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GOOD PRACTICES IN SCHOOL GARDENS AND SCHOOL MEALS

AFRICA, ASIA, AND LATIN AMERICA AND THE CARIBBEAN

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WFP World Food Programme Centre of Excellence against Hunger
fnde National Fund for Education Development
ABC Brazilian Cooperation Agency Ministry of Foreign Affairs
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Contents


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UNITED NATIONS FOOD AND AGRICULTURE ORGANIZATION (FAO)

Since 2009, the Brazil-FAO International Cooperation Programme for School Meals, an alliance between the National Fund for Education Development (FNDE), the Brazilian Cooperation Agency (ABC) and the United Nations Food and Agriculture Organisation (FAO), has been developing activities to strengthen and institutionalise school meal programmes in Latin America and the Caribbean (LAC). About 2 billion people in the world are overweight or obese due to a poor diet and sedentary lifestyle. Around 133.4 million Latin Americans and Caribbeans do not have access to a healthy diet. In addition, this region has the highest healthy food costs (LAC Food and Nutrition Security Overview, 2023). Given this scenario, the cooperation has promoted actions aimed at offering healthy and adequate menus, public procurement from smallholder farming, improvement of school infrastructure and food and nutrition education actions such as school gardens, exchanges of experiences, training and technical visits between 26 LAC countries, within the framework of the Sustainable School Feeding Network (RAES).

As part of food and nutrition education actions and a component of Sustainable Schools, the Programme encourages school garden initiatives, considering their potential to transform food habits of current and future generations, training students to be aware of the impacts of food production on the environment and on agri-food systems. In addition, with the greater impact of climate change, this educational tool becomes even more relevant as it can offer concrete contributions to the mitigation of climate effects.

WORLD FOOD PROGRAMME (WFP)

The World Food Programme (WFP) works to implement school gardens as part of technical assistance aimed at improving the quality and scale of school meal programmes, positively impacting the lives of more than 106 million children worldwide and connecting school meals with local fresh food production. Around the world, WFP contributes to the development and maintenance of school gardens, collaborating with the school community to ensure that interventions are sustainable and appropriate to students' nutritional and pedagogical needs.

An important part of these efforts involves more than 13 years of the work of the WFP Centre of Excellence Against Hunger Brazil. With over 80 partner countries in Latin America and the Caribbean, Africa, and Asia, and joint action with FNDE and ABC, the Centre has promoted exchange of experiences, training, missions, and high-level technical visits to provide personalised solutions and actively contribute to building national efforts to fight hunger. A recent example is the support given to Brazil in assuming the co-leadership of the Global School Meals Coalition, to which WFP acts as secretariat.

NATIONAL FUND FOR EDUCATION DEVELOPMENT (FNDE)

The National Fund for Education Development (FNDE), a federal authority linked to the Brazilian Ministry of Education, is responsible for managing the National School Feeding Programme (PNAE). This programme provides adequate and healthy school meals to students enrolled in all stages and modalities of public basic education throughout the national territory. It is the most well-consolidated food and nutrition security policy in Brazil, having begun its first steps in the 1950s. In addition to the supply of healthy meals, PNAE has food and nutrition education actions as one of its axes.

School gardens are a powerful teaching and learning tool, especially for food and nutrition education actions. Its implementation streamlines the school curriculum and can be used as a pedagogical tool to work with food and nutrition education, environmental education, sustainability, and food and nutrition security. For this reason, FNDE encourages the development of actions and strategies to promote implementation of pedagogical gardens and related activities. Support for school gardens strengthens PNAE and its axes, as it contributes to making healthy and sustainable food more accessible.

BRAZILIAN COOPERATION AGENCY (ABC)

The Brazilian Cooperation Agency (ABC), within the Ministry of Foreign Affairs (MRE), was created in 1987 to plan, coordinate, negotiate, approve, execute, monitor, and evaluate, at the national level, programmes, projects and activities of technical cooperation for development in all areas of knowledge, from the country to abroad and from abroad to the country, under bilateral, trilateral or multilateral formats. Since 2019, it has also been responsible for coordinating humanitarian cooperation promoted by the Brazilian government.

Over the years, Brazil, which was previously limited to receiving technical assistance from developed countries and international organisations, began to provide cooperation to other countries. ABC has about 120 national, public, and private cooperating entities; strategic alliances with developed countries; partnerships with 45 international organisations, regional and inter-regional blocs, and cooperation projects in more than 100 developing countries, including the community of Portuguese-speaking countries (CPLP) and Least Developed Countries. School meals is a priority South-South Triangular Cooperation theme; it counts on FNDE as a technical and financial partner and on important partnerships with FAO and WFP, through the WFP Centre of Excellence Against Hunger Brazil, to disseminate the National School Feeding Programme (PNAE) to Global South countries, as well as to cooperate with national governments to strengthen school meal policies and programmes.

SCHOOL GARDENS AND SCHOOL MEALS: GOOD PRACTICES FROM AFRICA, ASIA, AND LATIN AMERICA AND THE CARIBBEAN

1. WHAT ARE SCHOOL GARDENS?

School gardens are small areas within or near a school where students are engaged in the cultivation of various agricultural crops, such as vegetables. More than that, this activity has proven to be a teaching and knowledge-building methodology that introduces students to the basic foundations of food and nature while enriching the school curriculum through inclusion of practical activities.

School gardens play a fundamental role in school meal programmes, as they function as a strategic tool for food and nutrition education, creating healthy and sustainable eating habits for students and the entire school community.

These spaces provide an ideal environment to develop interdisciplinary themes related to environmental and food education, facilitating the teaching and learning process. Through growing food, students are introduced to practical learning that contributes to the development of skills and competences from the earliest years into adulthood. This activity also stimulates consumption of local, healthy products and encourages greater interest in fresh foods, especially fruits, vegetables, and leafy greens.

In addition to food and nutrition education tools, the food produced in the gardens can complement school meal programmes. In some cases, especially in places where there is community participation and collective decision-making mechanisms on the destination of products, surpluses can be sold or distributed in the surrounding communities, multiplying the impact of this pedagogical practice.

School gardens can become spaces for integration and community engagement in school meals through the creation of groups of parents and professionals who organise to take care of planting and maintaining beds.


Photo: WFP

Although they are used in various contexts in Africa, Latin America and the Caribbean, and Asia, examples of school gardens that have become effective pedagogical tools and sources of inputs for school meal programmes on a perennial basis are uncommon. In many cases, there is little institutionalisation and resource flow for projects involving the development of school gardens.

However, there are successful examples around the world. Some countries have achieved integration and articulation of gardens and orchards with school meal programmes. Based on the mapping of successful examples, this publication investigates how school gardens can contribute to the improvement of these programmes and identifies good practices in management, design, and implementation.

2. BENEFITS OF SCHOOL GARDENS

School gardens positively impact communities in a wide range of aspects. Within the scope of school meals, they contribute to reducing food costs by complementing meals with locally grown products, enriching the school menu with fresh foods produced without pesticides and that correspond to the culture of students and their families. Contact with gardens brings students closer to these foods, favours their consumption, and promotes healthy eating practices with potential to reverberate into their adult lives.

Regarding environmental aspects, school gardens raise environmental awareness among students by introducing topics such as recycling and sustainable use of resources. In addition, they help identify and solve local environmental problems, such as maintenance of green areas and waste management.

Due to the multisectoral nature of school meal programmes, its impacts can be observed in several areas such as education, health, agriculture, nutrition, social development, and environment. Regarding the relationship with agriculture, the consumption of food from small local agriculture at school has been increasingly stimulated.

In this sense, the connection between these programmes and the environment gains even more strength since it facilitates the promotion of agroecology actions, consumption of regional and biodiverse foods, responsible use of water and soil, and the use of natural fertilisers.

Therefore, by stimulating short supply chains and the sale and consumption of products from small local producers, school meal programmes contribute to building more sustainable and resilient agri-food systems.

In this context, food and nutrition education actions, with emphasis on the implementation of school gardens, allow students to connect with nature and food production, which provides a systematic construction of knowledge about the act of eating and its implications.

Within the school curricula, gardens enable practical, integrated learning in various disciplines and are connected to popular knowledge. Pedagogically, this integration not only deepens academic knowledge, but also develops cross-cutting skills such as teamwork, environmental care, and values such as responsibility, sociability, and respect for the Earth.

In the professional field, school gardens allow people to build practical skills such as planting techniques, irrigation, fertilisation, harvesting, planning, storage, food seasonality, among others, promoting a truly holistic education. In rural areas, these technical aspects are especially important. By engaging with school gardens, students can be motivated to pursue various professional careers in the fields of agronomy, biology, chemistry, physics, nutrition, among others.

Regarding human and social development, school gardens contribute significantly to shape citizens who are more conscious, creative, and sensitive to socio-environmental causes, therefore better able to face problems and seek solutions for life on the planet.

In cases where parents are responsible for maintaining garden beds, school gardens can strengthen broader community ties regarding school life, educational plans and, of course, bring parents and family closer to the reality of their children's school meals.

These benefits demonstrate that school gardens are not only powerful tools for food and nutrition education and school meals, but they also contribute to achieving Sustainable Development Goals (SDGs) on a large scale, since they promote activities for preservation and environmental care of soil, water, and other natural resources; for the improvement of quality of health, education, and gender equity; and for the cognitive, human, and social development of students, which also reaches their families, creating an impact on this and future generations.

NURTURING SUSTAINABLE FUTURES: THE INTEGRATION OF SCHOOL GARDENS AND TRANSFORMATIVE SCHOOL FEEDING IN ARMENIA

SITUATION

In Armenia, in addition to food and nutrition education tools, school gardens and agricultural facilities are used to increase the resilience of school meal programmes, as they ensure stable demand for fresh food, decrease price volatility, and enable the development of sustainable agricultural practices. The country's school meals place schools at the centre of lifelong learning, benefiting children, parents, and the community. Integrating gardens into the school meal programme represents a multifaceted approach to ensure adequate nutrition for children and to educate students and communities about sustainable agricultural practices.

Since 2010, Armenia's School Meal Programme has been managed by the World Food Programme in partnership with the country's government. After a gradual transition, it was fully transferred to the Armenian government's responsibility in 2022. It currently reaches 111,000 schoolchildren who receive hot meals in 10 regions.

In 2020, the WFP Country Office and the government of Armenia launched a new phase of the Transformative School Feeding Programme. The initiative aims to install sustainable agricultural structures in schools, contributing to resilience and food security.

Photo: WFP

Armenia's Transformative School Feeding Programme articulates school meals with school gardens and sustainable agricultural facilities. Since its launch, it has been responsible for establishing intensive agricultural and orchard projects in more than 50 schools in the country.

The programme involves two models of transformative school feeding. The first, which focuses on school contributions to the community, provides for the establishment of greenhouses, intensive orchards and berry gardens, and systems of irrigation, heating and cooling that contribute to food self-sufficiency through circular models. With all this, it seeks to increase the nutritional value of school meals through a greater availability of fresh fruits and vegetables. In addition, this model allows the provision of agricultural extension services, involving training, technical assistance, and advice on resilient agricultural practices. Within this project, more than 18 intensive orchards totalling 28,270 m², 15 berry gardens totalling 12,460 m², and 21 greenhouses totalling 7,880 m² have already been installed, reaching more than 20,000 students.

Armenia's second transformative school feeding model, known as "Arpi", emphasises community contributions to schools and focuses on generating community investment to fund school meal activities. The "Arpi" model provides installation of solar panels in small and medium-sized businesses, smallholder farmers' property, schools, and community establishments to generate extra income directed to school meals and community development. Through this model, resources generated by excess solar energy from panels installed in orchards and school gardens are reverted to school meals or other needs defined by school committees formed by parents and community members. The Armenian initiative thus provides a higher degree of sustainability, contributing to the self-sufficiency of school meals.

Technical support to the schools is provided by the government of Armenia, WFP and partner organisations. Among its attributions, the government finances hired gardeners that contribute to the implementation of daily activities. To obtain specialised technical aid in the management of facilities, the programme receives support from WFP, research institutions, and non-governmental organisations. Through these partnerships, the programme has created a cost-benefit calculation tool that schools can use to include general information such as investment, harvest, prices, and planting area and receive results on the cost-benefit of developing an agricultural crop. Currently, the government of Armenia considers scaling up the programme to other schools in the country. To this end, it studies strategies to establish processes and regulatory frameworks (including for sale and pricing of products from school gardens), ensure the observance of ethical marketing principles, and guarantee resource flows for training.


Photo: WFP

CHALLENGES

Although there is an innovative model of school meals and the introduction of school gardens, one of the main challenges Armenia faces is ensuring long-term sustainability for school meals. Issues such as training, management and funding remain obstacles. In addition, adapting schools and communities to the new approach can be a complex process. It is essential to ensure that the proposed intervention model is appropriate to local needs and that schools have the capacity to manage the initiatives autonomously.

EMPOWERING COMMUNITIES: INNOVATIONS IN SCHOOL GARDENS AND INTEGRATED MEALS IN BENIN

SITUATION

Benin's National Integrated School Feeding Programme (PNASI) stands out as a national social safety net aimed at improving both school performance and food security for the benefited communities. The programme began in the 1970s with support from the WFP and has been implemented since the 2000s by the Government of Benin, through the School Meals Department of the Ministry of Education, Technical and Vocational Training. It underwent reforms in 2016, standing out among the 300 priority initiatives of the Government Action Programme, which aimed to bring greater economic development to the country.

In 2017, WFP retook its role as implementing partner and has since been working with local non-governmental organisations. In a span of six years, the project managed to expand kitchen services from 30% to 75% of schools, leading the Global School Meals Coalition to recognise Benin for its efforts.

In the Beninese context, school gardens and fields are perceived as valuable tools of food and nutrition education and important mechanisms to increase school meals. The distinction between gardens and fields is due to the area size: while gardens occupy small spaces, school fields cover larger areas and are often the result of donations or land grants by community members.

PNASI's theory of change conceives both gardens and fields as vital components of multisectoral interventions in schools, which are fundamental to the programme's success. The results of these interventions are promising: by 2023, 40% of schools had functional gardens, 29% had community fields, and 6% were involved in raising small animals such as birds and rabbits.

INNOVATIONS

Educational establishments with gardens or fields in Benin usually create specific committees such as "Garden Committees" (Comité Jardin) and "Field Committees" (Comité Champs), or groups such as the "Association of Children's Mothers" (Association des Mères d'enfants) or women's groups. These committees are responsible for maintaining and managing school gardens and fields and deciding on the destination of surplus production (either sale or donation).

In addition to taking care of gardens, which are primarily intended for school meals, these collectives organise themselves to take advantage of the surplus of harvested products that are not used for school meals. An example is Mahukpégo 1 group at Lake Public Primary School in Dangbo, in the Ouémé Valley. Composed of 30 women, the group takes care of the garden and develops income-generating activities to support kitchen operations and increase the participants' income. The surplus production is sold and the revenue is divided by three: one part is allocated for canteen operations, another returns to the group's fund, and the third is shared among the members. The case of the Mahukpégo 1 group illustrates how school gardens can boost women's economic empowerment and gender equality while contributing to more self-sufficient, community-supported school meals.

CHALLENGES

Women's involvement in Benin's school garden committees reflects a complex dynamic influenced by community structures and family roles. While groups led by women such as Mahukpégo 1 integrate transformative initiatives, there are reports of committees composed mostly of men, who make decisions without being actively involved in the maintenance of gardens. In some cases, men take over the initial work of preparing the beds and participating in committees while maintenance is carried out by women or contract employees, who are usually not part of the committees.


Photo: WFP

This disparity reinforces the need to develop approaches that recognise and encourage diverse contributions from women to PNASI and to activities related to school gardens and fields. Only by recognising the importance of women can such initiatives truly reach their full potential.

In addition, Benin's experience shows that school gardens become more permanent when they receive government support to solve infrastructure issues and improve essential conditions for their existence, such as water scarcity. The functioning of school gardens in the country varies considerably according to season, region, and school, lacking uniformity and making it difficult to compare and monitor initiatives. During the rainy season, for example, school gardens can provide a variety of fresh vegetables, especially leaves, herbs, and fruits, which are used to prepare meals when the school is in operation. During the dry season, schools with limited access to water face difficulties in keeping their gardens fully functioning.

These difficulties are not restricted only to school gardens, but they also impact kitchen activities. The high proportion of schools with limited or no access to water represents one of the biggest challenges for school meals in Benin. Additional efforts are needed to ensure water supply, enabling sustainability for school gardens and the school meal programme in the country.

CULTIVATING KNOWLEDGE: INNOVATIONS IN SCHOOL GARDENS AND FOOD AND NUTRITION EDUCATION IN BRAZIL

School gardens, as tools for food and nutrition education, are important components of the Brazilian National School Feeding Programme (PNAE) and a strategic measure to guarantee the human right to adequate food. Law 11,947/2009, which defines school feeding guidelines, included food and nutrition education in the teaching and learning process. This contributes to the development of healthy practices. On another level, the legislation on Guidelines and Bases of National Education treats food and nutrition education as a cross-cutting theme within the school curriculum. The FNDE, which is the entity responsible for the PNAE, reinforces the role of food and nutrition education as a permanent, continuous, cross-disciplinary, intersectoral, and multiprofessional set of training actions aimed at stimulating voluntary adoption of healthy food practices and choices that collaborate for learning, health status, and quality of life of schoolchildren.

In Brazil, the inclusion of school gardens in school curricula and pedagogical-political projects – documents that guide their objectives, goals, and priorities – is decisive to ensure the presence of these initiatives in schools' daily life.

In addition to having school gardens in the educational guidelines, FNDE has been organising the Food and Nutrition Education Day since 2017. It encourages debate and practice of food and nutrition education actions in public basic education schools, highlighting activities they have been executing, such as school gardens. Among the examples, there are schools that develop composting bins, sustainable irrigation practices, and cultivation of unconventional food plants (PANCs), which provides exchange of knowledge, rescue of traditional wisdom, involvement of families and the school community, and encouragement towards healthy eating habits.

Below you will find two examples of good practices related to the creation and maintenance of school gardens in Brazil, drawn from the experience of participants in the 5th edition of the Food and Nutrition Education Day, held in 2023.

Integrating agroecology and sustainability into food production in an Indigenous school

SITUATION

The Yvy Poty Indigenous State High School, located in the Te Yikue village within the municipality of Caarapó, in the state of Mato Grosso do Sul, built a school garden in its space. Tomatoes, peppers, lettuce, cabbage, kale, chard, onions, medicinal plants, and PANCs are produced there. These foods enrich the meals offered to students and help them make healthy choices without losing or forgetting the local culture.

Photo: FNDE

INNOVATIONS

As part of a project developed at the school, students have classes taught by agroecology teachers on PANCs, such as banana navel, guavira (a large tree, whose fruits are known as a symbol of the state), taioba, beans (jopara), heart of palm, queen palm nuts, and coconuts. In addition to classes, students participate in activities focused on agroextractivism and designing recipes.

This process also involves an important school feeding social actor: the supervisor of the School Feeding Council (CAE), a supervisory, permanent, deliberative, and advisory collegiate body established within states, the Federal District, and municipalities. The CAE supervisor's work is to share his/her experience as a technical professional in agronomy, cooperative member, and rural producer of smallholder agriculture, enriching the activities developed with students.

As next steps, the school plans to build a chicken coop where students will be able to manage birds and their waste as part of pedagogical activities. With the creation and maintenance of the chicken coop, the school provides the possibility of applying their natural fertiliser to the garden beds, creating a cycle of local sustainability.

Text BoxIn addition to these activities, the school is developing a recycling project to provide awareness-raising actions and handicraft production through reusing tires and other discarded materials. In the classroom, students and teachers discuss the environmental impact and lifecycle of materials they work with. Then students put their knowledge into practice and decorate the schoolyard.

CHALLENGES

Before the agroecology project was developed at the school, the garden had little production and used pesticides. Currently, only natural fertiliser is used, which strengthens the development of sustainability notions among the school community. Difficulties were also observed with the continuous irrigation of the garden, which students and teacher do manually, and the transport of fertiliser. On weekends, someone needs to be willing to go to the school to do the irrigation, a situation that is common in other countries that develop pedagogical gardens. As for the fertiliser, which comes from afar, the school must pay for the freight, which burdens the institution.

Sharing plants and knowledge in the largest Brazilian municipality

SITUATION

The process of creating the pedagogical garden in the school community of the Clóvis Caitano Miquelazzo Youth and Adult Education Integration Centre (CIEJA), in São Paulo, began in 2019, based on an integrated curriculum project. The project, called Sustainable Planet, was recognized by the Tomie Ohtake Institute's Territories Award, and based on Sustainable Development Goal 2 – Zero Hunger and Sustainable Agriculture.

The development of this space culminated in the creation of the Sustainable Practices Workshop, which consists of optional classes for students to develop agroecological awareness through planting, cultivation, and botanical knowledge. To this was added the development of a suitable place for these experiences, which would serve as a reference for the school community and build agroecological awareness through planting, cultivation, and botanical knowledge.


Photo: FNDE

The school also has a composting bin, which contributes to reusing school kitchen scraps, which leads to a decrease in organic waste and provides fertiliser to enrich the pedagogical garden's soil.

INNOVATIONS

The participants receive technical training and a grant to perform activities in educational units that have gardens. Currently, the School Feeding Coordination (CODAE/SME) monitoring identified 1255 pedagogical gardens, active or in the implementation phase, in the Municipal Education Network of São Paulo.

From the beginning of the project, there has been a partnership with Parelheiros smallholder farmers, who produce organic food in southern neighbourhoods of São Paulo. The proximity with smallholder farmers enriches the project as it provides students with practical experience in agroecological sites, technical contribution for garden management, donation of seeds and seedlings for planting, dialogue and sensitisation of students and educators on the importance of encouraging healthy and sustainable food systems, in addition to supporting short supply chains and local development through the generation of income in the countryside.

CHALLENGES

Despite the institutional support and successful implementation, the CIEJA garden demands permanent care from the entire school community. Therefore, it is necessary to mobilise to keep the activity in the school routine and ensure stable financial resources to maintain the garden, all so that the costs do not fall under responsibility of the school manager and other school workers.

Photo: FNDE


Photo: FNDE

DEVELOPING TECHNOLOGIES: THE PEDAGOGICAL AND SUSTAINABLE SCHOOL GARDEN WITH THE USE OF BIOGAS IN EL SALVADOR

SITUATION

Since 2008, the Ministry of Education, Science and Technology of El Salvador, through the School Feeding and Health Programme (PASE), has implemented the school garden component as a dynamic and interactive strategy for food and nutrition education. This component of the programme grew steadily until it reached a total of approximately 2,000 school gardens in 2019. This strategy was implemented as family and school gardens in approximately 1,045 educational centres by 2022.

In 2011, with coordination and support from the Brazil-FAO International Cooperation Programme on school meals, the country adopted the Sustainable Schools methodology, created by this cooperation. The methodology seeks to strengthen components such as food and nutrition education actions, implementation of pedagogical school gardens, improvement of school infrastructure (kitchen and cafeteria) and the quality of menus offered to students, among others.

The experience of the Cantón Pepenance Educational Centre stands out, which serves approximately 307 students and, since 2008, implements its school garden with the aim of supporting teachers in developing the study programme at different levels of the educational curriculum. Initially, the school garden area was 20 meters. Then it was expanded, allowing production of food and aromatic herbs that are used as natural condiments in the preparation of school meals, which are offered to students by the School Feeding and Health Programme.

The school garden was created to become a sustainable project that enriches learning and strengthens community ties. It not only promotes environmental and agricultural education, but also fosters collaboration among educational institutions, organisations, and the community at large. The support of the Ministry of Education and other entities, such as the Escuela Agrícola Panamericana and the NGO Apoyo Urbano, and active participation of the education community, from principals to parents, demonstrate the joint commitment to the implementation and maintenance of the school garden, improving the full development of students.

Photo: FAO

INNOVATIONS

This sustainability dynamic of the school garden, in force for more than 10 years, strengthened the search for local solutions. One of them was the installation of a biodigester, carried out by the Ministry of Education of the country. Now the equipment is operated by teachers and students. This ecological technology allows the decomposition of organic matter from the school kitchen and garden, producing biogas, which is used in the preparation of different menus offered to students. The action reduces the use of propane gas for food preparation by 50%, using organic waste efficiently.

Another important innovation was using the school garden as a pedagogical tool, a space for socialisation, learning, knowledge exchange, and for experimentation with the different dimensions of food.

The diversification of food in the school garden is increasing every year. Work began with planting onions, garlic, carrots, and cilantro. Currently, cabbage, cucumbers, tomatoes, celery, parsley, basil, green onions, and aromatic and medicinal plants such as mint, aloe vera, and rosemary are also grown.

After the Ministry of Education institutionalised the initiative and the school principal got actively involved, several teachers began to use the garden as a didactic resource, encouraging and connecting garden activities to the school curriculum.

The school gained new life with the garden, as students now look after areas that used to be abandoned. Currently, the school garden of the Cantón Pepenance School Centre has grown to 220 square meters, producing a variety of foods and replicating this experience with the entire education community. The main impacts observed are:

i) the creation of a teaching methodology that positively influences school life and the study of different disciplines; ii) alliances with different institutions;
ii) students' interaction with the garden, which favours change and improvement of their and their families' eating habits; iv) the possible replication of school gardens in children's homes, generating knowledge and promoting awareness in the local community about environmental issues and food production.


Photo: FAO

CHALLENGES

The garden maintenance throughout the year (especially on weekends, long holidays, and school vacations) is a permanent challenge to school professionals and students, similar to what was reported in one of the Brazilian cases. To face it, the school seeks support from the community. However, it is not always possible to guarantee it.

Other challenges are the optimisation of water use, since the country faces long droughts during the year, and the need to ensure permanent involvement of all school professionals in the garden implementation project.

SOWING KNOWLEDGE: THE EDUCATIONAL ROLE OF SCHOOL GARDENS IN A SAINT LUCIA SCHOOL

SITUATION

Since 2012, Saint Lucia has implemented the Sustainable Schools methodology, which aims to establish schools as benchmarks of sustainable school meal programmes. Created by the Brazil-FAO International Cooperation Programme with the country governments, this initiative includes components such as interinstitutional and intersectoral coordination, food and nutrition education practices with school gardens, improvement of school infrastructure and establishment of direct purchases from smallholder farming.

The country has increasingly recognised the importance of ongoing collaborations between the ministries of agriculture and education in implementing school gardens and expanding the local food supply.

Another important factor is the high rate of chronic non-communicable diseases, such as diabetes and obesity. As children and young people are the main consumers of "fast food", the need to promote healthy eating habits in new generations increases. The garden is an important ally in this process.

School gardens have the potential to play a fundamental role in students' development, facilitating group work, collaboration, and interaction between them, since various educational activities are promoted there.

With support from the Brazil-FAO International Cooperation Programme, a garden was implemented in the Fond Assau Agricultural School. This school is in the community of Babonneau, Saint Lucia, in the Caribbean. It has 160 students, of which about 50 participate in garden activities every school year. These young people work to improve the area's resilience to prevent damage caused by landslides. They built spaces for composting and rainwater harvesting.

The school garden began operating in 2016 to provide meaningful learning experiences and contact with nature, in addition to contributing to the development of students' motor, social, emotional, and cognitive skills. The garden activities are led full-time by a teacher dedicated to the subject, who has inspired students and other school staff. Since its implementation, the garden continues to be maintained due to the results it achieved, changes in students' eating habits, and involvement of the teaching staff. Another motivation is the government support the school receives to acquire inputs for its maintenance.


Photo: FAO

INNOVATIONS

One of the innovations is the use of technology allied to school garden activities, such as the fertilisation-irrigation system, which allows simultaneous application of fertilisers and water. The creation of this system was only possible thanks to the organisation of teachers and students around the challenge of planting and harvesting food at school.

The school has been promoting multidisciplinary experiences: practical work, such as planting and sowing, plant care, harvesting, food consumption and, in some cases, selling products. The food produced in the school garden is destined for students' nutrition. The surplus production is sold to avoid losses, reduce waste, and generate income for the school.

The school garden provides an opportunity to combine theory and practice. Many school subjects, such as mathematics and science, are reinforced through outdoor classes where students learn to solve equations, take measurements, and calculate the profitability of production, among other activities. It also allows them to get in touch with nature and increases their awareness of environmental issues and climate change. Finally, there are other innovations such as integration into the curriculum, use of organic matter, and practices to promote a healthy lifestyle.

Students also receive seedlings and seeds to plant at home, applying the knowledge they learned in school and building references of this practice with other members of their families. The experiences generated and received by students have been valuable for the entire school community because many were unaware of the impacts of food on their health. With this activity, they became more aware and able to make healthier food choices.

CHALLENGES

One of the main challenges is finding innovative ways to integrate curriculum subjects with activities in the school garden. In addition, keeping the space fully functional and thriving is difficult due to limited human resources, as caring for the school garden requires continuous work, time, and dedication. This becomes more difficult during school vacations and holidays.


Photo: FAO

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