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Public Policy Management Healthy Markets: Municipio of Santa Cruz de la Sierra, Bolivia

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1. INTRODUCTION

The development of markets in Santa Cruz has been unplanned, and the issues that beset them go beyond the deficient environment for the sale of food products and, poor hygiene and food-handling conditions to include social problems generated by poverty. Food vending--which is rapidly growing — has become a subsistence activity given the dearth of formal employment, a situation that makes it difficult to organize the markets.

The Municipio of Santa Cruz de la Sierra (Bolivia) is responding the challenge and embarking on an effort to improve its markets through the Healthy and Productive Markets Program, promoted by PAHO/WHO, as an alternative for improving health, education, hygiene and sanitation in food sales and handling.

The initial results have been very positive; the program has been given institutional status and is currently in the consolidation phase.

The different phases and stages of the interventions showed that it is possible to reverse the situation.

2. BACKGROUND

Many of Santa Cruz's residents live in the outskirts of urban areas, where the rate of poverty and social marginality is approximately 60%.

A study on food contamination in the city's busiest markets, conducted by the interagency task force, has determined that up to 45% of the food is contaminated with fecal coliforms at levels above 100 microorganisms per gram. These levels imply a high risk of diarrheal diseases. The clearest example was seen in a sampling of different foods from city markets, which found higher-than-permitted quantities of bacterial contaminants such as aerobic mesophiles, coliforms, *Escherichia coli*, and *Staphylococcus aureus*.

Moreover, there are substantial risks associated with chemical contamination, pesticides, and insecticides in food resulting from poor storage practices or improper or unregulated pesticide management.

All of this amply justified the Healthy Markets Initiative, whose first interventions began in 2003, when the first demonstration market began its activities, which included the application of methodologies suited to the local context.

3. VISION

A productive, functional, modern Santa Cruz de la Sierra, with an efficient system for selling products and with healthy, clean, orderly markets that guarantee safe food.

4. OBJECTIVE

To contribute to improving sanitary and hygienic conditions in the supply, sale, and consumption of food in the markets of the municipio of Santa Cruz de la Sierra to promote health and improve the quality of life.

5. METHODOLOGY

The methodology and interventions are based on the principles of health promotion and community participation and key concepts of food safety (WHO).

The principal focus of the methodology used was intersectoral work; that is, it involved public and private institutions and agencies, forming the Food Safety and Healthy Markets Committee, with representatives from the Ministry of Health and the Departmental Health Service (SEDES), the National Agricultural Health and Food Safety Service (SENASAG), the Universidad Gabriel René Moreno, the Chamber of Meat Industries, and representatives from the vendors' association.

6. PHASES OF THE PROGRAM

1. Developing methodologies and instruments in a demonstration market
2. Replication in other markets
3. Constructing market policies and institutionalizing the program, thus ensuring its continuity and sustainability

Phase one

The processes to be implemented consisted of several phases:

Sensitization. Phase in which the public was made aware of the benefits, and arguments in favor of the undertaking were presented.

This process involved different sectors: local authorities, the vendors' association, neighborhood councils, people's health committees, universities, nongovernmental organizations, and other potential strategic partners.

The following were the most salient activities:

- Advocacy with municipal authorities to explain the Healthy Markets initiative
- Enlisting of support and advocacy with potential strategic partners
- Workshops for consensus-building with all sectors
- Raising of awareness among social and consumer organizations
- Encouragement of direct stakeholders to participate in the initiative in the markets, showcasing the economic and health benefits and disease prevention as the principal arguments

Baseline

Through surveys and focus groups, a participatory diagnosis of problems and general conditions in the markets was conducted, covering infrastructure, hygiene, contamination levels, services, employment and self-employment, knowledge levels, etc.

The universities lent their support, and their participation was important, especially for gathering information and preparing the respective assessment.

The research was conducted using simple language to facilitate comprehension of all of the problems and seek joint solutions.

Strategic planning

The information was disseminated clearly and there was an exchange of opinions on preparing the plan of action, from the perspective of vendors, consumers, and quality-control staff from the municipio, to identify and prioritize the interventions by consensus, with a view to addressing the problems identified.

In the improvement process, the main actors were the vendors, who intervened in all the operations, from identifying problems to searching for solutions.

In addition, market administrators, consumers, as well as the authorities—in their respective contexts of action—also took part in the process.

The following activities were carried out:

- a. The information was presented in a straightforward manner.
- b. A description and analysis of the problems were prepared in writing, based on the following questions:
 - How will the activity be carried out to solve the problem?
 - In light of its urgency and importance, when will the activity be carried out?
 - How much will it cost? How are the expenditures going to be covered?
 - Will who be responsible for each activity?
 - How long will it take to solve the problem?

Education and training for vendors, administrators, gendarmes, and consumers in food hygiene and handling

All food handlers in the participating markets should receive training in food handling and hygiene, through a course sponsored by the municipio and PAHO that will cover the following topics:

Healthy and productive markets: Definition; Objectives; Benefits; Conditions for certification; Importance and role of food handlers in consumer health.

Food contamination, principal contaminants, conditions that cause contamination.

Foodborne diseases; Definition of foodborne infections; Causative agents; Food poisoning; Influence of environmental factors; Determinants; Nature of food; Water; Air

Personal hygiene of food handlers; Personal cleanliness; Health of food handlers; Habits; Health certificate for food handlers; Food handling; Handler cleanliness and habits; Hand and fingernail washing; Work clothes; Cleanliness of locations where food is handled; Utensils and maintenance.

Sanitary conditions of the markets and food stands or other sites where food is prepared: Location, buildings, floors and corridors, walls, ceilings, windows, doors; basic services: water, sewerage, lighting, ventilation and ducts, solid waste and trash disposal, sewage and wastewater disposal; toilet facilities; Installations for personal hygiene; Sanitation Services: Protection against pests or insects; Protection against rodents.

Handling and hygiene for different categories of food (meat, grains, dairy products, vegetables, fruits; food service).

Improvement and added value to products sold as an element of efforts to improve the economic performance and productivity of market vendors.

Customer service, public relations.

Evaluation, monitoring, and follow-up system

An evaluation tool that makes it possible to analyze the degree of compliance with requirements and is used to certify healthy markets.

Before markets were certified as healthy, an evaluation was conducted, based on parameters set forth in the regulations promulgated through a Municipal Administrative Resolution.

The activities carried out were:

- a. Drafting of evaluation, monitoring, and follow-up manuals.
- b. Formation of a technical team for evaluating, monitoring, and following-up on certified markets.

6.1.5.1. Requirements and basic conditions that the market must meet to apply for certification as healthy

The requirements that a market must meet to be certified as healthy were determined in a joint workshop with all the principal actors (all the confederations and associations of vendors, social organizations represented by the neighborhood councils, representatives of the territorial grassroots organizations, people's health committees, the Departmental Health Service, SENASAG, and public and private universities: Universidad Gabriel René Moreno, Universidad Evangélica Boliviana, and Universidad Técnica Santa Cruz.

The working groups considered what would be essential to begin improving the markets.

Based on the conclusions of this event, the Municipal Administrative Resolution on Healthy Market Certification was prepared. This is a legal instrument that verifies compliance with all the regulations issued for this purpose.

The evaluation is conducted by the Multisectoral Certification Committee

The certification criteria are summarized below:

Infrastructure

- a. Must be made of durable materials that are easy to maintain, clean, and disinfect.
- b. The following specific conditions should be considered, particularly with regard to food safety:
- c. Wall surfaces, dividers, and floors should be waterproof and made of nontoxic material.
- d. Walls and dividers should have smooth surfaces up to a height adequate to ensure food safety.
- e. Floors must permit adequate drainage and cleaning and be made of hard material to prevent slipping.
- f. The conditions of surfaces with which food comes into contact should be appropriate and made of durable materials that are easy to clean, maintain, and disinfect, as well as smooth, nonabsorbent, nontoxic, and inert.
- g. All damaged or irregular surfaces will be repaired immediately, as will any flaws, such as cracks, dents, or other irregularities that facilitate the accumulation of food remains and dirt.

Water and basic services

- a. An abundant supply of drinking water shall be provided through appropriate installations.
- b. Drinking water shall be supplied by:
 - The public network.
 - Other sources, such as wells and springs, that comply with legal water-safety standards.
- c. If there is no drinking water supply, adequate installations (deposits, tanks, etc.) shall be provided for water storage and shall be made of impermeable, noncorrosive, nontoxic material, ensuring that the water does not have any taste, odor, or other substance not permitted in the regulations. Tanks, containers, and pipes shall be designed to prevent the water from being contaminated, especially by the materials used in the construction of the installations, rodents and other pests, dust, dirt and rain.

Garbage and refuse

- a. Garbage should not be allowed to accumulate; this will prevent contamination in areas where products are sold or handled and other areas that can affect food safety.
- b. Containers should be available to store the garbage, which should be disposed of in a timely manner to avoid filling the containers beyond their capacity.
- c. Once the garbage is disposed of, the containers should be cleaned and disinfected with the proper frequency to reduce the possibility of contamination.
- d. Food stands shall have a trash can, which should be emptied frequently to prevent the garbage from accumulating or being stored for long periods.

Cleaning and disinfection of facilities and pest control

- a. There should be a cleaning and disinfection program to guarantee that all market areas are sufficiently clean.
- b. The cleaning and disinfection program, as well as its application, shall be verified.

Pest control

- a. There should be a pest control program guaranteeing that the market is free of pests, rodents, and vermin.
- b. The physical, chemical, or biological pest control should not put food at direct or indirect risk.
- c. Any pesticides used should have received the approval of the competent regulatory authorities and should be used according to the instructions on the label.

Food stands

- a. Food stands should be clean and orderly.
- b. Food should be covered and refrigerated.
- c. Food should not be placed close to floors or toilets.
- d. The equipment and utensils used in food stands should be properly washed.
- e. A suitable detergent should be used.
- f. Machinery and equipment should be clean.
- g. Dented or chipped utensils should not be used.
- h. Food stands should be cleaned and disinfected at the end of every workday.
- i. Food products should be stored on platforms or shelves located 20 cm. from the floor and the walls to permit the circulation of air and people and prevent spoilage from moisture.
- j. There should be enough shelves, and their layout should be appropriate and facilitate cleaning.
- k. Foods should be grouped together by type for storage.

Product composition

- a. Uncontaminated, good quality products shall be offered in healthy markets.
- b. Meats offered for sale must be from certified slaughterhouses that verify the quality and safety of their products.
- c. Vehicles used for transporting food, especially meat, should be clean and have sufficient space to guarantee food safety and quality.
- d. Samples are collected for analysis and microbiological monitoring of the food sold in the market to verify that it is safe.

Food preparation

- a. Food served to the public should be protected and covered and, if appropriate, refrigerated, and it should be stored in areas with adequate ventilation.
- b. Raw and cooked food should be kept separate to prevent cross-contamination.
- c. Food should be fully cooked, especially meats, chicken, eggs, and fish.
- d. Plates and bowls should be held by the rims, lids by the handle, glasses by the bottom, and cups by the handle.
- e. Food should be kept at the proper temperature.
- f. Refrigerated food should be kept at below 5°C, and food to be served hot should be heated to above 60° C.
- g. Safe water and ingredients should be used.

- h. Drinking water should be properly treated; appropriate processed foods should be selected, and fruits and vegetables should be washed properly.
- i. Canned food should be used before the expiration date to ensure safety.

Hygiene at food stands

- a. Under no circumstance may food stands at markets be used as places for sleeping or living.
- b. Food stands should be organized by the type of products that they sell, with specific sections for meat, poultry, fish, fruits, grains, dairy products, cold cuts, etc.
- c. Tables and display cases in the markets shall be uniformly aligned, and every effort will be made to avoid allowing the space for these cases and tables to encroach on corridors and similar areas.
- d. Food for sale shall not be placed directly on the floor.

Equipment and utensils

- a. Equipment should have the following properties:
 - It should protect food from contamination.
 - It should be easy to clean.
 - Its operation and cleanliness should be easily verifiable.
 - It should be installed in a manner that allows the surrounding area to be cleaned.
- b. Equipment surfaces should be smooth and be free of breakage, open joints, cracks, wood shavings, dents, or similar flaws where microorganisms can persist and multiply.
- c. Dishes should be washed in containers with clean water; the water should be changed continually; and the containers should be used only for this purpose.
- d. Dishes should be washed with soap and water and rinsed directly under the faucet with running water to remove all detergent and dirt.
- e. Pots, plates, and ladles shall be made of enameled iron or stainless steel, and enamel surfaces must be uniform and must not be chipped; the use of clay containers and wooden utensils is prohibited.

Health conditions of market vendors

- a. Food handlers shall possess a food-handler card issued by the competent authority.
- b. Persons suspected of being carriers of foodborne diseases should stay away from food-handling areas whenever there is a significant risk that they will contaminate products.
- c. Employees with open wounds, cuts, or skin lesions or who have colds or infectious diseases must not handle food or touch surfaces on which food is directly placed, unless the wound/lesion is duly covered by waterproof gloves or another means.

Personal hygiene

- a. The good personal hygiene of food handlers/vendors should be verified.
- b. Vendors/food handlers must wear protective clothing, including hair coverings, and, insofar as possible, suitable footwear.
- c. Concerning personal hygiene, food handlers are required to project an image of cleanliness and to bathe daily; their fingernails should be trimmed and clean; and their hair should be clean and short or pulled back.
- d. Food handlers must wash and disinfect their hands properly before starting work and before and after handling food, as well as:
 - After using the restroom
 - After smoking, eating, or coughing
 - After handling money
 - After touching animals
 - After handling containers, food waste, and refuse
 - Immediately before touching food
- e. In addition, upon entering the food-handling area and between handling raw food and cooked food.
- f. Protective clothing should be clean and changed daily, or as often as necessary.
- g. Hair coverings are mandatory.
- h. Nonvendors/food handlers should avoid poor habits such as smoking, eating, chewing [gum] sneezing, or coughing around food; wearing jewelry, including watches, earrings, or similar items that are not to be worn in food-handling areas.
- i. Food handlers who touch and sell raw products such as meat, cold cuts, and bread are required to wear gloves, as are food handlers who cook or prepare food.

Conservation

- a. All high-risk food should be refrigerated (or the time during which it remains unrefrigerated should be kept to a minimum) at the temperatures recommended for each type of food, such as:
 - Meat and meat byproducts.
 - Milk and dairy products.

Phase two

Once the first market had been certified as healthy, there was follow-up, working together with the Food Safety and Healthy Markets Committee.

Replicating the experience in other markets: Seven markets in the Municipio of Santa Cruz are in the process of being certified.

Phase three

The recently created Consumer Protection Department is responsible for spearheading and regulating food supply activities and implementing the healthy markets policy in the Municipio of Santa Cruz.

The Food Safety and Healthy Markets Committee supports the Markets Planning Department; in addition, the consumer education component is being promoted through this Department.

7. RESULTS

The principal results of the process are summarized below:

The methodology used gave us the tools and experience required for effective intervention in the markets.

Consensus-building allowed the different agents involved (authorities, trade association members, food vendors, and administrators) to examine their own finances and environmental conditions and attempt to institute beneficial changes. This participatory process elicited a commitment to improve market conditions and services.

The comprehensive perspective needed for market management requires not only training in good hygiene and food handling practices but the proper delivery of food in its different states; it also requires basic infrastructure as well as attention to and education of the public.

For this reason, the work involved a systemic approach that took these issues into account. In addition, a series of workshops was held to build consensus among the parties involved and impart the techniques that would give us the tools and experience needed for effective intervention in the markets.

We have seen that motivation, understanding, and training, as tools of change, have made contributions to the sector, improving the economic situation of the actors and strengthening their identity with a project designed and executed by them. All of this yielded concrete results.

Based on the problems identified in the markets, the process was constructed from the bottom up, as the improvements needed were defined jointly. Thus, it was the stakeholders themselves (association members) who identified the problems and decided how to use their resources to solve them.

Health education has always been one of the mainstays for guaranteeing food safety and quality; however, it should be part of a plan that goes beyond talks given to passive participants and should have clearly defined objectives centered on selective analysis of the principal problems to be addressed—too much information hinders the learning process.

Over time, the demonstration market, which began the process with social and economic disadvantages, succeeded in making knowledge an element of empowerment, creating a more concrete vision of the problems, the potential of the sector, the community, and intersectoral participation in the development process and sustainability, notwithstanding all the bureaucratic difficulties.

7.1 Principal benefits identified:

7.1.1 Benefits for inspectors

The general conditions of the markets improved in terms of health and convenience for consumers, as did the monitoring of food safety. Inspections were facilitated. Sanctions and fines decreased. Relations between vendors and inspectors improved, as they worked as a team with common goals. The health of the population improved. Workplace satisfaction and cooperation increased.

7.1.2 Benefits for vendors

Recognition by consumers and the community. Higher sales and income. Vendors had a guaranteed source of income. Improvement in the quality of products. Fewer losses and less waste. A clean and pleasant workplace environment. The health of the vendors and the population improved. Higher satisfaction and self-esteem.

7.1.3 Benefits for consumers

We now have wholesome and safe food. The quality of purchases has improved, because consumers have learned to recognize the good characteristics of the food. Losses and waste have decreased.

A clean and pleasant environment for making purchases. Disease prevention. Courteous treatment. We are familiar with and exercise our rights as consumers.

7.1.4 Other benefits

In addition, the change generated by public opinion gave rise to the creation of the Market Planning Department, whose main purpose is to establish healthy markets in the Municipio of Santa Cruz and project their image as healthy. The markets were decentralized and district-level supply centers were created, with the existing ones rebuilt or remodeled. Operations were regulated under the standards established for the healthy markets.

This experience in the Municipio of Santa Cruz served as a model for implementing the initiative in other municipios. Work is currently under way in the municipio of Yapacaní (which is close to being certified as an agricultural market), and the municipios of La Paz, Sucre, Cochabamba, and others.

At the international level, Paraguay and the Dominican Republic have shown an interest in the model.

8. CONSTRAINTS

The principal barriers were the constant turnover among the authorities and staff of the municipios and government agencies and the wariness of vendors because of bad experiences in the past in terms of their treatment by local authorities, not to mention the bureaucracy and red tape of the municipios (slow and complicated).

9. CONCLUSIONS

The program's good results can be attributed to the participatory effort; consensus-building among the actors; the creation of the multisectoral committee, headed by the municipio; media support; and, primarily, to the program follow-up.

Commitment and motivation, as well as imagination, creativity, participation and a shared sense of responsibility made it possible to develop the potential and capacities for improving overall health and hygiene conditions.

The expected results were achieved in:

- a. The beneficiaries' sense of ownership of the initiative.
- b. Institutionalization of the project by the municipal government, ensuring its sustainability and continuity. Replication has begun in all the markets of Santa Cruz.
- c. The availability of resources was ensured and, within the structure, market administrators were identified as facilitators of the process.
- d. Participatory instruments were developed, facilitating identification of the needs and requirements of the markets.
- e. A sizable number of food handlers were trained.
- f. Information was disseminated among the population on correct food handling.
- g. The municipal government has model guidelines that have been adapted to local conditions in order to certify its markets as healthy.
- h. The model serves as the basis for replication at the provincial, national, and international level.
- i. Commitments have been assumed by the institutions involved.
- j. These results usher in a new mid- and long-term perspective for modifying conditions in the markets of metropolitan Santa Cruz de la Sierra.

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