

EFFECTIVE INTEGRATION OF NUTRITION INTO EXTENSION AND ADVISORY SERVICES AND MAINSTREAMING NUTRITION INTO AGRICULTURE

CASE STUDIES NOTES: CHILE

The "Technical Advisory Service for Peasant Families of the San Nicolás dry lands, Ñuble Region" is an extension program being implemented in this district from the South-Central Zone of Chile under the rural extension team of the Development Program Local (PRODESAL), dependent on the Department of Rural Development (DDR) of the Municipality of San Nicolás.

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| Implementation period | March 2007 to date |
| Budget | US\$ 1.079.600 |
| Funding Source | Permanent funds: Local Development Program (PRODESAL, in Spanish) of the Institute for Agricultural Development (INDAP, in Spanish) of the Ministry of Agriculture and the Municipality of San Nicolás. Others: Competitive Funds of the Regional Government of Ñuble, National Irrigation Commission (CNR, in Spanish) and Foundation for Agrarian Innovation (FIA, in Spanish) of the Ministry of Agriculture, Ministry of the Environment, General Secretariat of Government, Technical Cooperation Service (SERCOTEC, in Spanish), Corporation Promotion of Production (CORFO, in Spanish), United Nations Development Program (UNDP) and Global Environment Facility (GEF). |
| Geographical location of the project | Ñuble Region, Chile |
| Project Location | San Nicolás |
| Participants (N° y characteristics): | 402 peasant families from the Prodesal Program and 100 farming families that do not participate in this program, a total of 502, organized into 28 Rural Committees. |

This initiative aims to promote diversification, sustainable production, and food preservation; and sensitize the families of the San Nicolás district about the importance of good nutrition.

Context of the initiative

Chile has undergone a transition from malnutrition due to deficit to malnutrition due to excess, which makes the country among those with the highest rates of overweight and obesity in all age groups. The 2016-2017 National Health Survey showed that obesity, among the population over 15 years of age, grew from 22.9% to 31.2% in the last 6 years, which is higher than the average for OECD countries in 15 percentage points (19.4%).

On the other hand, the latest nutritional report in JUNAEB 2020 schoolchildren shows an unprecedented increase in obesity throughout the country, especially in its most severe form. San Nicolas is among those districts with elderly in the worst situation, with 15.8% obesity and 34.2% overweight, in this population group.

The main causes of this problem are a sedentary lifestyle and a poor diet, and behind these factors we find the lack of availability and access (physical and economic) to healthy foods and the difficulties in time and space for the habitual practice of physical activity. The population most affected by this condition of malnutrition due to excess and obesogenic environments are women and people with a lower educational and socioeconomic level, highlighting the importance of the social determinants of food and nutrition.

In Chile, there are public policies, strategies and programs addressing nutrition and food, but they suffer from a multisectoral food system approach.

Recently, due to the situation faced by food production worldwide, with a significant rise in the price of food and inputs for production, along the health crisis caused by Covid -19, the effects of the climate crisis and armed conflicts, the need to strengthen the food system of the country has become evident.

In this context, the Ministry of Agriculture established a National Commission for Food Security and Sovereignty (CNSSA, in Spanish) and has called on various sectors and citizens to build a National Strategy for Food Security Sovereignty and a medium- and long-term Action Plan, with a multisectoral and system approach.

Implementation

The "Technical Advisory Service for Peasant Families of the San Nicolás dry lands, Ñuble Region" has implemented a social-productive strategy that considers the following emphases and areas of work:

Box 1. Policies related to nutrition in Chile.

National Food and Nutrition Policy (Ministry of Health, 2017), whose purpose is to contribute to improving the health status and quality of life of the national population in terms of food and nutrition, providing a reference framework for the development of regulations, strategies, plans, programs and projects regarding food and nutrition.

Choose to Live Healthy System (Ministry of Social Development and Family, 2013) whose objective is to promote healthy habits and lifestyles, prevent and reduce risk factors and behaviors associated with non-communicable diseases, and improve the quality of life and well-being of people. This system is a management model made up of various policies, plans and programs prepared and executed by different State agencies.

Law No. 20,606 on the Nutritional Composition of Food and its Advertising (2012) and its Regulations (RSA DS 977/96, modification 2016), which aims to warn the population of the high content of energy/calories, saturated fats, sugars and sodium/salt in packaged foods, when these exceed the limits established by the Ministry of Health. In addition, it regulates advertising aimed at children under 14 years of age and the sale of these same foods in schools.

Law No. 20,869 on Food Advertising (2015) and its Regulations (RSA DS 977/96, modification 2017) that increases the restrictions on food advertising of Law 20,606 in terms of hours and target audience. In addition, it prohibits the advertising of breast milk substitute products.

Decree No. 977 of the Ministry of Health, which approves the Food Sanitary Regulations (1996), which establishes the sanitary conditions to which the production, importation, processing, packaging, storage, distribution, sale, and advertising of food for personal use must be adhered to, in order to protect the health and nutrition of the population and guarantee the supply of healthy and safe products.

In addition, there is a set of standards, guides, technical guidelines and programs related to food and nutrition, among them: Food-Based Dietary Guidelines, GABA, Food Guide for Boys and Girls under two years of age, Malnutrition Management Standard, State Food Programs for Health (PNAC and PACAM) and Education (PAE), Nutritional Surveillance and Food Control Program, Choose a Healthy Life Program in Primary Care for people with malnutrition, and Programs for People with Chronic Noncommunicable Diseases linked to lifestyles, among others.

- 1) Production for self-sufficiency and generation of surpluses incorporating agroecological practices: this begins with a 60 m² greenhouse or an open-air vegetable garden in a first stage, to accomplish the objective of self-supplying a high proportion of the vegetables required by the families. In a second stage, a grower who was well evaluated in the first stage, can apply for increasing the greenhouse surface (up to 120 to 180 m²); surpluses are sold in local markets. In addition, the implementation of 4-season fruit orchards, crops, poultry, and minor livestock is promoted, using agroecological management and techniques such as the production of humus, compost and biopreparations, the use of green fences, gradually abandoning the use of chemical products. In addition, rainwater harvesting, and the use of solar dehydrators are promoted.
- 2) Demand-based extension program: farmers are organized into 25 rural committees, all gathered in the San Nicolás District Peasant Coordinating Committee (CCCCSN), where demands, needs and priorities of each sector of the district are shared with the group. The annual work plan is based on this information and prepared jointly with the extension team. The CCCCCSN carries out tasks of social control and monitoring of the plan, which has been key for the extension actions to have sociocultural relevance. In turn, the DDR has weekly contact with the PRODESAL extension team to identify problems and opportunities.
- 3) Multisectoral approach through joint work with professionals from the health department of the municipality, to raise awareness and refer cases of obesity, and promotion of the cultivation and use of medicinal herbs and naturopathy in primary health care centers. In addition, in the education sector, agroecology was incorporated into the educational plans of the district schools.
- 4) Articulation of various sources of financing (11) with a wide range of productive development instruments, from public and private, national and international institutions, for ecological entrepreneurship and innovation.
- 5) Food system approach through primary production, along food processing of products for the addition of value and marketing. In terms of processing, dehydrated fruits, condiments, preserves, and jams are obtained. In terms of marketing, there is an ECO-FAIR, a permanent formal space for the sale of products (fresh vegetables and by-products), exclusively for members of the rural committees, which brings together 18 registered growers, from various sectors of the district.

The extension team advises farmers of each rural committee, through field visits, monthly meetings, and training days. There is an emphasis on capacity building in agroecological management, and the use of technological equipment (technical irrigation systems and solar panels connected to irrigation) since the lack of knowledge in these matters is recognized by farmers, extension agents and professionals of the area.

Results y discussion

This case presents progressive property development, in which the diversity and production of vegetables and fruits increases each year. In the case of greenhouses and outdoor

gardens, the crop rotation includes more than 30 different types of vegetables, in such a way as to generate a biodiverse and agroecological system with production the 4 seasons of the year, free of chemical residues.

In addition, given a) the current total vegetable land of the growers (22 hectares of outdoor gardens and 2.73 hectares of greenhouses), b) the average yields of each of these systems and c) the indications of dietary guidelines regarding daily consumption of vegetables, the average production of the 502 participant families fully covers the requirements of each of their family groups. If the same analysis is done for the 3-year-old fruit orchards, the current production covers 16% of the requirements with an expected 100% coverage by year 5.

This model has also made it possible to generate income for some families, through the sale of surpluses in the third year, for which data is not available due to the diversity of conditions (crops and yields) of each family group.

In addition to what has been presented, the multisectoral approach of this initiative has allowed the following results:

- Incorporation of naturopathy as a pilot experience in 20 patients treated at the Family Health Center (CESFAM).
- Creation of a municipal composting center.
- Incorporation of agroecological routes into the district Tourism Development Plan (PLADETUR).
- Clean Production Agreements with an emphasis on adaptation to climate change for the San Nicolas District Peasant Coordinating Committee.
- Construction of the "Casa del Campesino" as the headquarters of the CCCSN and all the rural committees, with a training and processing room for the products grown by these farmers.

Based on the above, it can be noted that the implementation of productive land for self-sufficiency and generation of surpluses, incorporating agroecological practices, has improved the quality of life of participating families, promoting sustainable food systems and nutrition-sensitive extension systems.

Conclusions

The initiative "Technical Advisory Service for Peasant Families of the San Nicolás dry lands, Ñuble Region" is a notable case for the multisectoral approach to the problem of malnutrition of the population of the San Nicolás district, in which the local institutionalism of health, education and agriculture have worked together. The problems of obesity, overweight and agricultural production have been addressed transversally through innovative and sustainable solutions, which have made possible to increase the production and consumption of vegetables and fruits, improve the quality of food and contribute to healthy and sustainable diets. This highlights the local level as a privileged space for intersectoral articulation, avoiding the complexities that larger territory spaces represent.

Good practices of this initiative include the farmer organizations (rural committees) who became manage to be relevant actors, participating in the process of designing and validating the work plan, ceasing to be mere recipients of previously defined programs. Another notable element is the gradual increase in productive systems and agroecological techniques, which allows farmers to establish sustainable innovation processes. Finally, a food system approach is used in this extension program, which not only focuses on the primary and local production of fruits, vegetables, and others, but also on the marketing and processing of surpluses.

In addition to what has been done, it is necessary to include the situation of food demand and consumption in the study of the food system, to identify gaps and establish social marketing strategies that accompany structural changes and communicate the advantages of consuming nutritious and healthy foods and the sustainable production. In this same sense, alliances between municipal agents, farmers and schools should be promoted to favor the development of new intersectoral initiatives. An interesting option is to consider the "Agroecological Lighthouse" strategy promoted by the Institute of Agricultural Research, INIA, of the Ministry of Agriculture, which develops, supports, and trains in research, technology transfer and extension in production with agroecological criteria and organic production.

It is verified in this case study that even when there is no institutional mandate to develop extension sensitive to nutrition, the will of the extension teams to develop this approach is perceived and found. However, to sustain this effort, it is essential to incorporate it into the official guidelines, so that its implementation is at the national level and that the results indicators of the extension programs reflect the new paradigm.

This case study note was developed under the actions of the GFRAS Nutrition Working Group. Two cases, from Chile, South America, and Uganda, Africa, were studied within the framework of this initiative. These cases contribute with strategies, activities and lessons learned in terms of food systems, multisectoral approach, empowerment of women and development of capacities in nutrition-sensitive extension, providing the possibility to be adapted to other contexts in these target regions.

GFRAS is the Global Forum for Rural Advisory Services. GFRAS is made up of various stakeholders worldwide who have an interest and role in rural advisory services (RAS). The mission of this forum is to provide advocacy and leadership by RAS stakeholders on pluralistic, demand-driven advisory services. The vision is to promote sustainable growth and reduce poverty.

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