli, Ministry of Food, Agriculture and Livestock, Turkey;

Seyit Sonuvar, veterinarian, Animal Husbandry Directorate General

Time period and scope:

Turkey, national level, since 2012

Implementers:

Seyit Sonuvar, veterinarian; Chagdash Gokhan Coseriu, engineer of agriculture; Ministry of Food, Agriculture and Livestock; Ministry of National Education of the Turkish Republic; National Milk Council

Objectives and approaches:

Implemented in 2012, the school milk programme distributes 200 ml packages of simple, deep-pasteurized milk for 6 million students in 32 000 schools (preschool and primary school), three days a week during the second semester of the school year. The goal is to develop milk-drinking habits among students aged 4 to 10 years old, to ensure healthy growth and development, and to contribute to a balanced diet. The various stages of production and distribution are monitored by provincial departments of the Ministry of Food, Agriculture and Livestock, in accordance with the Law on Public Procurement.

Milk delivered to the schools is registered in a school milk system that was developed by the Ministry of National Education. The system is available to all schools, and allows for tracking milk distribution status as well as providing coordination between the provincial departments of the relevant ministries.

Funding and technical assistance:

Funding for the programme is allocated under the overall budget of the Ministry of Food, Agriculture and Livestock.

Stakeholders and coordination:

The programme is conducted with the participation of the General Livestock Management Department under the Ministry of Food, Agriculture and Animal Husbandry; the General Directorate of Primary Education under the Ministry of National Education; the Institute of Public Health under the Ministry of Health; and the National Milk Council.

Coordination of all activities, ranging from milk delivery to payment, is carried out by the General Livestock Management Department.

Public information on the programme, including definition of the communication strategy and training for individuals and organizations involved, is implemented by the Ministry of Food, Agriculture and Livestock, the Ministry of National Education and the Ministry of Health, with the assistance of the National Milk Council. The provincial commission for school milk is responsible for additional advertising and training activities in the provinces.

Addressing food security and nutrition issues:

A healthy and balanced diet consists of four food groups: meat and meat products, milk and dairy products, fruits and vegetables, and breads and cereals. The second group includes milk, yogurt, cheese and powdered milk, and is an important source of protein, calcium, phosphorus, and vitamins B2 and B12. All age groups, especially adult women, children and youth, need to consume milk and dairy products daily.

It is important to encourage children and adolescents to develop daily milk-drinking habits, including the daily recommended amounts of the above nutrients, in order to protect them from osteoporosis in old age. Each age group should drink two glasses of milk (or the equivalent in other dairy products) daily.

Elements essential to the viability of this practice:

It is essential that the programme be adopted by all segments of society, including both consumers and producers. If the programme receives financing from the state budget, this will contribute to its sustainability.

Instilling in children the habit of drinking milk leads to an increase in milk consumption, thus contributing to growth in the industry and to overall socio-economic improvement.

Impact on national policy and people's lives:

For various reasons, the programme does not cover the entire school year, and therefore it has not been possible to conduct a qualitative study on the effects. However, given that milk production has increased on average by 5 percent each year, it is estimated that the milk produced is consumed.

Key lessons:

Negative: During the first year of implementation, the manufacturers of deep-pasteurized milk had great difficulty in meeting the milk production and distribution demands. Transportation was originally a big problem, because of the great number of schools and the geography of the country. However, the long shelf life of deep-pasteurized milk has helped solve this issue.

Initially, lactose intolerance was observed among students in some regions of the country where there had been no culture of milk consumption. Once the students became accustomed to drinking milk, the level of lactose intolerance fell to a significantly lower level.

The lack of a year-round supply of milk precludes the possibility of carrying out a comprehensive study to evaluate the change in milk consumption habits, as well as growth and weight gain in children.

Positive: In some parts of the country, students have indeed begun to drink more milk as a result of the programme. Milk producers have benefited from the increased demand for milk, including the creation of new jobs to distribute the milk to 32 000 schools.

CASE STUDY 9: SCHOOLYARD ECONOMY TO SUPPORT RURAL SCHOOL MEALS IN KYRGYZSTAN

Author:

Ayida Zhamangulova, Public Fund Manager, Agency for Development Initiatives

Time period and scope:

Kyrgyzstan, national level, 85 rural schools, since 2014

Implementers:

The Agency for Development Initiatives public fund is the implementing partner component of the schoolyard economy together with the Ministry of Education and Science, with financial support from WFP in Kyrgyzstan and the Russian Federation.

Objectives and approaches:

Piloting model schoolyard farms to support schools, and organizing hot meals for children.

The project consists of two components: the schoolyard economy (or schoolyard farm) and educational-experimental plots.

The schoolyard economy supports the cultivation of schoolyard farms. By producing and marketing agricultural and livestock products, these farms are able to organize hot meals in schools.

Educational-experimental plots in schools allow children to gain practical agricultural experience as part of their school curriculum. This component was launched in 2015 at the request of the schools.

Piloting of the schoolyard economy was conducted in 28 schools that were selected in cooperation with the Ministry of Education, Ministry of Health and Ministry of Agriculture of Kyrgyzstan. Schools were provided with agro-consultations to help them select the optimal type of agribusiness for their environment. The schools were also provided with technical and advisory assistance in organizing the schoolyard economy (administration) and cofinancing (depending on the number of malnourished children), as well as agrotechnical assistance.

The educational-experimental plots were tested in 57 schools. Schools were first given advising, technical assistance and microgrants (about USD 100 per school).

Based on these experiences, recommendations were presented to the Ministry of Education for the further development of the schoolyard economy.

Funding and technical assistance:

Financing is provided by the WFP programme "Optimizing school nutrition", a component of "Development and support schoolyard farms", funded by the Russian Federation.

Stakeholders and coordination:

The Ministry of Education and Science coordinates the implementation of school activities. The Ministry of Agriculture, Food Processing and Irrigation provides agricultural advisory services to help schools choose their agribusiness. The Ministry of Health provides technical assistance in matters of food security and healthy nutrition. The Ministry of Finance advises schools on farm accounting methods.

Addressing food security and nutrition issues:

Implementation of the project has shown that the schoolyard economy can be an important means of providing children with hot meals. The schoolyard farms provide schools with agricultural products at affordable prices. The income they earn from the sale of surplus allows them to purchase other needed products and to improve their school feeding infrastructure.

Supervised activities in agricultural production on the schoolyard farms contribute to the cultivation of safe products with minimal chemical additives. Moreover, the activities allow the school to diversify and enrich the children's menu options. In addition, schools have learned to use greenhouses to grow food in the winter.

Elements essential to the viability of this practice:

The success of the schoolyard economy depends on coordinated interaction of the school administration with partners. To this end, the schoolyard economy helps to improve communication between the school administration, local authorities and the parents' committee, and also encourages the involvement of the latter in the process of organizing hot meals.

Currently, a state school feeding programme is under development that would include schoolyard farms. However, it still requires further refinement and clarification of the issues of institutionalizing the farms as well as determining their interaction with schools and other local agricultural producers.

Impact on national policy and people's lives:

Piloting different models of schoolyard farms has shown how important they are in providing food for children, as well as giving them the opportunity to learn agricultural skills and practical lessons in biology and natural studies. According to the Ministry of Education, about 65 percent of Kyrgyz schools have land, which make them prime locations for implementing these farms.

Key lessons:

The yields obtained from schoolyard farms depend on weather conditions and the skills of the people cultivating them. School should critically examine their own opportunities and risks before implementing schoolyard farms.

CASE STUDY 10: REGIONAL CENTRE FOR AGRIBUSINESS EDUCATION, RUSSIAN FEDERATION

Author:

Vladimir Chernigov, SIFI, Russian Federation

Time period and scope:

Russian Federation, regional level, since 2012

Implementers:

The Regional Centre was founded by the district administration head, but is supervised by the Educational Department of Tambov region.

Objectives and approaches:

The Regional Centre for Agribusiness Education was created in 2012 in the village of Tatanovo, 20 km from the city of Tambov (about 480 km southeast of Moscow). The centre attracts children from Tatanovo and other nearby villages, due to its innovative teaching methods.

The Regional Centre offers training in agrotechnology and agribusiness as well as vocational programmes aimed at teaching students the skills necessary to work in agriculture. Students can pursue internships with leading agricultural enterprises of the region to learn such practices as greenhouse vegetable cultivation and cattle farming.

The facilities include a biotechnology laboratory, a centre of floristry and design, and a business incubator. Students can choose electives in areas such as landscape gardening and school forestry. The centre also conducts research in new methods of preservation, pickling and fermentation.

Funding and technical assistance:

The Regional Centre was established using federal grant programme funds obtained by the Educational Department of Tambov region. The centre's autonomy allows it to charge for the educational services that it provides; any profit is reinvested in the centre itself.

Stakeholders and coordination:

The Regional Centre has signed an agreement with Michurinsk State Agrarian University to provide scientific and methodological advisory services in all areas of agriculture to teachers, students and the local population. It also carries out research and development work in cooperation with Tambov State Technical University.

Since 2015, the centre is also implementing a project on vegetable crop breeding in conjunction with the SeDeck Company. The company provides different varieties of seeds for students to test as part of their cultivation activities.

Addressing food security and nutrition issues:

The centre acts as a resource for the local community, providing consultations on such topics as agricultural production, regional subsidies for agricultural producers, technological issues, innovations in agriculture, and how individuals can start their own farm.

Elements essential to the viability of this practice:

The Regional Centre cooperates with agricultural enterprises to design curricula tailored to their requirements. The Agrarian University offers scholarships to the best schoolchildren, and the centre's administration also applies for grants aimed at developing new and current activities. In 2019 the centre won a federal grant to establish an "Agrocube" scientific and educational laboratory, focusing on biotechnology, agrotechnology and robotics.

Impact on national policy and people's lives:

The Regional Centre's activities have had a strong impact on people's attitudes towards agriculture. The centre organizes lectures and other educational events for students and their parents, in cooperation with universities and agricultural enterprises. The partnership with the latter also helps improve the knowledge and skills of the centre's teachers.

The population of Tatanovo has increased over the past seven years, as many families move there specifically so their children can study at the centre. One-third of graduates go on to work in agriculture.

The Russian Teachers' Assembly supports the Regional Centre in sharing its experiences with the region. The centre's principal speaks at different official events, including those of the Federation Council and State Duma. The representatives of other regions also visit the centre to learn about its activities.

Because of its varied menu, the centre's canteen received the "Best village school canteen" award in 2017. In addition, one of the centre's students developed a "Smart greenhouse" project using self-regulating heating components, which won first prize at the 2017 Regional Festival of Science. The technology will now be tested in the centre's greenhouses.

Key lessons:

Detailed below are the management strategies for dealing with various challenges the Regional Centre has dealt with since its establishment:

1. ***Engagement of schoolchildren in gardening activities:*** The centre had to explain the programme to get parental approval for the students to take part in gardening activities. The administration invited agronomists from agricultural enterprises and conducted workshops to show parents what kind of activities their children would be doing. Now all parents agree that their children should be engaged in food production.

2. ***Lack of incentive:*** In the beginning, not all students were willing to work in the centre's gardens. Therefore it was decided that all student projects would require research connected to gardening activities. The agricultural enterprises assist the centre with seeds and seedlings. They also provide internships, conduct tours, and arrange prize contests. The centre's administration arranges students' participation in regional and Russian contests as well.

3. ***Capacity building for personnel:*** Not all teachers are qualified at the necessary level. In order to engage students, they have to devise interesting projects. The universities assist the centre in providing them with the appropriate training courses.

4. ***Ensuring successful harvests:*** As the centre applies only organic methods to grow plants (without pesticides or chemicals), this can lead to problems with the harvest because of pests or plant diseases. Teachers seek consultations from the universities and agricultural enterprises to find appropriate solutions.

5. ***Imperfect legislation:*** The centre is not able to sell its own produce, as engaging in commercial activities is against the law. In order to feed students using the fruits and vegetables produced, the centre must first have the produce certified, which is an expensive procedure. This is not cost-effective for the centre, due to the small amount of produce that it grows. Either changes in tax legislation should be introduced, or the cost of certification should be reduced for the centre.

CASE STUDY 11: SCHOOL FEEDING PROGRAMME IN ARMENIA

Author:

Elmira Bakhshinyan, WFP, Armenia

Time period and scope:

Armenia, national level, since 2010

Implementers:

WFP, the Government of Armenia, SIFI

Objectives and approaches:

As a result of a constructive partnership between the Government of Armenia and WFP, as well as thanks to the generous contribution of the Russian Federation, in 2010 WFP launched a school feeding programme in Armenia. This action was taken in light of convincing evidence and the experience of WFP and its partners that clearly reflected the need to strengthen national capacities for the development of sustainable national school feeding programmes.

Funding and technical assistance:

Financing comes from the Russian Federation, with advisory assistance from SIFI.

Stakeholders and coordination:

WFP, the Government of Armenia, and the Foundation for Sustainable School Feeding.

WFP provides technical and financial support in sharing sustainable school nutrition expertise. Advising is also provided by SIFI, WFP's main partner for cooperation.

The Foundation for Sustainable School Feeding has a clear focus on strengthening the capacities of national institutions, international cooperation, fundraising and public relations, as well as monitoring and evaluation, to ensure a smooth implementation of a National School Feeding Programme.

Addressing food security and nutrition issues:

The main results achieved thus far include: a ratified national strategy for sustainable school feeding; establishment of an interministerial committee with active participation of the Ministries of Education, Health, Agriculture, Territorial Management and Development, and Social Security, to promote a multidisciplinary approach to school meals.

Since 2010, the Government has implemented school feeding programmes in four areas: Ararat, Syunik, Vayots Dzor and Tavush. Implementation of the programme in the Shirak region is planned for the second half of 2018. The action plan agreed between WFP and the Government of Armenia takes into consideration the complete transfer of the National School Feeding Programme to the Government by 2023.

After the feeding programme evolved and became a stable national programme, the Armenian Government adopted a decree in December 2016 to establish the Foundation for Sustainable School Feeding. This was an important achievement in strengthening the management and ensuring the continuation of the national school feeding programme development.

Elements essential to the viability of this practice:

Development and maintenance of high standards of infrastructure at the school level, such as appropriate school canteens, necessary sanitary conditions, and food safety standards, have been essential to the success of this practice.

Also crucial is the continued technical and financial support from financial donors, WFP and SIFI in close collaboration with line ministries, local governments and other UN agencies.

Impact on national policy and people's lives:

During his recent visit to Armenia, Mr Pavel Evseev, head of the Department of International Financial Relations of the Ministry of Finance of the Russian Federation, commented: "There are numerous signs that this programme works. The success is confirmed by the data and the children's improved energy levels. Many gifted children are realizing their potential now that they receive school meals. "

In terms of policy impact, in the draft state programme of development of education for the period 2016–2025, priority is given to improving the quality of education, through the setup of child-centred initiatives such as educational support services, extracurricular activity classes, school feeding, and effective rules of interaction between students.

Key lessons:

WFP's school feeding programme has demonstrated that it will be able to remain operational after its transfer to the Government.

CASE STUDY 12: MAESTRANATURA EDUCATIONAL PROGRAMME

Author:

Denise Giacomini, Ministry of Health, Italy; Robert Masella, Antonio D'Amore, Sara Del Papa, Annalisa Silencio, Helena Currano, Annamaria Dzhimilyano

Time period and scope:

Italy, national level, since 2012

Implementers:

Istituto Superiore di Sanità (ISS), Ministry of Health

Objectives and approaches:

Since 2012 ISS has been implementing a pilot project in the field of nutrition, which is based on an innovative scientific training method called MaestraNatura. The method uses hands-on learning at school and at home to study the basics of chemistry, physics, biology, biochemistry and physiology. Children learn about the origin and composition of food, as well as chemical and biochemical mechanisms involved in its transformation and assimilation.

The project aims to teach the basic principles of nutrition, as contained in the Food Pyramid Guide. A distinctive feature of this approach is the experience-based learning process used during training in primary and secondary schools to teach students healthy eating diets (as shown in the food pyramid).

Focusing on health issues, rather than weight, promotes comprehensive human development, including physiological and emotional spheres of child development. The MaestraNatura method takes into account many aspects considered integral to preventing obesity and eating disorders.

Funding and technical assistance:

Funding comes from the Government of Italy and the Ministry of Health, with technical assistance and expertise of INAIL/DIT involving the CRF and three Italian high schools.

Stakeholders and coordination:

The "Sperimentare Salute" project (which uses the MaestraNatura method) was designed and implemented by ISS in collaboration with the Ministry of Health.

The project aimed to introduce a new methodology that could fill the gaps in children's nutrition knowledge, and actively involve them in family life as well. The project grew from participants' knowledge about the origins and functions of a variety of foods, and the use of food as a tool to strengthen the relationship between children and parents.

Addressing food security and nutrition issues:

Eating habits develop according to personal qualities and genetics, as well as the physical and social environment. The school environment also plays a key role in promoting health and preventing obesity.

Elements essential to the viability of this practice:

The MaestraNatura educational programme was implemented and tested from 2012 to 2017 in six regions of Italy, involving 103 schools, 900 teachers and 21 000 pupils aged from 6 to 13 years.

In the beginning, 200 teachers in 25 primary and secondary schools in Rome were interviewed to find out if and how they raised awareness of nutrition issues among their students. It was found that teachers believed these topics were very relevant, and devoted approximately four hours per year teaching about the food pyramid.

Next, 3 400 children aged 7–12 years were surveyed to assess their knowledge of food and nutrition. The results showed a high level of confusion and misinformation. Eight experimental study modules were then developed to fill those knowledge gaps (150 hours). Educational materials were also posted on the web platform, enabling tracking of both school and home activities, including cooking.

Impact on national policy and people's lives:

In the past two years, evaluations were carried out to assess the effectiveness of the MaestraNatura nutrition training programme. One hundred and two classes comprising about 2 250 students were involved in the assessment. At the beginning and end of the school year, the students (n = 1000) had to make a weekly meal plan. The plans were evaluated based on the inclusion of various food groups and the nutritional balance of the meals. By the end of the year, the quality of the meals had significantly improved.

Key lessons:

The MaestraNatura programme can be a useful new tool for teaching food and nutrition among children. In addition, the web-based platform is an economical, fast and easy-to-use tool for disseminating teaching materials, collecting data on the activities of students, and transferring knowledge on these issues to parents, who themselves are an indispensable influence on the behaviour of children.

Despite the fact that over the past few years in Italy there have been a number of expensive nutrition training programmes, proof of their actual effectiveness is quite ambiguous. Moreover, contrary to the recommendations of parents, participation in these programmes has been extremely limited.

CASE STUDY 13: IMPROVING SCHOOL NUTRITION PROGRAMMES IN THE NETHERLANDS

Author:

Corné Van Doren, Netherlands Centre for Nutrition, the Netherlands

Time period and scope:

the Netherlands, national level, since 2003

Implementers:

Netherlands Centre for Nutrition (Stichting Voedingscentrum Nederland)

Objectives and approaches:

"Food and Nutrition" is not a compulsory subject in Dutch schools. However, schools do hold activities to promote healthy nutrition and food issues. Good examples are the Gezonde school (www.gezondeschool.nl) and Jong Leren Eten (www.jonglereneten.nl). The Netherlands Centre for Nutrition has contributed to the improvement of several school programmes in elementary and high schools.

For example, the Smaaklessen programme provides comprehensive food and nutrition education for children aged 4 to 12 years covering a wide range of issues. This programme teaches children healthy, sustainable and safe food habits. They learn the different food groups and how to read food labels to determine that the food is sustainable (e.g. produced in a way to avoid adverse effects on agriculture and animal storage, using safe waste disposal methods, etc.), as well as basic cooking techniques.

Funding and technical assistance:

The Netherlands Centre for Nutrition is funded by the Ministry of Economy and the Ministry of Health, Welfare and Sport.

Stakeholders and coordination:

The Dutch Centre for Power encourages consumers to develop and maintain healthy, sustainable eating habits, while also encouraging the food industry to offer a range of sustainable food products. By working with local experts and other interested parties, the Centre serves as a link which unites them in matters of food and nutrition.

Addressing food security and nutrition issues:

The school canteen programme is another successful nutrition programme that has been developed in the country since 2003. The programme ensures that school canteens are supplied with healthy food.

Element essential to the viability of this practice:

The Centre's approach to educational programmes is to integrate the concepts of health and sustainability. Programmes are encouraged to not only include lessons on eating habits, but to focus on principles of sustainable nutrition throughout the entire educational programme.

Impact on national policy and people's lives:

About 30 percent of Dutch schools now have school canteens supplied with nutritious food.

Key lessons:

In recent years the Centre has added recommendations for canteens based on the latest research in the fields of behaviour and decision-making architecture, as well as updated national nutrition guidelines (the "Wheel of Five"). In addition to offering food that is more nutritious, the guidelines also contain recommendations on how to steer children towards these healthier choices.

Yerevan; Armenia - Farmers work at a Green Training Center where organic garden with anti-hail protection have been created to produce organic agrifood products from small-scale farmers.

Governance and accountability in the field of nutrition

CASE STUDY 1: IMPROVING KNOWLEDGE EXCHANGE AND DATA COLLECTION IN CENTRAL ASIA

Authors:

Arlette Saint Ville, Professor, Hugo Melgar-Quiñonez, Director, McGill Institute for Global Food Security

Time period and scope:

Central Asia, since 2013

Implementers:

FAO, "Voices of the hungry" project in Central Asia

Objectives and approaches:

Food security is a long-standing problem for the countries of Central Asia. The economic crisis and rising food prices in 2007–2008 led to a significant deterioration in global food security (Headey, 2013), which had a negative impact on the region. The heterogeneity of country characteristics coupled with the limited potential of existing food security systems creates additional problems for local and regional policymakers.

In the absence of precise measures and data for the region, the development of evidence-based policies in Central Asia is a complex task. Five basic methods are used to assess food security: 1) assessment of calories consumed per capita at the national level; 2) analysis of household income and expenditure; 3) food consumption; 4) anthropometry; and 5) the food insecurity experience scale (FIES) at the individual or household level. While the abovementioned measures have different strengths, the FIES allows for better understanding and measuring of access to food, and fits the context of the Central Asian region. It also allows for coordination of stakeholders, measuring changes in food security in the short term, and promoting the adoption of evidence-based responses to crises. The FIES has been refined and translated into more than 200 languages and dialects. It has a simple design and is easy to manage and interpret, making it appropriate for policymakers to use in assessing the level of food security at the national level.

FAO has been implementing the "Voices of the hungry" project in Central Asia since 2013, collecting data on hunger and food security through interviews conducted over the phone and in person. The interviews generate simple statistical data and allow a deeper understanding of the problems of the each region.

Funding and technical assistance:

FAO.

Stakeholders and coordination:

In 2011, the Russian Federation opened the Eurasian Centre for Food Security, created at Lomonosov Moscow State University, which develops partnerships with UN agencies, multilateral agencies and research centres (http://ecfs.msu.ru). In 2016, the World Bank organized an online consultation including experts and stakeholders in the region through the development of the "Food Security Network and Partnership".

Addressing food security and nutrition issues:

Over the three-year period from 2014 to 2016, food security (i.e. when food insecurity is low or nonexistent) increased by about 8 percent in the region (Armenia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan), from 49.7 percent in 2014 to 57.1 percent in 2016 (based on a sample of 15 000 respondents). However, at the same time cases of acute food insecurity almost doubled, from 3.6 percent in 2014 to 6.1 percent in 2016. Among these, the share of women who were unemployed and with low levels of education increased.

People living in rural areas are more food insecure than urban residents. Reduced food security coincides with a reduction in social life. Only 40 percent of respondents reported that they live "in a nice situation". The change in food security was most significant in Armenia, Tajikistan and Kazakhstan. For example, in Armenia after 2016, food insecurity decreased significantly, while moderate to acute food insecurity almost doubled.

Elements essential to the viability of this practice:

Data availability: The McGill Institute has a global food security data laboratory, which stores data collected from 150 countries as part of the "Voices of the hungry" project. Teachers and graduate students receive practical training to collaborate with researchers around the world on a wide range of issues related to food insecurity. The UN plans to introduce the FIES into the food security information systems of all member countries, for use in a variety of national surveys on poverty, health and nutrition, and demographics.

Exchange of experience: Internships, seminars and cooperation in the field of food security research with colleagues from Central Asia help to further knowledge exchange and keep the initiative relevant.

Impact on national policy and people's lives:

The FIES is an example of an accurate, easy-to-understand tool for measuring short-term changes in food security and for better understanding of the impact of economic shocks on food security and nutrition.

Key lessons:

A useful application of the FIES would be in evaluating the impact of school feeding programmes, as it allows for measuring any food security changes after the programmes are implemented.

For the project to be successful overall, it is important to:

- Ensure mutual understanding of issues and the joint participation of stakeholders in the development and implementation of measures;
- Ensure the effectiveness, transparency and accountability of partner institutions;
- Support the rule of law and the allocation of resources for their effective use;
- Support appropriate and coordinated policies and actions.

CASE STUDY 2: SUSTAINABLE SCHOOL FEEDING FOUNDATION IN ARMENIA

Author:

Elena Bolotnikova, Director of International Cooperation, SIFI

Time period and scope:

Armenia, national level, 2015–2016

Implementers:

UN/WFP National Pilot Programme (hereinafter referred to as the National School Feeding Programme), Sustainable School Feeding Foundation

Objectives and approaches:

WFP has been implementing the "Development of Sustainable School Feeding" project in Armenia since 2010. The Russian Federation finances the project, with technical support from SIFI.

The project aims to provide school meals to children in primary school and to create a framework for the implementation of the National School Feeding Programme. In addition, all schools are provided with new technological equipment to improve their school feeding infrastructure.

In 2013, the Sustainable School Feeding Strategy and Action Plan were adopted by the Government with the goal of introducing the sustainable school feeding system throughout the country and providing primary schoolchildren with healthy food.

The National School Feeding Programme was first implemented in three regions, with a fourth added in 2017. Eventually all ten provinces of Armenia will be covered.

The Programme activities demonstrated to the Government of Armenia the necessity of establishing a specific institution with a clear mandate and a wide range of competencies. School feeding is a complex area involving different sectors such as education, health, social security, agriculture and the national economy. Therefore it was decided to establish the Sustainable School Feeding Foundation to strengthen school feeding in Armenia and provide all schoolchildren of the country with balanced, safe and high-quality hot meals.

Funding and technical assistance:

Initial support to the Foundation has come from WFP. Once the Government of Armenia is fully in charge of the implementation of the National School Feeding Programme, the Foundation activities will be financed by the national budget.

Key stakeholders and coordination:

The development of the Foundation charter and strategy has been carried out in close cooperation with the Ministry of Education and Science and Interministerial Working Group, established by the Minister's Decree. This group coordinates implementation of the National School Feeding Programme and includes representatives from the ministries of education, health, agriculture, social affairs, and territorial administration.

Some local educational authorities and other school community actors have also provided valuable input to the policy development process.

Addressing food security and nutrition issues:

Despite the improved situation in the country, currently 19 percent of children are stunted, and 15 percent of children have excess weight or are overweight with significant micronutrient deficiencies. Cooperation between local food producers, health and social safety nets goes beyond the Ministry of Education mandate. The newly established Sustainable School Feeding Foundation will address these and other problems related to the healthy diets of Armenian schoolchildren and ensure coordination between different governmental bodies and institutions involved in school feeding. In particular, the Foundation will:

1. Oversee effective provision of healthy, diverse and balanced school meals to all schoolchildren;
2. Contribute to improving quality of education, public health care and social protection of schoolchildren;
3. Promote a healthy lifestyle and healthy eating habits in schools; and
4. Manage the school feeding programmes in all provinces, with funding from the national budget.

Elements essential to the viability of this practice:

The sustainable functioning of the Foundation is contingent upon:

- Adoption of the new National School Feeding Development Strategy for the period of 2017–2025, which will finalize the transition of the school feeding programme from WFP to national ownership;
- Commitment and engagement from all competent authorities in elaborating and implementing the school feeding programme, from the relevant ministries (Education and Science, Labour and Social Issues, Agriculture, Health, Economy, Territorial Administration and Development) to provincial authorities;
- Sufficient funding from the national budget to implement the Foundation Strategy.

Impact on national policy and people's lives:

The National School Feeding Programme has been implemented since 2014 in three provinces: Vayots Dzor, Syunik and Ararat. It provides 21 782 children in grades 1–4 in 264 schools daily hot meals at a cost of AMD 140 (USD 0.30) per person. In September 2017, 75 schools in Tavush province joined the Programme.

While the Sustainable School Feeding Foundation is still being developed and consolidated, it is clear that the existence of a national institution for the implementation of the school feeding programme can be considered a best practice.

Key lessons:

There has been increased interest from the Government of Armenia towards school feeding since the "Development of Sustainable School Feeding" project was launched in 2010. Right now, the Ministry of Education and Science is taking the lead in coordinating efforts of different ministries to address school feeding issues.

Provincial authorities are eager to complete the move from snacks to a hot meal modality; however, they still lack the funds. There is also a lack of coordination between the Ministry of Education and Science and Ministry of Agriculture, resulting in a lack of implementation mechanisms to increase sourcing from local smallholders.

CASE STUDY 3: THE ROLE OF INFORMATION AND THE INVOLVEMENT OF DECISION MAKERS IN THE IMPLEMENTATION OF THE "ON FORTIFICATION OF BAKING FLOUR" LAW IN KYRGYZSTAN

Author:

Gulmira Kozhobergenova, Chairman of the Executive Committee of the Civic Alliance for Improved Nutrition and Food Security (GAUPPB), Kyrgyzstan

Time period and scope:

Kyrgyzstan, national level, 2015–2017

Implementers:

GAUPPB, UNICEF and the Parliament of the Kyrgyz Republic

Objectives and approaches:

In 2009, Kyrgyzstan adopted the "On Fortification of Baking Flour" Law in order to reduce iron deficiency anaemia. The 2015 version of the Law decreed that all high-grade flour should be fortified with vitamins and complex minerals. However, within two years, monitoring data made it clear that these requirements were insufficient. The data revealed a low awareness among the population about the importance of using fortified flour, low access to fortified flour for rural and urban residents, and insufficient attention on the part of the Government to the Law's implementation.

In order to achieve the goal of 80 percent fortified flour usage in the population, it was proposed to increase the awareness of public body decision makers, improve their accountability, and coordinate the parties involved using effective Law implementation mechanisms.

The Law's implementation was monitored in the capital and regional centres of the country through numerous meetings with state bodies: the Department of State Sanitary Supervision and Disease Prevention, the Ministry of Economy, the Ministry of Health, the Ministry of Agriculture and Land Reclamation, and the State Customs Inspection.

Nutrition days were used to raise awareness among decision makers, such as the World Birth Defects Day, Children's Day and World Food Day. These involved dance and photo flash mobs and press conferences involving young people, health workers, government agencies and parliamentarians. There were also mass mailings sent to all 120 members of Parliament, Government leaders and key ministries, calling on them to address the problem of micronutrient deficiency among women and children. These events were covered in the media and on social networks.

In 2017, consultations were held with members of Parliament, the Ministry of Agriculture, Processing Industry and Irrigation, and UNICEF on the involvement of parliamentarians in the Law's implementation. The Government subsequently issued an order to strengthen implementation measures. The recommendations of the parliamentary hearings are currently being implemented and the reports of the state bodies are being prepared.

Funding and technical assistance:

Support for the above-mentioned activities came from UNICEF, with additional funding from the SPRING project in Kyrgyzstan.

GAUPPB is a member of the global network of the Scaling Up Nutrition Movement, allowing it to exchange best practices, information materials and tools for advocacy and coordination of nutrition activities across the region.

Stakeholders and coordination:

Kyrgyzstan became a member of the Scaling Up Nutrition Movement in 2011. The country has a Multi-Stakeholder Platform on nutrition and food security (MSP) for the exchange of experience and information and for joint decision-making. MSP participants include parliamentary network and state authorities (Ministry of Health, Ministry of Agriculture, Processing Industry and Irrigation, National Statistical Committee, Ministry of Economic Affairs), international organizations, and academic, civic and business networks. The work is led by an MSP coordinator, currently the deputy Minister of Agriculture. The MSP has quarterly meetings to share information, discuss current issues and plan joint activities.

The MSP Guidance Document was developed in accordance with the objectives set in 2012 by the World Health Assembly as well as the SDGs.

Addressing food security and nutrition issues:

The most severe kind of micronutrient deficiency in Kyrgyzstan is iron deficiency anaemia, affecting 43 percent of children aged 6 to 24 months and 51 percent of women of reproductive age.

Because of the widespread daily consumption of flour, it is the most efficient means for ensuring bodily intake of microelements and vitamins. Therefore it was decided to introduce fortified flour, taking into account daily iron and microelement requirements. A premix (vitamin and mineral complex) was approved by order of the Ministry of Health in accordance with WHO recommendations, which included vitamin B1, B2, B3, folic acid, iron and zinc, for use in fortifying the flour.

Elements essential to the viability of this practice:

The sustainability of flour fortification requires prioritization of nutrition issues in public and sectoral strategies with the development of regulatory documents and technical safety regulations, thus ensuring that producers have access to the fortified flour premix. It is also important to expand information systems to encourage the population to use the new fortified flour.

Impact on national policy and people's lives:

According to the new wording of the Law, flour fortification became mandatory in March 2015. Amendments were made to the administrative code and the list of offences involving administrative fines for the use of unfortified flour in health, education, social protection and other state and medical institutions was expanded to include the import and circulation of unfortified flour within the country. As a result of these measures, the share of fortified flour increased to 51 percent in the second quarter of 2015.

Key lessons:

The involvement of parliamentarians has become the main guarantor that ministries are held accountable for the implementation of the Law and the development of detailed mechanisms to ensure the provision of fortified flour. In order to ensure that these parliamentarians give the appropriate attention to nutrition, they also need to be provided with sound information so they can advocate as well-informed experts. NGOs themselves require information and scientific support in the form of prepared analytical reports (supported by statistics) as well as analyses of legislation, the state budget, tax and administrative codes, and nutrition policy.

CASE STUDY 4: CAPACITY DEVELOPMENT IN FOOD AND NUTRITION THROUGH AN INTERNATIONAL RESEARCH COOPERATION

Author:

Mirjana Hurynovich, MD, University of Belgrade, Chairman of the Network on Capacity Development in Nutrition in Central and Eastern Europe, Serbia

Time period and scope:

Central European countries, international level, since 2012

Implementers:

Researchers from the Centre for Research in Nutrition and Metabolism, Institute of Medical Research, University of Belgrade in Serbia, as well as network members from CAPNUTRA countries

Objectives and approaches:

In 2005, a meeting in Budapest on capacity building in research and training in Central European countries was held, resulting in the establishment of the UNU/SCN Network on Capacity Development in Nutrition for Central and Eastern Europe (CAPNUTRA, www.capnutra.org). The UNU/SCN network encourages the formation of regional networks working towards enhancing individual, institutional and organizational capacity in food and nutrition.

The goal is to support the establishment of networks for capacity development in various parts of the world in order to improve knowledge and skills in the areas of food, nutrition and health policy; nutrition research, university training and academic accreditation; and to promote healthy food and dietary recommendations, as well as establishing a food composition database. Regional networks independently decide their development goals, based on the needs of countries.

Funding and technical assistance:

The CAPNUTRA network received support in 2005–2011 from the UNU Programme on Food and Nutrition Division of FAO SEUR/REU in Budapest, as well as several EU projects (EuroFIR, EURRECA, and Nexus EuroFIR) with the active participation of researchers from the Centre for Research in Nutrition and Metabolism, Institute for Medical Research, University of Belgrade, and network members from Central Europe and the Balkans.

Stakeholders and coordination:

The network consists of 11 member countries of Central Europe and the Western Balkans and cooperates closely with these same European and international associations, sharing scientific information on food and health issues. The interaction between the members is based on a Memorandum of Understanding.

Their main expertise lies in the field of food composition studies, nutrients, food and nutrition, as well as development tools for knowledge dissemination and technology transfer.

Addressing food security and nutrition issues:

The exchange of information and training has led to the creation of a platform and enhanced the capacity of professionals in the field of food studies, nutrition and public health in the countries of Central Europe and the Balkans.

Elements essential to the viability of this practice:

Harmonization and standardization of data collection on food consumption and nutrition data are of great importance to enhancing the capacity of professionals in the Balkan region. Regular updating of the information in the database will contribute to the collective efforts of FAO, WHO and the European Food Safety Authority in harmonizing data on individual food consumption at the global level.

Impact on national policy and people's lives:

After identifying the relevant knowledge gaps, various training activities to develop the capacity of professionals in the field of food and nutrition were conducted. The process of innovation has also been accelerated through knowledge exchange and technology transfer between academic institutions, individual researchers and stakeholders.

Tools have been developed for the assessment of diets on the basis of population surveys at the national and regional levels, using harmonized and standardized methods in accordance with European recommendations.

Key lessons:

The network has become a source of new scientific knowledge on nutrition with tools to facilitate regional participation and identify capacity-building needs and opportunities.

Capacity building is a long-term, continuous process that goes well beyond formal training: it also includes the development of human resources, and organizational, institutional and legal frameworks to enhance knowledge and skills.

CASE STUDY 5: AGRARIAN REFORM FOR FOOD SECURITY IN THE REPUBLIC OF UZBEKISTAN

Authors:

Dildora Aralova, D.N. Saidova, PhD, associate professor of Tashkent State Agrarian University, Uzbekistan

Time period and scope:

Uzbekistan, national level, 2014

Implementers:

Government of the Republic of Uzbekistan

Objectives and approaches:

Food security refers to a country's continued ability to ensure that food is available to the entire population in the quantity and quality necessary for an active and healthy life. Ensuring food security involves the implementation of effective agricultural policies and the creation of stable economic conditions to broaden the variety of food produced; promoting the introduction of innovative technologies for the production, processing and storage of raw materials and food; improving the placement and specialization of agriculture with an aim towards regional self-sufficiency in terms of raw materials and food; and enacting effective social policies aimed at eradicating poverty and inequality in food availability.

In Uzbekistan, fundamental reforms have been implemented to diversify agriculture, provide the population with basic food crops, and increase agricultural exports.

Funding and technical assistance:

Funding received from the Government of Uzbekistan.

Stakeholders and coordination:

Government of the Republic of Uzbekistan, private farmers.

Addressing food security and nutrition issues:

The two-fold reduction of cotton production (from 6 million tonnes to 3 million), and the transfer of vacant land on a rental basis to newly established private farms using benefits and preferences accorded by the state, has allowed the production of grain, fruits and vegetables, and potatoes to multiply and turn Uzbekistan into a world exporter of fruits, vegetables and wheat.

The fundamental basis for this reform of agricultural production in the country was a fundamental institutional transformation, which consisted in the complete abandonment of the administrative planning and distribution system and the transition to market relations.

Elements essential to the viability of this practice:

A number of targeted programmes have been developed to increase the production of fruits and vegetables, melons, potatoes and grapes, increase the volume of goods exported from the processing industry, replenish domestic markets, and increase the area for dwarf and semi-dwarf orchards and vineyards, based on the use of modern technologies.

Agri-technical measures are carried out to modernize production methods in the farms and dekhkan farms growing fruit and vegetable products. Farms are provided with the required fuel, lubricants, mineral fertilizers and seeds, as well as preparations for pest and disease control.

Impact on national policy and people's lives:

According to 2015 data, Uzbekistan produced 10.1 million tonnes of vegetables, 1.8 million tonnes of melons, 2.7 million tonnes of potatoes, 2.7 million tonnes of fruits and 1.6 million tonnes of grapes. Average agricultural production per capita was as follows: vegetables — 320 kg (2.8 times more than the medical norm), potatoes — 85.3 kg (1.5 times more), melons — 58.6 kg (2.2 times more), fruits — 86.8 kg (1.2 times more) and grapes — 49.9 kg (3 times more than the norm). There were 2.5 million tonnes sent for processing, 589 000 tonnes for export and 628 000 tonnes for seeds.

In 2015, Uzbekistan became one of 14 countries to receive awards from FAO Member States for achieving the Millennium Development Goals in the field of food security. The food programmes made it possible to provide the population with a full and balanced diet.

Improving the structure and diet has had a beneficial effect on the health of the population, especially children. For example, over the past ten years, the proportion of children with reduced body weight has decreased by more than half (from 4 percent to 1.8 percent), the average growth has increased by 3 cm (significantly, 2.5 times more), and the incidence of anaemia (a characteristic disease of the Central Asia region) in women has decreased as well. The average life expectancy of the population of Uzbekistan increased by 7.5 years, from 66 years in 1991 to 73.5 years in 2015, and the average life expectancy of women has gone up, to 75 years.

Key lessons:

The food programmes implemented in Uzbekistan have focused on the modernization of agriculture and on increasing production and efficiency, informed by national and international experiences in improving irrigation and soil fertility.

The implementation of these programmes requires simultaneous solutions to other related issues so as to attract foreign investment; the introduction of high-tech equipment; and the use of natural and economic resources to increase export potential.

In terms of improving water management for agriculture, this requires the involvement of all stakeholders, communication with land management, introduction of drought-resistant high-yield varieties, institutional development in the field of water use and water consumption, strengthening the role of the water users association, development of legal mechanisms for regulating water-land relations, development of regional monitoring of water resources, and development of socio-economic scenarios and plans for long-term development of the agricultural sector.

Kemin, Kyrgyzstan - Workers load bags with vegetables into the car from the warehouse Logistic food center in Kemin.

Webinars

The Russian-funded project and the FSN Forum jointly organized a webinar series with experts from FAO, Moscow State University, the Eurasian Food Security Centre, SIFI and the University of São Paulo to provide in-depth information on the following four topics:

1. Nutrition-sensitive food systems
2. Migration, remittances and matching grants
3. Nutrition-sensitive social protection
4. School food and nutrition programmes

Nutrition-sensitive food systems

This webinar aimed at providing a general overview of the concept of nutrition-sensitive food systems. After summarizing the basic elements and explaining the interrelation of food systems and nutrition, as well as the theme of sustainability, the presenters focused on measures aimed at improving value chains, the food environment and consumer behaviour. Examples of specific measures included, among others, efforts to establish organic agriculture in Kyrgyzstan, and efforts to reduce micronutrient deficiency in Tajikistan. After the presentations, participants and lecturers engaged in an active round of discussion focusing on issues such as nutrition indicators in school food programmes, intersectoral coordination, different types of food systems, the relevance of agro-ecology in Eastern Europe and Central Asia, drivers of behaviour change, and the impact of climate change.

Recording and presentations of the webinar:
www.fao.org/fsnforum/eca/activities/webinars/nutrition_food_systems

Migration, remittances and matching grants

This webinar looked into the role that migration and the flow of remittances can have on the food security and nutrition situation in both countries of origin and those hosting migrants. Participants were introduced to the matching grants approach, which aims to channel remittances into the formal economy and incentivize recipients to use these funds towards agricultural development and poverty reduction. Detailed information was also presented on the use of remittances by households in Tajikistan and lessons learned from a matching grant scheme implemented in the Republic of Moldova and Tajikistan.

In the ensuing question and answer session, participants discussed issues such as the sustainability of such programmes, the disbursement methods for grants of various amounts, and the different incentives that can be used to involve beneficiaries.

Recording and presentations of the webinar:
www.fao.org/fsnforum/eca/activities/webinars/migration_remittances_matching_grants

Nutrition-sensitive social protection

The third webinar introduced the concept of nutrition-sensitive social protection. After a general introduction of the topic and the presentation of evidence of positive impacts on the four dimensions of food security, the lecturers shared country-specific examples of the Cash+ programme being implemented in Armenia and Kyrgyzstan.

The discussion that followed focussed on issues such as challenges to the sustainability of the programmes, the need to involve the health care sector, and the need to provide financial training to the recipients to ensure an efficient use of the grants.

Recording and presentations of the webinar:
www.fao.org/fsnforum/eca/activities/webinars/nutrition_sensitive_social_protection

School food and nutrition programmes

The final topic, school food and nutrition, was explored in two webinars. The first webinar, held in Russian, began by showcasing the experience of the Russian Federation in the organization of school food programmes. This was followed by an introduction to the legal aspects of school meals and school gardening initiatives in Kyrgyzstan and a presentation on the development of the nutrition education curriculum in Tajikistan. Finally, the webinar introduced the school food and nutrition programme in Armenia including the setup of greenhouses.

The second webinar, held in English, explained FAO's School Food and Nutrition Framework in addition to socio-economic considerations related to the implementation of school food programmes. This was followed by good practice examples of school food programmes implemented in Sao Paulo, Brazil and Mouans-Sartoux, France.

Recording and presentations of the webinars:
www.fao.org/fsnforum/eca/activities/webinars/school_food

Ungheni, Moldova -
Harvesting and cleaning onions.

Resources shared by participants

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Videos

AccessAgriculture — Feeding improved chickens
http://www.accessagriculture.org/feeding-improved-chickens

AccessAgriculture — Making business from home raised chicks
http://www.accessagriculture.org/making-business-home-raised-chicks

AccessAgriculture — Taking care of local chicken
http://www.accessagriculture.org/taking-care-local-chicken

AccessAgriculture — Working together for healthy chicks
http://www.accessagriculture.org/working-together-healthy-chicks

Web sites and resources

AgroNigeria
https://agronigeria.com.ng/

Bioversity International — Healthy diets from sustainable food systems
http://www.bioversityinternational.org/initiatives/healthy-diets/

Colorado State University — Smallholder agriculture
http://www.smallholderagriculture.com/

Dangoria Charitable Trust
www.dangoriatrust.org.in

European Commission — Global human settlement
http://ghsl.jrc.ec.europa.eu/

EU Science Hub — School food policy country fact sheets
https://ec.europa.eu/jrc/en/publication/school-food-policy-country-factsheets

EU Science Hub — Helping EU schools become a springboard for healthy diet and lifestyle habits
https://ec.europa.eu/jrc/en/news/helping-eu-schools-become-springboard-healthy-diet-and-lifestyle-habits

EU Science Hub — How to promote fruit and vegetable consumption in schools: a toolkit
https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/how-promote-fruit-and-vegetable-consumption-schools-toolkit

EU Science Hub — How to promote water intake in schools: a toolkit
https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/how-promote-water-intake-schools-toolkit

EU Science Hub — Helping EU schools become a springboard for healthy diet and lifestyle habits
https://ec.europa.eu/jrc/en/news/helping-eu-schools-become-springboard-healthy-diet-and-lifestyle-habits

Eurostat — Degree of urbanisation
http://ec.europa.eu/eurostat/web/degree-of-urbanisation

Global Forum for Rural Advisory Services
http://www.g-fras.org/

Global Forum for Rural Advisory Services — Nutrition Working Group
http://www.g-fras.org/en/community/working-groups/nutrition-working-group.html

Global Strategy to improve agricultural and rural statistics — Resource centre
http://gsars.org/en/tag/ruralstatistic/

Helvetas
https://www.helvetas.org/

Helvetas — Organic and Fair Trade Rice Project in India and Thailand
https://www.helvetas.org/topics/keystone_mandates/rice_project.cfm

IFAD — Feature stories
http://www.ifad.org/story/feature/nutrition.htm

IFOAM — Nutrition in mountain agro-ecosystems
http://www.ifoam.bio/en/nutrition-mountain-agro-ecosystems

ILO — Tripartite Meeting on issues relating to Migrant Fishers
http://www.ilo.org/sector/activities/sectoral-meetings/WCMS_552792/lang--en/index.htm

JUCCCE — Food Heroes
https://www.juccce.org/

LANSA — Public and Private Actions
http://www.lansasouthasia.org/content/public-and-private-actions

Milan Urban Food Policy Pact
http://www.milanurbanfoodpolicypact.org

Mountain Agro-ecosystem Action Network
https://maan.ifoam.bio/

Nestlé — Creating shared value
http://www.nestle.com/csv/what-is-csv

OECD — Africapolis: a comparable geo-spatial database on cities and urbanisation dynamics in Africa
http://www.oecd.org/swac/topics/africapolis/

Regional Symposium on Sustainable Food Systems for Healthy Diets in Europe and Central Asia
http://www.fao.org/europe/events/detail-events/en/c/1034293

School Food and Nutrition
http://www.fao.org/school-food/en

Schools for Health in Europe
http://www.schools-for-health.eu/she-network

Sustainable Development Goals
https://www.un.org/sustainabledevelopment/sustainable-development-goals

Swiss Agency for Development and Cooperation — Agriculture and food security
https://www.eda.admin.ch/deza/en/home/themes-sdc/agriculture-food-security.html

WHO European Healthy Cities Network
http://www.euro.who.int/en/health-topics/environment-and-health/urban-health/who-european-healthy-cities-network

Young Professionals for Agricultural Development
http://www.ypard.net/

Russian Federation funding

FAO-Russian cooperation supports to a wide array of development initiatives in the Central Asia and Caucasus region and around the world. The FAO's Project "Developing Capacity for Strengthening Food Security and Nutrition in Selected Countries of the Caucasus and Central Asia" (funded by the Russian Federation), is strategically mediating the challenges in the region by promoting cross-sectoral collaboration and providing adequate capacity to effectively pursue and manage coherence between agriculture, food security, nutrition and social protection to address the most pressing needs of the people.

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