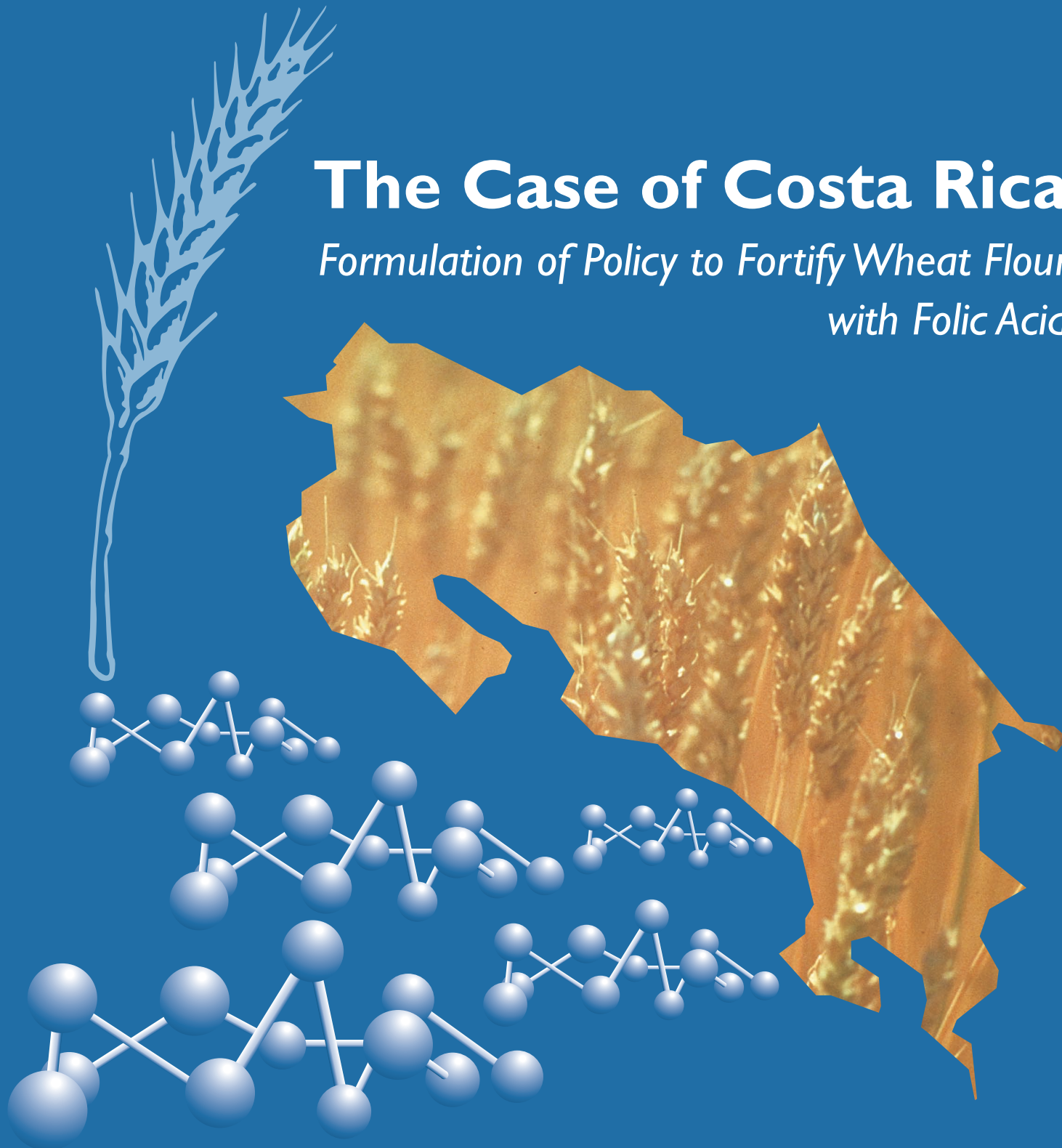


The Case of Costa Rica

*Formulation of Policy to Fortify Wheat Flour
with Folic Acid*



A Final Report by the CARMEN Policy Observatory on chronic noncommunicable disease policy, Costa Rica, 2006



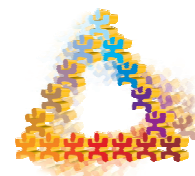
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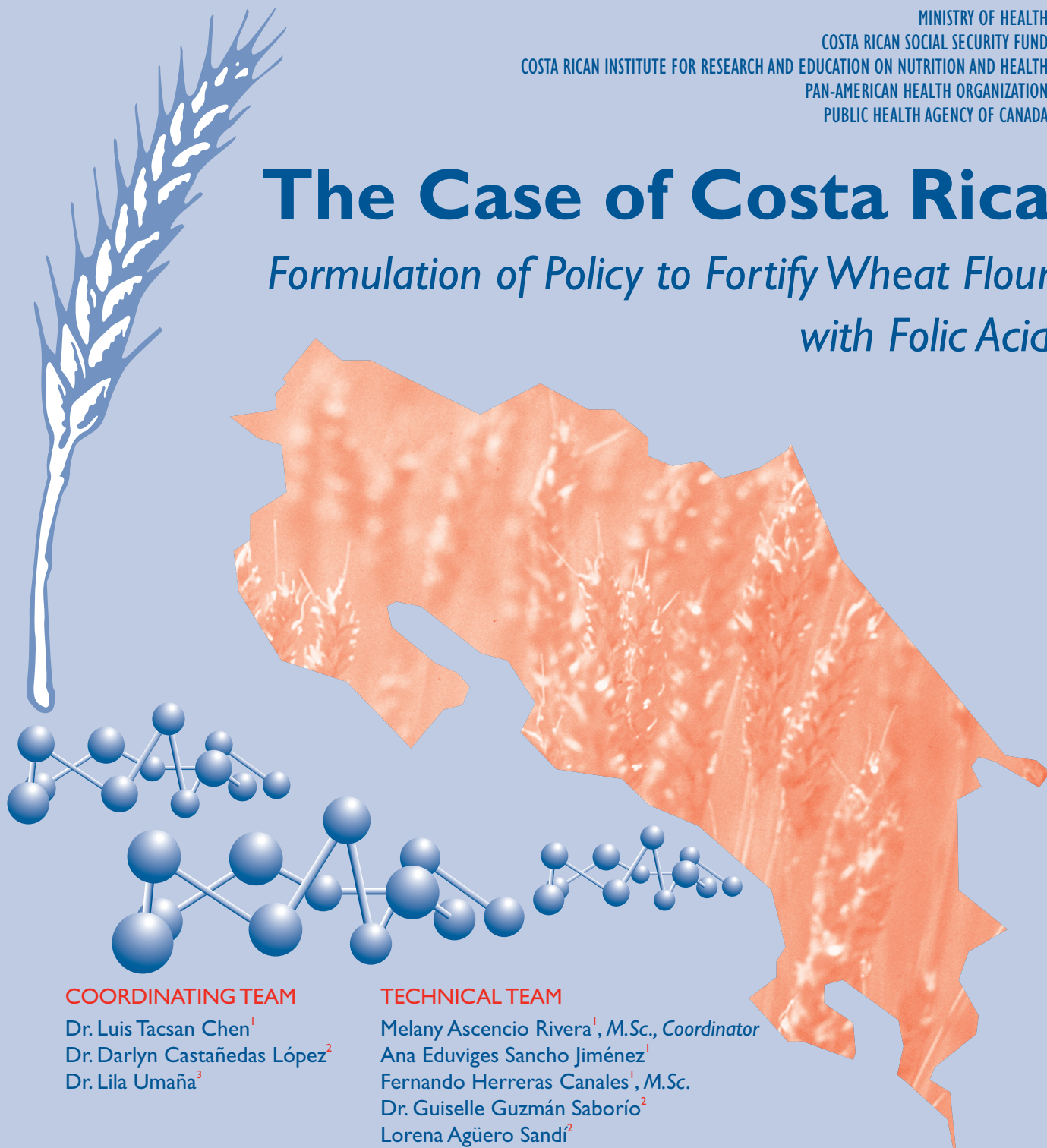
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CARMEN

The Case of Costa Rica

Formulation of Policy to Fortify Wheat Flour with Folic Acid



COORDINATING TEAM

Dr. Luis Tacsan Chen¹
Dr. Darlyn Castañedas López²
Dr. Lila Umaña³

TECHNICAL TEAM

Melany Ascencio Rivera¹, M.Sc., *Coordinator*
Ana Eduviges Sancho Jiménez¹
Fernando Herreras Canales¹, M.Sc.
Dr. Guiselle Guzmán Saborío²
Lorena Agüero Sandí²
Dr. Ileana Quirós Rojas²
Gabriela Solano Mora², M.Sc.
José Alberto Sequeira Guevara², M.Sc.
Marta López Hernández⁴, M.Sc.
Gioconda Padilla³, M.Sc.

ADVISORY TEAM

Dr. Roberto del Aguila⁵
Jessica McDonald⁶, M.Sc.
Dr. Clarence Clotney⁷

¹Health Research and Technological Development Directorate, Ministry of Health

²Health Services Development Directorate, Costa Rican Social Security Fund

³Costa Rican Institute for Research and Education on Nutrition and Health

⁴Regional Management and Health Services Network Branch, Costa Rican Social Security Fund

⁵Pan-American Health Organization

⁶Consultant

⁷Public Health Agency of Canada

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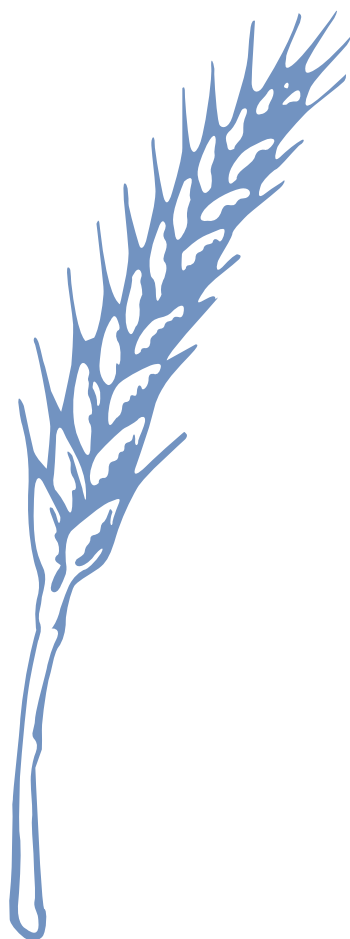
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I. INTRODUCTION

Noncommunicable diseases have become one of the main public health problems in many countries; in Costa Rica they are the main cause of general mortality. A series of initiatives aimed at preventing them has therefore been undertaken; one of them is the creation of the CARMEN Network, which Costa Rica joined in 2000.

CARMEN (the Set of Actions for the Multifactorial Reduction of Noncommunicable Diseases) is a comprehensive approach to noncommunicable chronic diseases (NCD) that has been established in many countries, and which has served as the basis for formulating effective policy and actions to prevent and control such diseases in Latin America and the Caribbean.

In 2003, the CARMEN Network—whose purpose is to promote a joint agenda for integrated NCD prevention through greater technical cooperation among countries in the Americas—promoted creation of an NCD policy observatory, with support from the WHO Collaborating Centre for NCD Policy in Canada, to promote a culture of formulating evidence-based policies.

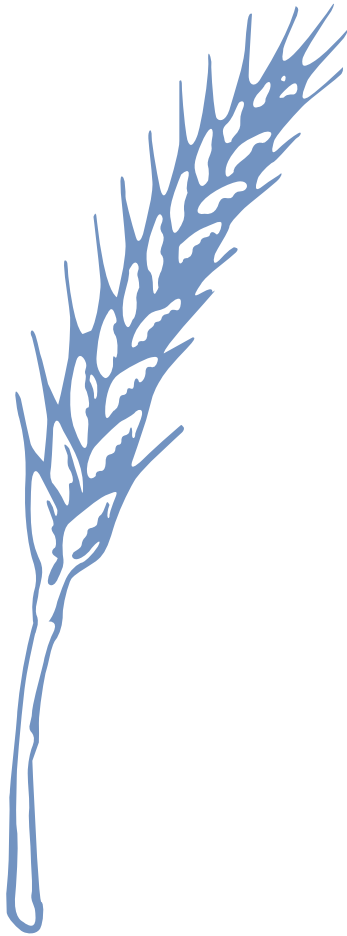
As one of the countries in the CARMEN Network, Costa Rica committed itself to creating the NCD Policy Observatory, jointly with Canada and Brazil, based on case studies focused on the formulation and approval of public policy in the area of nutrition, making it possible to analyze and compare these processes in the three countries. In Costa Rica, it was decided to carry out a retrospective analysis of the experience of formulating, negotiating and approving the policy on fortifying wheat flour with folic acid, which contributes to the reduction of congenital malformations. This policy served as the basis for developing this inter-country project.

This document discusses results of the research carried out on this case study to generate evidence for health policy formulation. The case study deals with an already-approved policy that showed its impact on reducing the prevalence of deficient folate levels in women and



on the incidence of neural tube defects. The study discusses the context in which the policy was generated, provides details about the elements of the process that promoted or hindered its approval, the sectors that participated, and their negotiations and interests, as well as the State's successes and errors during this process.

This document provides fundamental information which serves to highlight the relevance of establishing the NCD Policy Observatory in Costa Rica to promote the analysis and evaluation of public health policy. By doing so, the country has subjected its public policy formulation and approval to systematic regulations that provide scientific, timely and updated information to effectively and efficiently face health problems.



II. BACKGROUND

Costa Rica's political and administrative characteristics

Costa Rica is located in Central America, with an area of 51,100 km²; it is bordered to the north by Nicaragua, to the southeast by Panama, to the east by the Caribbean Sea, and to the west by the Pacific Ocean. For political and administrative purposes, the national territory is divided into 7 provinces and 81 cantons; however, for planning purposes, it is divided into 6 regions: Central, Central Pacific, Chorotega, Brunca, North Huetar and Atlantic Huetar.

It is a democratic country whose judicial, economic and social institutions are based on the Political Constitution of the Republic created in 1949, which also abolished the army in the same year (MH, 2002).

Power is exercised by three different and independent branches: Legislative, Executive and Judicial. Legislative power is exercised by the Legislative Assembly. As indicated by its name, the executive power is the governmental authority and is exercised by the President of the Republic and its ministers as representatives of the people. Judicial power is exercised by the Supreme Court of Justice and legally established courts. Representatives of the first two branches are elected by popular vote every four years.

The health sector includes the Ministry of Health, the Costa Rican Social Security Fund (CCSS), the Costa Rican Water and Sewage Institute (A&A), the National Insurance Institute (INS), universities and municipalities.

The Ministry of Health is the governing body of the country's health sector; its power was strengthened in 1994 with a structural adjustment that reorganized the health sector. Since that year, the Ministry of Health has directed and guided the political and operational process to produce a healthy society, with assistance from other civil society and political organizations to identify health problems and design and execute interventions.

The CCSS, for its part, is in charge of direct comprehensive attention to individuals through health promotion, prevention, treatment and rehabilitation.

Health and demographic indicators

In 2004, the total population of Costa Rica was 4,248,508, of whom 50.8% were male and 49.2% female. Most of the population was concentrated in urban areas (71.3%). Population growth for that year was 2.8% (INEC, 2005).

According to the population census in 2000, the Costa Rican population is aging, with a reduction in the population under 15 years of age compared to 1950, and an increase in the population 56 years and older. The dependency ratio in 2004 was 60/100 (INEC, 2001).

Life expectancy at birth of the Costa Rican population has been increasing, from 76.0 years in 1996 to 77.4 years in 2000 and 78.4 years in 2004. For 2005, the figures were 81.0 years for women and 76.2 years for men (MH, 2005).

Infant mortality is low and decreasing, at 9.2/1000 births in 2004; the overall mortality rate has remained stable at low levels (3.7/1000 persons).

Regarding overall mortality, diseases of the circulatory system (10.5/10,000 people in 2003) have been the leading cause of mortality for more than 10 years, followed by tumors (8.2/10,000 people), which is to be expected, given that longer life expectancy also increases people's exposure to chronic-disease risk factors such as inadequate diets, sedentary lifestyles, smoking and stress. In this group, the leading causes were heart disease and stroke, which are closely related to lifestyle (MH, 2005).

The CARMEN/CINDI initiative

A series of actions to prevent noncommunicable diseases (NCD) have been undertaken, in Europe through the Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) program, and in Latin America and Caribbean countries through the CARMEN initiative.

Both programs promote implementation of the Health for All Strategy in a practical way, providing participating countries with an

“... approach or framework for activities to prevent and control risk factors that are common to a number of NCDs, such as smoking, high blood pressure, high blood cholesterol and excessive alcohol consumption, as well as addressing social and environmental determinants”. (PAHO, 1997)

The CARMEN initiative is based on the principle of inter-sectorial, multidisciplinary community action, involving all sectors that are responsible for creating socio-economic, physical and cultural contexts that promote health and provide opportunities for choosing a healthy lifestyle.

The purpose of this initiative is to improve health by reducing morbidity and mortality rates through actions focused on prevention and health promotion, thus reducing common NCD risk factors such as an inadequate nutrition, alcohol abuse, physical inactivity, and psychosocial stress (Morice, 1998).

In Costa Rica, the National Executive Committee is in charge of this program, with participation by the Ministry of Health (coordinator), the Ministry of Public Education, the Costa Rican Institute for Research and Education on Nutrition and Health (INCIENSA), the Alcoholism and Drug Addiction Institute (IAFA), the Costa Rican Social Security Fund (CCSS), the Central America and Panama Nutrition Institute (INCAP-PAHO), and the

PAHO representative in Costa Rica. Its actions are intended to establish an organizational and functional structure that, through a multisectorial approach and strategic alliances, will formulate national policy and guidelines for the initiative in this country. Likewise, it will do:

“...comprehensive, interinstitutional and multidisciplinary work that acts on conditioning factors of noncommunicable diseases individually and collectively” (MH, 2000).

In 1998, the Project was included in the Guidelines on Health Policy for the 1998–2002 governmental period, and by the end of 1999 the initiative was implemented in the central canton of the province of Cartago, producing important actions and achievements (MH, 1999).

CARMEN NCD Policy Observatory

The countries of the Americas face common regulatory challenges regarding NCD prevention policies, since critically important knowledge about the effectiveness of certain policies is lacking and pertinent information for decision-makers and representatives of the region's organizations is scarce (PAHO et al., 2005).

Based on those challenges, and on the need to acquire expertise in systematic policy analysis and evaluation, and to provide support to those in charge of formulating effective and comprehensive NCD prevention policy, PAHO member states at the CARMEN Network meeting in Brazil in November 2003 asked Canada, through its WHO Collaborating Centre on NCD Policy, to carry out a fundamental effort to establish an NCD policy observatory in the Americas.

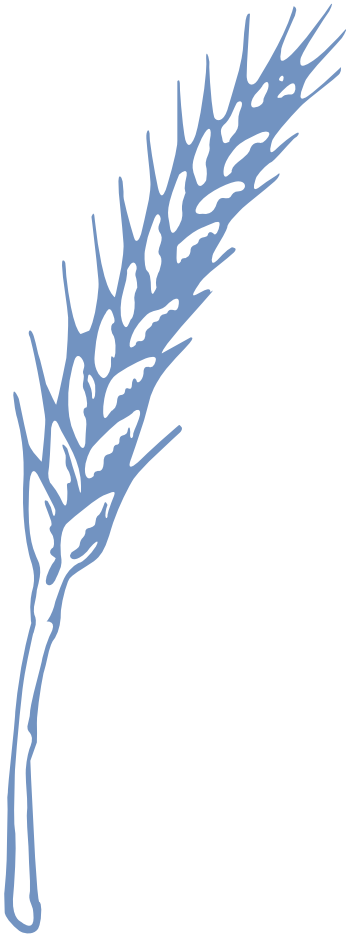
The observatory's goals are:

- To support the formulation of effective and comprehensive NCD prevention policy through systematic analysis of the processes involved in the formulation, adoption, and execution of such policies,

and relating this analysis to an evaluation of programs and interventions established through these policies.

- To strengthen multisectorial collaboration in adopting complementary policies that will maximize NCD prevention.
- To give NCD prevention a more prominent place in policy-makers' agendas.

Implementation of the observatory using the case of folic acid for food fortification is compatible with national objectives, such as those established in the 2004–2008 National Food and Nutrition Plan (MH et al., 2004), whose Policy No. 3 is “*Good, Timely, Gender-Sensitive, Comprehensive and Intersectorial Malnutrition Prevention and Control*”: strategies 3.3, 3.4, 3.5. The observatory is also compatible with the 2005–2010 National Agenda on Research and Technological Development in Health Care (MH, MICIT, UCR, 2004), specifically, with the *health systems and policies (strategic action 5)*, and with *food and nutrition (strategic actions 5 and 6)*. It also establishes a new approach to NCD efforts and provides a platform for further investigations, for joint actions in creating national public health policy and decision making in the countries and among health agencies, institutions or other international organizations.



III. FRAMEWORK

The framework for this research was proposed by the CARMEN Noncommunicable Diseases Policy Observatory (Clottey, 2005), based on a four-step policy cycle consisting of policy formulation followed by implementation, evaluation and feedback. For the purposes of this research, emphasis was given to the initial stage of the cycle, i.e., formulation of policy that guides the actions to be taken, which has three phases:

- Setting the agenda, including recognizing the problem and placing it on the agenda.
- Defining the problem, including describing the problem, its causes and possible solutions.
- Decision making, when policy-makers decide to adopt a policy to face the problem.

This first stage of the cycle has three steps, corresponding to policy formulation, negotiation to make it viable, and approval.

The observatory's proposal also includes discussion of six basic concepts that interact among themselves and contribute particular characteristics to each process in the formulation of public policy. These are context, ideas, policy interests and conflicts, institutions and governmental agencies, policy instruments and action plan.

Context is related to people's living conditions and resources owned by individuals and collectives (in the public and private spheres) to confront their health needs and problems. The dynamics that establish the direction of the determining factors of health and disease, to either improve or impair health, are evident in the context.

The social response to health-related problems and needs may be translated into policies, programs and services that must take contextual elements into consideration and whose relevance and scope must be determined. Therefore, the prevailing political, social and

economic circumstances when policies are created will define the current elements that favor or hinder the process, as well as the relevant social forces acting at that time.

The actors who participate in policy generation, as well as the general population, have their own values and criteria according to their ideological orientation. These ideas represent beliefs and values of different groups and individuals, and reflect different positions with respect to an issue or problem, thus influencing policy. Current research on policy issues provides information not only about the issues but also about the approach and values involved.

Thus, ideas that are shared and accepted by important groups and relevant to them are the seeds for formulating public policy.

In the same way, particular interests play an important role in policy formulation. When a series of interests converge and interact in different groups or on a specific issue, they become policy networks.

There are both public and private interests. Groups and individuals with definite interests become interest groups, and they interact in both the formal and the informal structure.

These groups have different resources and ways of interacting among themselves:

“Interest groups are constantly trying to present their point of view about a problem that affects them to the person in charge of formulating the corresponding policy. Some of these groups are well organized and have considerable resources. Frequently, this capacity enables them to be taken into account in policy formulation processes before other groups with less resources. Up to a certain point, governments depend on interest groups with significant resources to help them make decisions regarding specific problems” (PAHO, 2005).

When a government decides to place an issue on its agenda for discussion and perhaps policy formulation, it does so through its institutions:

“These are the formal structures and processes through which those in charge of formulating policy make decisions about public policy issues. Formal structures include the government’s executive, legislative and judicial branches; formal rules created through legislation, regulations and judicial decisions, and formal structures (divisions, organizations) and processes are created by the various government branches ” (PAHO, 2005).

Depending on the government’s organization, institutions may or may not establish links with each other in such a way that the various sectors can establish their policies, and then perhaps establish a comprehensive approach to a specific health-related need or problem, either dealing directly with the problem or need itself, or orienting the approach towards its determining factors.

Likewise, governments use a series of political instruments that are a combination of resources to approach policy-related issues, consisting of inputs and outputs of government activities, such as legislation or regulations at a national or international level. These instruments may or may not be coercive in nature.

The effectiveness of these instruments is related to the context in which they are applied, as well as to the prevailing environment when they are formulated and applied.

For a policy to work, there must be an operating plan, i.e., the interaction of policies of the different government sectors, which makes it possible to obtain a health result—specifically reducing the load of major diseases or conditions in the population—because they have an effect on their determining factors.

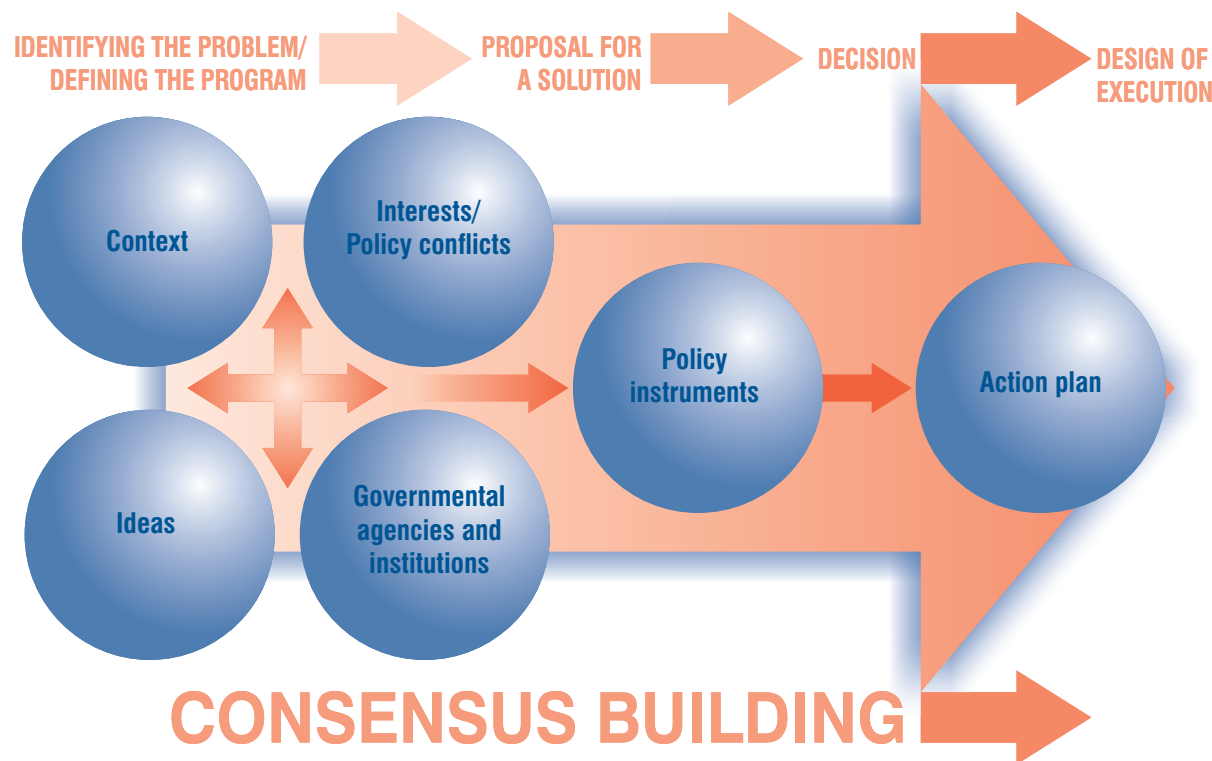
Observing the interaction of this set of elements leads to systematic analysis of

those which facilitate and those which hinder formulation and execution of the policy in question. At the same time, it contributes in a certain way to building consensus that will make it possible to arrive at the final phase of policy formulation. This is shown in Chart I, which summarizes all these elements.

For this reason, policy formulation includes a series of elements involved in the complexity of social relationships, and unequal distribution of resources and power, making it necessary to use different mechanisms to formulate and negotiate policy.

As previously indicated, when policy is being generated, various groups and individuals interact, and a series of ideas and interests arise that

Chart I: Analytical framework – Policy formulation phase



Source: WHO Collaborating Center on NCD Policy, Canada Public Health Organization and PAHO. Methodology Report Project. March 18, 2005.

Government makes policy to meet the public's needs and regulate interactions among citizens. It has to make the political decisions, but with participation from individuals and groups that are immersed in a complex social system, including individual and collective expressions of national identity, ethnicity, culture, ways of acquiring goods and services, differentiated economic structures, public election mechanisms, organization of groups (Ayala, 1997).

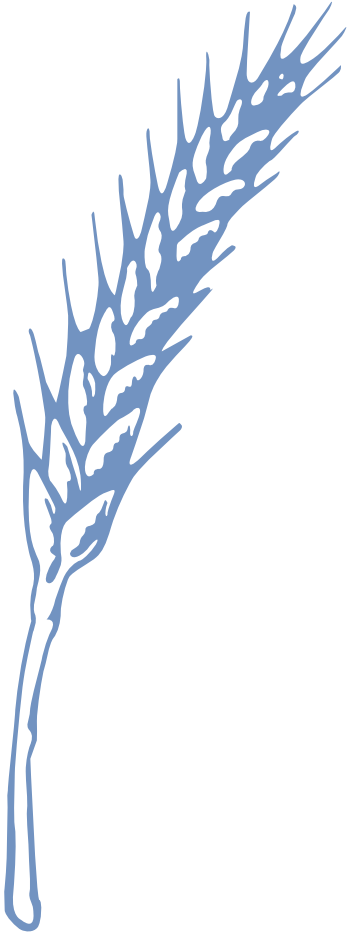
will also lead to alliances and conflicts. These constitute the social actors, defined as:

“individual or collective subjects that, acting in their own interests, hold the capacity to meaningfully intervene in the situation, or have power that enables them to play a determining role in the policy development process” (Purcallas, 1979, p. 231).

In the policy analysis process, it is necessary to understand the players as policy is formulated, negotiated and approved. Purcallas, 1979, proposes considering the following characteristics of social actors:

- a. **Intentions:** including ideology, idealistic projects, concrete plans, tendencies and reactions to past situations, and values. This information helps to understand the value which each actor places on policy formulation.
- b. **Capacities:** the political power of each actor; their resources, creativity, how they act and how they work. This provides information about the behavior and resources controlled by each actor, which give them a certain political weight when formulating policy.
- c. **Needs:** the actors' requirements for their plans, their demands and most obvious dissatisfactions. This information helps to understand the interest each actor may have in creating a certain policy.
- d. **Alliances and conflicts:** agreements or disagreements with other actors, leadership ability and capacity to mobilize other actors toward their interests. This information makes it possible to understand the possibilities for building the required consensus for policy formulation.

The objectives of the investigation discussed in this document are to identify social actors and analyze how those characteristics discussed above combined to facilitate or hinder formulation of the policy to fortify wheat flour with folic acid.



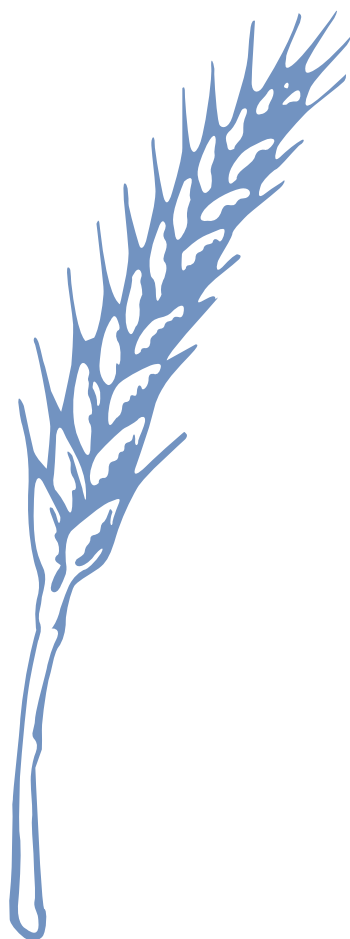
IV. OBJECTIVES

General purpose

To analyze how the policy to fortify wheat flour with folic acid was formulated, negotiated and approved in Costa Rica, to obtain evidence for formulation of health policy.

Specific objectives

1. Identify how the policy to fortify wheat flour with folic acid was formulated, negotiated and approved.
2. Explore the main conditions and factors affecting formulation and approval of this policy.
3. State the lessons learned in the design, implementation and interinstitutional and inter-sectorial approach to the formulation and approval of this policy.



V. METHODOLOGY

This investigation was carried out according to the qualitative research methodology proposed by the NCD Policy Observatory, based on case studies. Case studies are defined as:

“descriptions and intensive analyses of a single unit or specific system, such as an individual, a program, an event or group, an intervention or the community” (PAHO, 2005).

As previously indicated, the case of Costa Rica deals with the formulation and approval of the policy to fortify wheat flour with folic acid. A qualitative research methodology was used for a more in-depth and comprehensive analysis of the nature, circumstances, context and characteristics of this case.

A team of nine investigators carried out the research. They were employees from the Ministry of Health, the CCSS, and INCIENSA previously trained in qualitative research methodology, and were accompanied by an expert on qualitative research during the different phases of the research process.

Sources of information

Sources of information included documents about the subject, and key informants. These sources were chosen in such a way that contrastable data could be obtained about the diversity of perspectives involved. The methods used were document review and analysis, along with in-depth interviews of key informants.

Document review and analysis

Technical documents, government plans, official reports, correspondence from the relevant period, newspaper and magazine articles, and official decrees were analyzed, as well as information from other sources such as journal articles. The documents were selected according to the criteria of experts on the subject, and are listed in the bibliography.

A guide for the review and analysis of documents was prepared, and key concepts established in the framework for in-depth interviews (Annex 1). This helped the researchers classify the information gathered.

In-depth interview

In-depth interview was defined as follows:

“...a face-to-face encounter between researchers and informants seeking to understand the informants’ perspective regarding their life, experiences or situations as they express them in their own words” (Taylor and Bordan, 1998).

As a qualitative method, an in-depth interview is not intended to have a restricted direction established by the researcher, or to be structured or standardized—it is basically open. It is also based on the premise that investigators themselves are the research tool, rather than a protocol or interview form. It is based on an interview guide that guides the encounter, but does not determine its outcome.

In-depth interviews were carried out to learn about the different perspectives of actors participating in the process of formulating and approving the policy to fortify wheat flour with folic acid, making it possible to retrieve the internal dynamics of a complex process involved in formulating public policy in a specific case.

To achieve this goal, an interview guide was created with open questions (Annex 1), making it possible to delve more deeply into the subject, guided by basic concepts of the framework:

- Context
- Ideas
- Interests and power
- Institutions
- Policy tools
- Policy action plans

The review of documents and interviews with key informants permitted cross-checking of information, making it possible to ensure the investigation’s internal validity.

Interviewers received training to carry out the interviews, as well as to play an observer’s role. Each interview was carried out by two investigators: one conducting the interview, and the other as an observer, taking notes of relevant elements in a research diary and providing support to the interviewer as required.

Interviews were recorded with previous consent from interviewees, and then transcribed by a person trained to perform that task. Transcriptions were then reviewed by interviewers and handed back to interviewees, so that they could check them, correct them or add whatever they deemed pertinent (member control). Final versions of the interviews were then analyzed. Each interview was assigned an alphanumeric code to ensure informant anonymity.

Before the interview was conducted, all key informants received information about the nature of their participation in the study and were asked to consent to participation and sign a document indicating that they understood and accepted the terms in the corresponding document (Annex 2). They were assured of anonymity, that any report of the results would be generic and not attributed to any particular person, organization, project or institution.

Selection of key informants

Interviewees or key informants were selected according to their knowledge, experience and work on the subject of the policy to fortify wheat flour with folic acid in this country. Even though the “snowball” sampling method was initially considered, selection was made based on criteria from the technical team that conducted the process of formulating this policy, using responses to the following questions:

- I. Who are the experts in wheat flour fortification?

2. Who are the people with most expertise on wheat flour fortification policy?
3. Who were the persons who participated at that time in the process of formulation, negotiation and approval of this policy?

Twenty-two persons were selected, of whom 20 agreed to be interviewed:

- Two officials from the Ministry of Health (political level).
- Six technicians from the Ministry of Health (2 medical doctors, 4 nutritionists) who participated in the policy formulation process or belonged to the Nutrition Division of the Ministry of Health when the policy was formulated.
- A technologist from INCIENSA who participated in development of the Nutrition National Survey and in the policy formulation process.
- An attorney who represented the Ministry of Health, processing legal instruments such as decrees, regulations, and other policy instruments, and participated in the process of formulating and approving the decree to fortify wheat flour with folic acid.
- A representative from the Ministry of Economic Affairs who participated in negotiations with the industrial sector and in preparing the decree.
- Two representatives from INCAP who had an active role in the policy formulation process.
- A representative from UNICEF who provided advice to the Ministry of Health technical team at that time.
- Two technicians who worked in Pharmaceutical Company A and participated in the policy negotiation process with the industrial sector.

- Three persons who held managerial positions in milling industries when the policy was formulated, negotiated and approved.
- A manager from the food industries association who participated in policy negotiation and approval.

The research team coordinator made the first contact with interviewees by telephone. During this first contact, they were provided with information on the case study, at which time their consent was requested and an appointment for the interview was scheduled. Most people were interviewed only once, but two of them were interviewed two or three times each.

Data analysis

From research diaries used by investigators during the interviews and a study of documents, researchers prepared memoranda with their impressions, interpretations and questions that arose during the interview process. Therefore, data were analyzed throughout the investigation process, and not just after they had been collected.

In addition, the research team performed a content analysis of the documents and interviews through an open-ended coding process. Data were closely examined, breaking them into parts through microanalysis to find the meanings contained in the words used by interviewees, and information found in the documents. A systematic inductive consideration of the subjects and data trends was used to classify ideas and concepts into categories according to their primary characteristics.

Then an axial coding process was used to establish relationships among categories and sub-categories for questions of when, where, how and what consequences.

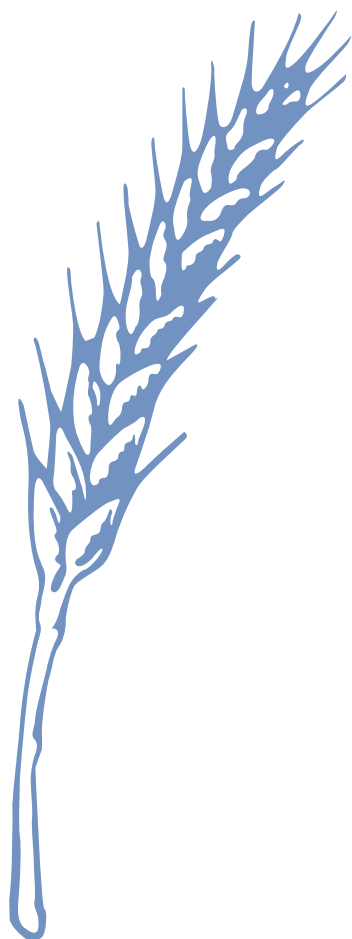
The meanings drawn from the data were then interpreted within the context in which the policy

formulation process took place. Structural and process elements were identified (Strauss and Corbin, 2002). The term “structure” refers to the conditional context in which policy formulation took place, while the term “process” is defined as the sequence of actions and interactions that occurred during policy formulation over time. This made it possible to understand how analysis categories were expressed through the policy formulation development process. In this way, it was possible to detect conditions and factors that facilitated or hindered this process.

As indicated by these authors:

*“... the structure or conditions define the scenario, i.e., create the circumstances under which problems, issues, facts or events related to a given phenomenon arise or occur. The process denotes the action/interaction, through time, of the people, organizations and communities, regarding certain problems and issues. Combining structure and processes enables analysts to perceive some of the complexity that is an important part of life (...) If you study only the **structure**, then you learn **why**, but not **how** certain events occur. If you study only the **process**, then you understand how people act and interact, but not why. To come to understand the dynamics and evolving nature of events, one must study both the structure and the process”.* (Strauss and Corbin, 2002, p. 139)

The results produced by following the logic indicated above, showing how the context articulated (structural conditions) with the process of interaction among the various social actors to achieve the policy formulation, are presented below.



VI. ANALYSIS OF RESULTS

Context of policy formulation

To understand how the policy to fortify wheat flour with folic acid was formulated, negotiated and approved, it is necessary to analyze the scenario and circumstances that made it possible. The phenomenon is placed in context, i.e. a structure of conditions that framed the actions and interactions of different social actors, providing this policy formulation process with particular characteristics. The process of formulating, negotiating and approving this policy occurred in 1997, and putting it into context implies relating it to the country's situation at that time.

Economic model and food security⁸

The 1980s and early 1990s in Costa Rica were characterized by complex economic, social and political transformations. There was a transition from a state-regulated economy to an open free-market economy. With regard to food security, in the 1970s and early 1980s, national food policy was based on food availability through local provision of staple products. As a result, domestic policy was geared to government regulation of prices, subsidy of domestic products, and import and export tariffs and licences to achieve food self-sufficiency in a timely and stable manner from an inward-looking development model sustained through protectionist measures. (Costa Rican Government, 1997).

In the early 1980s, the country underwent an economic crisis that resulted in an important deterioration of macroeconomic indicators. The inadequacy of the Import Substitution Model (ISM) used in the country since the late 1950s became evident. After this crisis, there was a stabilization period during which measures were taken to reduce fiscal and trade imbalances and to control inflation. Government spending was

⁸ Food security "is the condition in which all people enjoy access to the food they need in a timely and permanent way, in the proper amount and quality, for their adequate consumption and biological use" (INCAP/PAHO, quoted by the Costa Rican Government, 1997).

reduced, and the cost of living rose due to rises in charges for public services and taxes, while salary austerity policies were imposed.

To stabilize the balance of payments, the dollar exchange rate was adjusted, and exports were encouraged, replacing the Import Substitution Model with the Export Promotion Model (EPM). This was followed by a structural reform process that extended from the late 1980s to the early 1990s. This reform was motivated not only by the exhaustion of the ISM, but also by pressure from international financing organizations, especially the International Monetary Fund (IMF) and the World Bank (WB), which demanded greater external opening and increased participation of the private sector (Villasuso, 1998).

In the late 1980s and the 1990s, changes were even more oriented to an outward-looking development model. The opening of trade which began in 1985 with the structural adjustment programs (PAE I and PAE II) and Costa Rica's accession to GATT in 1990, the passing of the Competition and Effective Defence of Consumers Law in 1994, and government reorganization in the 1990s, reflect a substantial change that had an effect on the state's intervention mechanisms in the national market for staple products.

The structural transformation was reflected in various ways. From the economic perspective, the starting premise was that international trade must be the motor of development, which required national competitiveness in external markets under the rules of free trade. This implied elimination of distortions caused by state intervention in the markets, which had an impact on imposed protectionist barriers that previously permitted restriction of imports in order to protect domestic production. At the same time, economic blocs arose, seeking to strengthen regional commercial actors, grouped around negotiation processes and agreements inside the blocs where the nature, volumes and direction of trade flows were established.

Competitiveness thus emerged as a new value that entailed necessary adjustments in the public and private sectors. The state had to assume a facilitating role in production, the market and the agro-industrial sector, abandoning its interventionist role. National and international policies became subject to global economic trends.

In the case of the flour industry, which interests us here, Costa Rica imported wheat flour from the United States until the late 1960s. When the import substitution model was developed, the first national wheat-processing industry appeared in 1967 (Mill 1), under the Industrial Development Law. This mill was a monopoly for more than a decade, and wheat supply was concentrated and regulated by the state through the National Production Council (CNP). With the liberalization of the national economy, the second mill (Mill 2) appeared in 1979, and for the first time the wheat flour production monopoly in the country was broken. The CNP lost control of wheat imports, and import barriers and price control barriers on wheat and bread disappeared.

As described by an interviewee, by 1997

"The country had undergone an opening process, and liberalization of old barriers to free trade. In the case of flour mills, a privatization process of imported wheat to the country had occurred (...) Price control for wheat flour and breads and their by-products had been abolished. It was a process in which there was a great deal of competition between the mills, because the large mill (Mill 1) that had had the monopoly here was competing for the first time against a small mill (Mill 2)" (INF19).

State reform, health sector reform

The economic crisis of the 1980s and macroeconomic stabilization policies that began at that time also challenged the sustainability of the Costa Rican social welfare state, raising concerns

about the effectiveness and efficiency of public expenditure on health care. From that time on, government reorganization processes started to directly involve most of the country's welfare and social assistance institutions.

In health care, the Health Sector Reform Project was approved and its execution began in 1994 with support from international organizations such as the Inter-American Development Bank and the World Bank. For Costa Rica, the reform entailed extensive institutional transformations intended to generate greater efficiency; among them, the segregation of institutional functions for provision of public health services, and administration carried out by the state. This implied a reorganization of institutions; for instance, some functions and resources, such as those related to health promotion and disease prevention, that had been assumed by the Ministry of Health were transferred to the CCSS, while the Ministry of Health was assigned the exclusive role of governing the health sector.⁹

Güendel (1997) summarized this situation as follows:

“The Health Sector Reform Project has led the discussion toward reform instruments, and proposes a target image of the public health system based on three aspects: 1. Development of a comprehensive health care model combining quality ambulatory and in-hospital medical attention, preventive actions, and community participation in health care. 2. Strengthening the state's governing and regulatory role through the formulation of coherent policies that would articulate the national health system. 3. A resource allocation model that separates financing of services production to rationalize the management approach.” (Güendel, 1997, p. 114).

⁹ According to Miranda (1997, pp. 161-162), the administrative role of the Ministry of Health is understood as “the ability to make all technical and social entities of the health system that are responsible for providing services do so in coordination, subject to quality and cost standards, as integrated parts executing health policies dictated by the Ministry responsible and approved by the National Health Council”.

However, one weakness of this approach observed at that time by the author is the lack of strong financing for the Ministry of Health, which raised doubts about its political capacity to assume strong leadership and to be able to exert the required pressure to govern the sector.

The country's economic status in 1996

Placing ourselves at the time when the policy under study was created, we see that the Third Report on the State of the Nation in 1996 (Proyecto Estado de la Nación, 1997), which falls in that time period, states that the economic recession and transition to a more open and less regulated economy had exclusionary effects on some parts of the population, especially affecting women and rural areas, tending to widen structural equity gaps within the country. The report stated that the national financial base did not have sustainable conditions for poverty reduction.

It also stated that 1996 was one of the worst years for the country's economy since the crisis of 1980–1982. Overall and per capita production decreased in real terms for the first time in 15 years, and there was visible deterioration in the labor sphere (increase in open unemployment, as well as in visible and hidden underemployment, and the rate of underemployment of the work force reached almost 14%).

Loss of dynamism in the economy leads to increased poverty, and the report mentions decreases in the purchasing power in the middle and low income groups of the population. Poverty, which had been slightly decreasing over the previous years, began to increase between 1994 and 1996. The poor from the countryside and families that lived in extreme poverty had more difficulty than the rest of the population in overcoming these circumstances. Noticeable equality gaps were seen between urban and rural populations, and between the central region and the rest of the country. The worst living conditions within the country were in cantons near the coasts or borders, and in those regions that

were more dependent on agricultural production for the internal market, especially in the case of producers of basic grains such as corn and beans. In addition, natural disasters such as Hurricane Cesar had major consequences, with losses in the millions, once again affecting the poorest people of the country and putting more pressure on the government to pay for damages.

According to data provided by the Statistics and Census Branch (DGEC), in 1995 households representing 20.4% of the country's total population¹⁰ lived in poverty; this figure rose to 21.6% in 1996. According to data from the 1996 Multipurpose Household Survey, the income of 141,477 families was under the minimum required to purchase the Basic Food Basket (BFB)¹¹, meaning that 13,551 families had been added to the poorest groups in the country (DGEC, 1996, quoted by the Government, 1997).

On the other hand, a restrictive monetary and fiscal policy reduced public-sector investment. Private investment stagnated, and imports increased moderately, while growth rates for exports were far below the average of previous years. This happened in an economy that was increasingly open to international markets.

Health status¹² in 1996

By 1996, life expectancy at birth was estimated at 76.3 years: 79.2 years for women and 74.5 years for men. The overall mortality rate reported that year was 4.2 per 1000 people, and the infant mortality rate was 11.8 per 1000 born alive. This last rate was part of a systematically decreasing pattern since 1986, when the rate was 17.8 per 1000 live births. The four main causes of infant mortality between 1991 and 1997 were:

1. Diseases during the perinatal period
2. Congenital malformations
3. Respiratory system and cardiovascular diseases
4. Infectious and parasitic diseases

In the 1990–1997 period, mortality for the first five groups of causes showed a similar trend: mortality caused by circulatory system diseases occupied first place, with a rate of 11.1 per 1000 people, and second place was occupied by tumors, with a rate of 7.8 per 1000 persons.

Evolution of the population's nutritional status

Before 1996, four national surveys had been carried out (in 1966, 1975, 1979, and 1982) to observe trends in the population's nutritional status, in particular maternal and infant nutrition. In 1966, the nutritional profile of the Costa Rican population was very similar to that of third-world countries. These problems included caloric-protein malnutrition, vitamin A deficiency, endemic goiter, and iron-deficiency anemia. In 1966, 57.4% of the population under six years of age was malnourished, and 13.7% had moderate or severe malnutrition. This situation started to improve through the promotion of health policies such as strengthening the National Nutrition Program, promoting the primary health care strategy, and social welfare programs aimed at social groups with limited economic resources; an improvement in the population's standard of living also contributed to the change. By 1982, a considerable reduction in the percentage of malnutrition among school children had been achieved (30.9%).

Five height censuses had also been taken with first-grade students between 1979 and 1989, and comparative data showed that the percentage of girls and boys with height retardation had decreased from 20.4% in 1979 to 9.3% in 1989 (Ministry of Health, 1995).

¹⁰ Costa Rica's estimated population in 1996 was 3,202,440, of which 50.1% (1,604,305 individuals) were male and 49.9% (1,598,135) were female (State of the Nation Project, 1997)

¹¹ The BFB is defined as "The group of foods expressed in sufficient amounts to satisfy, at a minimum, the basic caloric needs (energy) of an average household of a reference population" (INCAP/PAHO, 1992, quoted by the Government, 1997)

¹² Ministry of Health, 2000.

Malnutrition decreased, while overweight became an increasing problem in children and adults, particularly among women, marking a change in the population's nutritional profile that became more similar to that of developed countries. (MIDEPLAN, Panorama Nacional, 1996, quoted by the Government, 1997)

The different surveys show that people had deficiencies of several micronutrients, principally iron, iodine, vitamin A, and fluorine. Anemia of nutritional origin was identified as a problem in 1966; it is primarily caused by iron deficiency, and to a lesser degree by folic acid deficiency. Measures adopted to reduce this problem included daily supplementation of iron for pregnant women and for children under one year of age, as well as wheat flour fortification with iron and other vitamins.

Prevalence of endemic goiter due to iodine deficiency was 18% in 1969; thanks to salt iodization, it went down to 3.5% in 1979. Retinol (Vitamin A) deficiency was also detected as a public health problem in 1966, affecting 32.5% of preschool children with low and deficient serum retinol values. By 1979, only 2.3% had this condition, and in 1981 it decreased to 1.8%, thanks to the enrichment of sugar with vitamin A that started in 1974, and the distribution of whole milk to 30% of preschool children. However, this measure was discontinued in 1980, which brought back vitamin A deficiencies in the population. At the same time, the problem of dental cavities caused by lack of fluorine was met with salt fluoridation beginning in 1983, which produced favorable results.

Since the 1994–1998 administration, there had been concerns about the anemia suffered by people in the country, and a special concern for reducing the level of poverty.

The National Health Policy of 1994–1998 set the following social goals:

“Assisting the most economically and socially vulnerable in the population, particularly children,

adolescents, the elderly, native people and the disabled, seeking to ensure real equality of opportunity” (Ministry of Health, 1995, p. 38).

During this administration, three fundamental policy instruments were developed which placed nutritional problems on the agenda. They were:

- A declaration to create and execute an agri-food and nutritional plan, signed by the Costa Rican Government on World Food Day, October 1994.
- A national anti-poverty plan, November 1994.
- A national health plan, placing priority on attention to anemia.

Following these guidelines and the country's health needs, the Ministry of Health established actions for taking care of nutritional problems and iron deficiency anemia as a health priority, as shown in the following documents:

- A 1995 Ministry of Health Annual Report, stating that *“Promoting nutritional food security and preventive nutrition”*¹³ was a strategic action under the National Health Policy to 1994–1998, because it had been determined that 35% of children and pregnant mothers covered in the study of growth and development had iron-deficiency anemia.
- The comparative study on the nutritional status of preschool children covered by the Primary Health Care Program in Costa Rica between 1994 and 1995 showed an increase in moderate malnutrition from 2.01% to 2.65%, and in mild malnutrition from 16.1% to 19.6%, with a slight nutritional deterioration among those under 6 years of age who were covered by the Primary Health Care Program (Ministry of Health, 1997, p. 3).
- The results of the 1996 National Nutrition Survey were an important input

¹³ Idem, p. 41

to guide policies, plans and programs on food and nutrition, making it possible to identify nutritional problems, as discussed previously.

All of this helped to create the conditions to place the specific anemia problem on the health agenda. Later, the problem of congenital malformations would be addressed as part of health problems related to folic acid deficiency.

Identifying the problem and placing it on the agenda

Faced with this situation, it became evident that it was urgently necessary to carry out a fifth national nutrition survey that would indicate the evolution of nutritional problems in the country, with up-to-date information.

The survey results showed a decrease in moderate and severe malnutrition between 1982 and 1996, which went from 6.3% to 5.1%. Mild malnutrition went from 24.6% to 17.3% in the same period. Preschool children showed a decrease in moderate and severe height retardation, going from 7.6% in 1982 to 6.1% in 1996. Mild (height) retardation dropped from 21.7% to 15.3%.

Caloric-protein malnutrition is not now considered to be a public health problem; however, this is not the case with micronutrients, and micronutrient deficiencies are known as “hidden hunger” (because in general, the symptoms of such deficiencies are not visible at first glance).

The 1996 survey showed that iodine and fluorine deficiencies were no longer nutritional problems in the population; the country had reached the goals set for the year 2000. On the other hand, a high deficiency in micronutrients was found, such as vitamin A deficiency, which again became a health problem. It also showed that nutritional anemia continued to be a moderate public health problem with a 27.9% prevalence among pregnant women, 26.0% among

preschool children, and 18.9% among women of child-bearing age. The main cause was iron deficiency¹⁴ (44.6% of pregnant women and 24.2% of preschool children had their reserves depleted), followed by folate deficiency; the prevalence of this deficiency among women of child-bearing age was 24.7% and among preschool children, 11.4%.

Iron deficiency problems persisted, with a constantly high prevalence of iron-deficiency anemia since 1966. This problem has been greater in rural areas, where the average rate is 32.7%, as opposed to 16.6% in urban areas, regardless of sex (Ministry of Health, 1997^a).

Folate deficiency is not only associated with anemia. Folic acid is an essential nutrient for the development of children’s neural tubes during the embryonic phase. However, survey results show that deficiencies in this micronutrient were exclusively related to anemia.

This shows that extensive sectors of the population are consuming deficient diets, both in quality and quantity, and, as stated by one of the informants, alimentary patterns are increasingly poorer, monotonous and deficient in micronutrients:

“...the diet of Costa Ricans is becoming increasingly monotonous. There is not as much variety as there used to be, when things were a little better, and everybody could eat gallo pinto¹⁵ (...) Foods of animal origin are consumed with less frequency every day, and are more expensive;

¹⁴ Iron is an essential component in the formation of red blood cells, whose main function is to carry oxygen throughout the body. Among nutritional anemias, the most important ones are the result of dietary deficiencies of iron and folic acid. Worldwide, they are an important public health problem, due to their magnitude and relevance to countries’ economic and social development. Anemia is defined as a reduction of hemoglobin levels in the blood; it varies with age and sex, and the most vulnerable groups are pregnant women, children under 6 years of age, and women of child-bearing age (15 to 44 years old), because they require greater levels of iron and other micronutrients. For instance, women of child-bearing age lose some blood every month when they menstruate. (Press release, Deputy Minister of Health, 5/27/1997)

¹⁵ Traditional food made by mixing rice and beans.

even vegetables and grains are consumed with less frequency every day. It therefore becomes necessary to add micronutrients, so that the population can have access to them” (INFO 1).

In the findings of the 1996 survey, the technicians in charge stated that:

“Therefore, the recommendation is to review, adjust, and strengthen, in the short term, strategies to reduce the prevalence of nutritional anemia and vitamin A deficiency, and to increase coverage and optimization of existing micronutrient programs” (Ministry of Health, 1996, p. 6).

Proposed solution

The response or solution to folic acid deficiency was framed within the strategies developed some decades ago by the Nutrition Division of the Ministry of Health. Food fortification was a well-known and proven measure, as will be shown below.

Food fortification experience in the country

The idea of food fortification as a public health measure was not new in this country. Salt fortification had been considered since the 1940s as an urgent measure to reduce thyroid pathology detected through clinical studies. In that time, endemic goiter had already been identified as a public health problem. The experience developed in other first-world countries on this issue was then taken as a basis for a similar initiative in Costa Rica. At the same time, regional investigations carried out by INCAP and the Ministries of Health of the Central American countries and Panama in the 1950s indicated that anemia represented a generalized nutritional problem in the region. In Costa Rica, this resulted in the first decree passed in 1958 for fortification of wheat flour with iron, calcium, thiamine, niacin and riboflavin.

However, these first initiatives did not have the expected impact because it was not possible

to ensure the desired fortification and required coverage. It was necessary to meet a series of conditions in order to unite political will, institutional capacity, development of industrial technology, social sensitivity and commitment to make fortification policies effective.

The 1966 National Nutrition Survey was able to measure low levels of several nutrients and resulted in more systematic fortification. However, the pioneer salt iodization policy was not feasible until 1972, reducing goiter incidence to the point where it was no longer a public health problem. Social and health policies and cooperation from salt companies contributed to this reduction. In addition, sugar fortification with vitamin A was decreed in 1974. As stated by one of the interviewees, “[Costa Rica] was the first country in the world where sugar was fortified with vitamin A” (INF 13). At the same time, a water fluoridation program was developed to reduce the incidence of dental cavities in the population. However, this measure was interrupted in 1980 for lack of financial resources and problems of coverage in rural zones.

The foundations for food fortification from a comprehensive preventive public health perspective were laid out in the 1970s. This was done in response to a particular concern regarding insufficiencies and inequities in the population, manifested in health problems. Primary preventive health care programs were established and universal health services promoted, thus increasing the population’s access to health care. Rural and urban marginal zones received special attention, and food distribution and nutritional assistance programs were launched. The context favored including micronutrient deficiencies in universal social policies, in order to improve life and health conditions for the population.

Food fortification was introduced in nutritional programs as a working area. A food fortification program with three sub-programs was included in the 1974–1980 National Food and Nutrition Plan:

- a. Salt iodization for human consumption, to reduce endemic goiter.
- b. Sugar fortification with vitamin A to reduce vitamin A deficiency in vulnerable groups.
- c. Wheat flour enrichment with ferrous salt to reduce iron-deficiency anemia.

The food chosen to carry micronutrients was based on national consumption studies. Foods chosen had to be safe and practical to fortify, universally used, low cost, and safe for the population.

The state's role and protectionist legislation during that decade played an important role in organizing the national industrial sector and providing funds to strengthen it and for technological development which led to improvements in production and regulation of the quality of the food produced. This favored food fortification policies, and made them feasible, as shown in the salt iodization experience¹⁶.

Important economic, social and political changes took place in the 1980s, but fortification policies did not decline. Instead, they found a new scenario where industrial development and product quality became important in the face of free market competition. Note that in the early 1980s, when water fluoridation was interrupted, the National Dental Congress recommended salt fluoridation. This program started in 1987 with support from the Kellogg Foundation, which contributed to the introduction of new technological procedures to fortify salt with iodine and fluorine.

During that decade, more systematic controls were established and technological development made possible more effective fortification methods; also, clearer and more stringent regulations were established regarding physical-chemical food quality and fortification procedures. The state played a role in regulating food imports

with respect to established fortification standards.

In the 1990s, new legislation was created in response to economic liberalization, leading to the elimination of import licences, recommendations and permits¹⁷, as well as requirements and regulations for economic activities¹⁸. However, this did not necessarily weaken food fortification policies, since they became valid and justified issues for government regulation.

World forums and the commitments made by governments at them became a new driving force for the food fortification strategy in the 1990s, as can be seen below.

Influence of international forums

At the international nutrition conferences in Rome in 1992 and 1996, ensuring safe and adequate food¹⁹ again became a concern, and participating countries made a commitment to:

“... make all efforts to eliminate the following problems before the coming millennium: famine and famine-related deaths; starvation and widespread chronic hunger; under-nutrition, especially among children, women and the aged; other important micronutrient deficiencies, including iron, iodine, vitamin A; diet-related communicable and non-communicable diseases”²⁰.

At the Sixth Conference of First Ladies of the Americas in La Paz in 1996, which focused on the Rights of Women and Children in the Context of Sustainable Human Development²¹, a commitment was made to foster and support implementation of the regional project to reduce malnutrition due

¹⁶ Castro, C. 1997

¹⁷ Law 7473, Execution of the Agreements of the Uruguay Round of Multilateral Trade Negotiations, 1994. Quoted by Castro, 1997.

¹⁸ Law 7472, Promotion of Competition and Effective Advocacy of Consumers, 1995. Quoted by Castro, 1997.

¹⁹ World Food Summit (November 13-17, 1996)

²⁰ International Conference on Nutrition. A confirmation of the FAO commitment to improve nutrition. 1992

²¹ La Paz Declaration. Sixth Conference of First Ladies of the Americas, Bolivia. 1996

to micronutrient deficiencies in the hemisphere, in light of the documented high rates of anemia and their severe consequences for children and women.

In short, there were a series of international and national commitments:

- The World Summit for Children. New York, 1990.
- Conference on Micronutrient Malnutrition, Montreal, 1991.
- Central American Summit on Human Development, Children and Youth. Tegucigalpa, 1991.
- International Conference on Nutrition. Rome, 1992.
- 43rd and 44th Meetings of the INCAP Council, COMISCA. San José, 1993.
- 20th Resolution on the Food and Nutritional Safety Initiative at the 14th Summit of Presidents. Guatemala, 1993.
- World Food Summit. Rome, 1996.

International conferences contribute guidelines and establish national commitments to strengthen nutritional policies. Although since the 1970s Costa Rica has formulated nutritional policies through an inter-sectorial approach²², world conferences provide them with greater support. At the International Conference on Nutrition held in Rome in December 1992, Costa Rica made a commitment to intensify, in the short and medium term, studies to determine the magnitude and characteristics of micronutrient-related problems, in order to facilitate planning future actions. This was accomplished with the 1996 National Nutrition Survey.

²² This is shown by the creation of SEPAN (the National Food and Nutrition Policy Secretariat) as an organization established by law in 1973 (Law Establishing the Ministry of Health) under the Minister of Health; among its functions are to formulate national food policy and coordinate actions in the field of food and nutrition.

The international conferences mentioned stimulated a special interest in Costa Rica to establish an inter-sectorial plan with measurable objectives that were followed up and evaluated. For this reason, in the 1990s efforts were made in Costa Rica to strengthen and organize inter-sectorial or inter-institutional actions to ensure the country's food and nutritional security.

Policy negotiation process

The process of formulating and negotiating the policy to fortify wheat flour with folic acid followed a logical path in which each stage laid the groundwork for those that followed. As indicated by several interviewees, the process flowed smoothly. This document intends to present the sequence of the process and the way in which consensus to have the decree approved was reached.

Cause-and-effect logic is inappropriate in this situation, since it is too simple to explain as complex a process as this one. The intention in this section is rather to define the multiple factors that operated in combination to create the conditions that favored or hindered the process. In particular, it was interesting to focus on those actions and interactions among social actors that were characteristic of the process, and which provided it with dynamism, generating new conditions. For this reason, the intention is to review the process from the perspective and words of the various actors involved.

First stage: establishing a base of scientific evidence and strategic alliances

The 1996 National Nutrition Survey provided a current diagnosis of nutritional problems, and information about their magnitude and trends over time. Nutrition surveillance by the Nutrition Division of the Ministry of Health over decades served as the basis for choosing the policies. The nutritional surveillance technical team, consisting of a medical doctor and two nutritionists, became the leading group in the initial and later stages.

However, it is important to emphasize that there was a 14-year gap in which no nutrition national survey was carried out, indicating that in previous administrations, nutritional surveillance had not received enough support to develop the required level of national oversight. As one of the interviewees pointed out:

“...it is incredible, because [surveys] are not even very expensive, because there was money for other things, it is necessary to sensitize politicians so they budget money for these extremely important things in public health.” ... “a national nutrition survey is carried out precisely to find out how policies and programs can be redirected in order to improve the deficiencies found” (INF15).

It is therefore important to understand how conditions changed, thus leading to the effective development of the survey in 1996.

According to correspondence between the Nutritional Surveillance Division of the Ministry of Health and other offices and institutions, the National Commission for the Nutrition Survey was coordinated by this division and had support from the Director General of the Ministry of Health, and INCIENSA's participation. Political support from health authorities was evidenced by the amount of resources allotted, which in previous administrations had not been provided because financing of other surveys had always come totally from external aid. It took all of 1995 to obtain resources and establish the logistics necessary to carry out the survey in 1996.

This survey involved a high level of coordination among the different institutions and entities inside and outside the Ministry of Health²³.

²³ According to correspondence between 1995 and 1997 from the Ministry of Health, several institutions participated in the survey process: the Health Branch, the Nutrition Division, the Nutritional Surveillance Division, the Health Laboratories Directorate, Medical Services, and the Department of Dentistry. Divisions that provided support to INCIENSA included the Scientific Directorate, the Technological Nutritional Unit, and the Food Analysis Laboratory. From the Statistics and Census Branch, the Director General's office, the Cartography Department, the Division of Statistical Design and Analysis, and the Sampling Design Section.

At an international level, technical assistance from INCAP was fundamental; PAHO and the European Union also provided financial aid. In addition, Pharmaceutical Company A provided reagents for laboratory analyses required during the survey.

Organizing and running the National Nutrition Survey turned out to be a good way to develop technical skills, and new alliances resulted from these efforts. It is worth emphasizing several points about the alliance with INCIENSA.

“...INCIENSA has its own goals and priorities, which in this area coincide precisely with those of the Ministry, and it has a laboratory that fulfills all the needs of the Ministry; I think that it has been a joint effort for what they most need (...) (INF12). People in charge at the Ministry think in the same way (...), on the day that a single child presents a folic acid or vitamin A deficiency, or any type of deficiency, I think that we must continue working on that (...) this has been like a guiding light that has pulled the two of us to work for a common objective (INF12).

These words summarize the vision and mission shared by both institutions. Although not explicitly stated, they correspond to a human rights approach, particularly the right to health for all members of society. As stated by one of the informants “within a framework of rights, institutional capacity acquires an important role” (INF16).

In developing the survey, INCIENSA analyzed samples, and together with staff from the Ministry of Health, they received training from INCAP²⁴. This aided the installed capacity of the country's public institutions.

“Previously, INCAP used to get paid for carrying out the nutrition surveys. We (the Ministry of Health and INCIENSA) decided that we had to do it here; from that moment on we thought about the country, the population. INCIENSA

²⁴ INCAP was involved in the process through the Director General's office, technical cooperation in this country, the Food Unit from Science and Technology, and experts in statistical design.

had very valuable people (...) obviously with the collaboration of people from INCAP who trained us, they were always with us” (INF12).

In addition, there was a special need to plan evidence-based actions on the country’s health requirements in the 1994–1998 administration. The plan sought to reach the goal of Health for All by the year 2000, respond to the Five-Year Plan for Food and Nutritional Security, and respond to the Government Plan, which identified as a priority the need to prevent and eradicate “nutritional anemia and other diseases caused by deficiencies that substantially affect the potential capacity of human development”²⁵. It was therefore considered essential to have current, accurate, timely information to guide policies, plans and programs on food and nutrition.

The technical team from the Ministry of Health in charge of nutritional surveillance was able to build a strong partnership with the new health authorities, becoming their advisers on nutritional issues and providing technical support to policies proposed by the new government, and health authorities provided the support needed to enable technical processes. The nutritional surveillance team was thus able to position its concerns and efforts within the range of health priorities set by the new government.

The following factors favored these developments:

- The new authorities were very interested in focusing efforts on primary health care.
- They started from a public health vision, with a demonstrated commitment to public health development in the country. The Ministry had played a critical role in a previous government in strengthening primary health care. The Deputy Minister had also developed a cooperative model of local care, including health promotion, prevention and treatment that would become a model when reorganizing health

services in the country by creating EBAIS (basic health care teams).

- There was dynamism and teamwork in the Health Branch, and the Minister and Deputy Minister supported these efforts.
- The government plan raised interest in developing a social anti-poverty plan, and in the health area it had a proposal to face the problems posed by anemia in the country, concerning which there was already some information available from partial investigations.

From this first stage, important alliances were established that would later assist in the policy formulation process. The National Nutrition Survey in 1996 provided a solid platform to support policy and also became a way to build strategic alliances that would support the policy formulation and negotiation process.

Second stage: building a technical-political alliance

As previously indicated, the National Nutrition Survey was the beginning of a close collaborative relationship between the nutritional surveillance technical team and higher authorities in the Ministry of Health. The Director General of Health made it possible for the technical team to approach the Deputy Minister, who was in charge of health interventions and was the Minister’s closest assistant. The Minister trusted her and gave her a fundamental advisory role. In the words of the Deputy Minister: “[she was] brilliant, efficient and effective, ... I respected her greatly” (INF04).

But having up-to-date information was not enough for health authorities. A decision had to be made to improve the population’s nutritional status. From the technical perspective, the National Nutrition Survey had shown that public health measures adopted to reduce nutritional anemia had not produced observable results in the last decade, making it necessary to promote more adequate measures.

²⁵ National Survey on Micronutrients, 1996

Health authorities asked the technical team to determine the most appropriate intervention strategies, as a result of the confidence they had in this team. As the highest authority at that time indicated “... *I believe that they are good people, well trained*” (INF04). The Deputy Minister also had great confidence in the technical group, which promoted good technical and political coordination:

“The technical team always had direct access to the authorities, which facilitated their access to information, decision making, and transfer of resources” (INF05).

For the technical team, political support made a great difference in their work:

“When there is political interest, nothing is delayed, because if they were not sufficiently interested, they would not hinder the work, but neither would they help speed the process” (INF01).

Authorities thus entrusted the technical team to search for information and analyze alternatives, and to review experiences in other countries.

In turn, INCAP assistance was one of the most important results of strategic alliances in this process. According to correspondence from that period, INCAP made recommendations for folate analyses in the national survey on micronutrients. However, INCAP research in the last twenty years indicated that iron-deficiency anemia in the region was so widespread as to be a public health problem, so emphasis was given to iron deficiency, and to a lesser degree, to folic acid deficiency. Also, there had been progress in developing the technological aspects of fortification of food consumed by all. Experience indicated that the most appropriate food to fortify was wheat flour.

Support from INCAP became critical in assisting the technical team in investigating this problem, and in seeking solutions such as advocacy efforts that had to be carried out with

politicians. INCAP provided knowledge gained in other countries, and at the same time deployed its capacity to convince politicians, based on decisions of the institution’s advisory council and board of directors (on which the Director General of Health and the Minister of Health sit), where Central American governments made a commitment to fortify food with iron, folic acid and vitamin A. Health authorities had to meet the mandate that they themselves had approved.

When trying to provide technical justification for action to take, research showed the existence of congenital malformations associated with folic acid deficiency in pregnant women.

As indicated before, when the 1996 National Nutrition Survey was carried out, attention was focused on anemia. However, the technical team, with support from INCAP, carried out a literature review which showed that congenital malformations were associated with folic acid deficiency²⁶. There had also been successful experiences in other countries that helped strengthen the national proposal.

As one of the interviewees said:

“...approaching the issue of iron-deficiency anemia and the alternative of fortification of some foods to fight it, the opportunity to do something about congenital malformations associated with lack of folic acid arose, and it was then included in the work plan” (INF05).

²⁶ Neural tube defects include a whole range of congenital malformations and are produced when the neural tube does not close during the incipient phases of embryonic development. These neural tube defects have been associated with folic acid deficiency since 1930, when Dr. Lucy Wills pointed for the first time to folate as a way to treat anemia in pregnant women with an insufficiency of this folate. In addition, in 1964, Hibbard published a scientific document in which he reported a link between certain congenital malformations (not of the neural tube) and folate deficiency. In 1980, Laurence published a clinical trial that showed a 60% reduction in the risk of recurrent neural tube defects in women who took folic acid. In 1991, the CDC published a review of evidence on preventing recurrence of pregnancies affected by neural tube defects, and recommended administering 0.4 mg of folic acid to women who had had a baby or a fetus with some neural tube defect (PAHO/WHO, year not indicated).

The interviewee then added:

“...the concern about folic acid was part of a wider issue: food fortification to prevent anemia. Malformations were not one of the twelve priority points, but indeed flour fortification was seen as an opportunity to help reduce that problem ” (INF05).

The scope of the policy selected and its limitations were also clear:

“Taking care of malformations in a comprehensive manner requires more complex interventions. Food fortification and enrichment are broader measures, with fewer actors involved, and they are less expensive” (INF05).

Once the deficiencies and population at risk were identified, three types of measures were defined to solve iron and folic acid deficiencies:

- **Supplementation:** this measure is focused on the population at risk and implies taking pills to supply the missing micronutrient. *“The problem is to have to remind people to take the pill, or they will forget” (INF01).*
- **Improving the general diet:** this measure implies educating the population and promoting healthy diets. However, it requires *“nutritional education, greater availability and people’s access to foods that are a source of those nutrients and have long-term effects” (INF11).* Foods containing the required micronutrients are not always accessible for the population at risk, just as nutrient use is another factor that must be considered.
- **Food fortification:** this measure has an advantage because it uses *“food that everyone eats and is widely available, which does not require changes in the population’s eating habits” (INF11)* and *“its effects are seen quickly; its results may be seen in the very short term, at low cost, and populations recover successfully” (INF12).*

The selection of the foods to fortify will depend on the population’s existing eating habits, to avoid changes in food purchase, preparation or consumption habits, so that *“people will not notice any changes, the flavor will not change, and the food’s organoleptic properties (color, smell, flavor) will not change” (INF08).*

Another interviewee stated: *“fortification acts in the following way: first it solves severe cases of anemia, and then it starts to reduce the overall level of deficiencies, up to a point at which this level remains stable and will not go down further, because the causes are no longer due to folic acid deficiencies but to other factors” (INF12).*

To make the decision on whether to “fortify or supplement, first, there have to be studies on the state of the problem in the population, who and why. Once you have the basic information, then the decision is made on whether to fortify or supplement. Fortifying is easier because the population is already consuming the food; then, the only thing you need to know is how many grams they consume, to determine the dosage” (INF12).

Of the three measures, wheat flour fortification with iron and folic acid was chosen, for several technical and political reasons:

Technical reasons:

- Bread is a widely consumed food in this country.
- Wheat flour is easy to fortify and micronutrients remain as stable as possible until they are consumed.
- Folic acid is *“a multipurpose micronutrient for megaloblastic anemia and for the prevention of neural tube congenital malformations” (INF01).*

Political reasons:

- Decree 18 of July 28, 1958 which mandated fortifying wheat flour with thiamin, riboflavin, niacin, iron and calcium.

- Negotiation involved agreements with only two mills as external actors.
- The proposal was feasible, since there were no problems with required inputs.

On this last point, the technical team also sought the advice of a pharmaceutical company to obtain information about prices for a premix that would contain the vitamins, its availability, and possible economies of scale and discounts for volume purchasing. This information was critical to analyze the proposal's feasibility. It was known that inputs were not a problem, and all this information was to form part of the proposal presented to the mills.

Several points convinced the highest authority in the Ministry of Health to accept fortification of wheat flour with folic acid as a pertinent measure for the country:

- The belief that *“faced with proven facts, we could bring about health benefits, so we had to take the corresponding actions”* (INF04).
- In 15 years it had not been possible to reduce the prevalence of anemia or iron and folic acid deficiencies in the diet of Costa Ricans.
- The measure did not entail issuing a new decree but only modifying the existing one, changing the dosage of iron and other complex B vitamins that had already been identified in the previous decree, as well as adding folic acid.
- Research and experience in other countries that showed successful results in reducing the incidence of spina bifida and neural tube defects. *“I was convinced that we had to do it”* (INF04).
- The wheat flour fortification policy would be an opportunity for health authorities to show the effective exercise of power by the Ministry of Health.

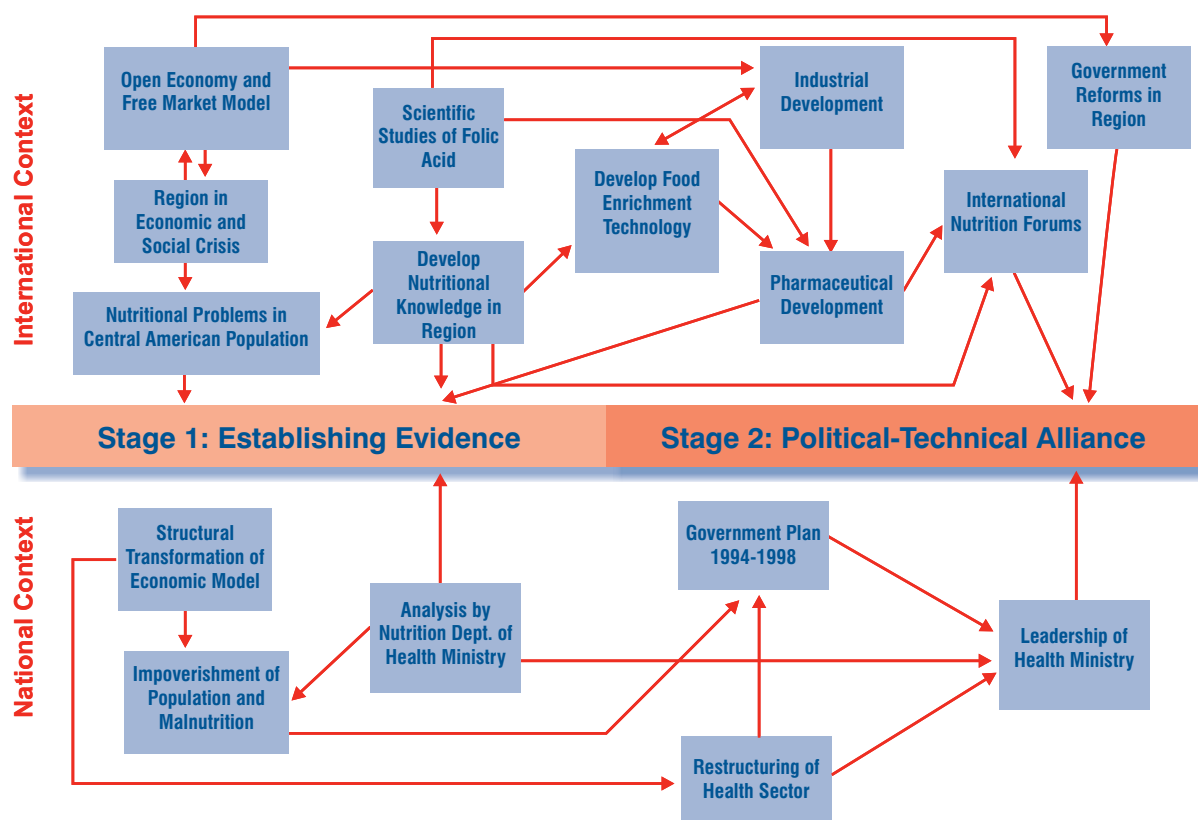
National pride also played an important role in this process, as was emphasized by several key informants:

“...I feel very proud when Costa Rica is mentioned in connection with these issues, mostly in forums, because in other countries politics hinders processes a lot; there are many barriers. In Costa Rica, this never happens in the political area, in political decision making, I have never seen or heard that anybody has been opposed to flour fortification, or fortification of any other food” (INF12).

For the reasons given above, health authorities decided to revoke Decree 18 and replace it with a new decree that would include the technical measures required to have a real impact on the population's nutritional status. This type of political instrument was always used for all food fortification measures, supported by the General Health Act.

Chart 2 summarizes the network of conditions and factors that favored the formulation of this policy.

Chart 2: Conditions and Factors that Facilitated Policy Development



Third stage: meeting with the mill owners

The analysis of the actors made it clear to the technical and political team that the two mills were the key actors that needed to be convinced. Bread makers, with whom the Ministry of Health had had confrontations because of a measure to eliminate potassium bromide²⁷, were not considered. It was decided that the main external actors were the mills, and negotiations with them were sought.

For the health authorities, the issue was not to discuss with millers the possibility of modifying the wheat flour fortification formula, but rather to obtain their support for the decision that had already been made by the Ministry of Health.

However, they were aware that a demanding attitude would not contribute to a good environment for making the policy effective. As one of the health authorities stated:

"... we were not expecting that the millers would accept or reject the decree, since the decision had already been made. We met with them to seek their support, because otherwise, a very expensive control system would have had to be established; you cannot have police at the mills controlling compliance with the measures" (INF05).

This meant that the objective was to convince millers of the importance of the measure, and to reach a sustainable alliance with them. Several strategies were prepared for the meeting with the millers:

- Approaching the proposal from a technical point of view, offering up-to-date information about the population's

²⁷ An additive used by bread makers to make the bread rise when it is baked, but the Ministry of Health claimed that it was a carcinogen.

nutritional and health problems, why they existed, and possible solutions, as well as information about fortification experiences in this country and abroad.

- Taking advantage of the alliance with salt businesses: “... the fact that salt was already being fortified with iodine and fluorine helped us a lot (...) when we called meetings with the millers, we also invited the salt makers, because they spoke in favor of fortification, and they also had a public health approach, not an eminently commercial one” (INF01).
- Concerning the previous point, the technical team had received advice from UNICEF on human rights and social responsibility approaches, as a result of which it was decided to approach the proposal with a “social investment” vision (INF11).
- They also benefited from the partnership with INCIENSA and its Dietetics Laboratory. Pharmaceutical Company A assisted in the process from its first stages, when they presented the millers with the technical details of adding nutrients to food. MEIC (the Ministry of the Economy, Industry and Trade) also joined the negotiations with business people.
- Study of premix alternatives and costs, as well as a study of wheat flour prices in the market.

On this last point, health authorities were worried about the cost of fortification. For them, it was necessary to arrive at the meeting with the millers with a strong bargaining hand so that they could ensure that fortification costs were not passed on to consumers through a price increase.

“...we went completely prepared to convince millers to pay for the costs, instead of the consumers (...) Due to the country’s economic status, it was not feasible to say that the price of bread was going to be increased, in spite of the benefit of fortification” (INF05).

To accomplish this, they studied costs and international wheat price fluctuations, which showed a reduction in wheat prices that had not been passed on to consumers. For politicians, the strategic conditions already existed to convince millers about this policy. It was a time when there were arguments to counter the logic of trade, in which the goal is to earn more and lose less. However, it was not necessary to play that card, since the millers were in agreement from the beginning.

“we went to the meeting prepared for very hard bargaining, but in the end it turned out to be easy and speedy, and we obtained full cooperation from the two mills (...) The Minister of Health participated in the activity, which strengthened the process” (INF05).

Comparing this negotiation to similar negotiations with other industrialists for food fortification, the highest health authority considered that the negotiation with the millers:

“...was the simplest process (...) the one with most acceptance from the beginning. I don’t remember having any problem, not even minimal opposition” (INF04).

For a better understanding of this favorable reception from millers, it is necessary to put their situation in the context of the negotiation, specifying the conditions that existed to facilitate the millers’ positive attitude to the proposal from the Ministry of Health.

As previously indicated, Mill 1 was a wheat flour production monopoly until 1979, when Mill 2 was established. This second mill was small throughout the 1980s, but in the 1990s it started to grow. In the words of one of the interviewees:

“... in 1990, Mill 2 had 12% of the flour market in the country; by 1996, 1997, it probably had about 30% of the market. It grew a great deal, so competition for improving quality, innovation, improving the product, and enrichment, played an

important role in brand differentiation, and the qualities of different brands of flour” (INF19).

By this time, the ISO 9000 standard had become important for ensuring product quality. This brought about research to keep products competitive. Industrialists knew of research on folic acid and flour fortification. Since the 1980s, millers had held international meetings to discuss flour fortification. Vitamin-producing firms gave speeches on it. Governments promoted fortification, and private businesses discussed the issue in industry forums. Central American countries agreed on it, and it was important to act as a bloc in international trade.

At the same time, the mills’ “trade partners,” particularly pasta producers, needed to have their products accepted in the United States market, and in order to do so they had to comply with USDA vitamin enrichment regulations in that country. Thus, in 1997, Mill 2 was busy trying to upgrade fortification requirements so that they would be equivalent to those of the external market, in response to pressures from the pasta industry.

“...at that time we were trying to help several of our large users of flour products export their products to the United States. In that sense, by trying to standardize enrichment requirements with those of the USA, we became pretty current with regulations in other countries that were more aware of the effect of folic acid in inhibiting genetic malformations. For that reason the project was acceptable to... really, both mills, ours in particular and the other one, which were established in this country” (INF19).

Mill 2 thought that government regulations were lacking. *“The vitamin complex that had been added to flour was not under any national regulation” (INF19),* so that the standards to be applied had to be taken from abroad. Also, specific needs of flour product producers were not included in the 1958 decree, because it was specific to wheat flour, and semolina, which is the raw material for pasta products, was not included. Mill 2 was *“voluntarily migrating to American standards” (INF19).*

Another important factor was technological development in the industry internationally to adequately measure micronutrient dosage. The country’s laboratories were not equipped to verify adequate micronutrient dosage. Mill 2 did not think that the Ministry of Health was qualified to confirm compliance with the standard. It therefore experimented with potassium iodine to determine the concentration of iron ions in flour, thus allowing the national industry to avoid having to send samples abroad for analysis. As a result, businesses invested in technology (purchase of volumetric and gravimetric dosimeters) and contracted food technology specialists. This would blend well with the government’s initiative.

However, it is worth pointing out that Mill 2 viewed the government differently from Mill 1, due to the particular background of each business. The flour fortification regulation had existed since Mill 1 was established, and the Ministry of Health laboratories were in charge of approving premix imports. The first general manager of Mill 1 was a chemistry specialist and had always had an interest in food fortification, and a close relationship with the government, particularly the Ministry of Health. Since Mill 2 was established in a context of trade liberalization, the government was seen as an obstacle that imposed *“obsolete controls”* and *“did not facilitate development of the market as it should have, imposing barriers to free trade.”* There was no perception of support from government departments; MEIC (the Ministry of the Economy, Industry and Commerce) was the most active participant, but it had a price-control role, instead of *“truly promoting development.”* It was felt that the state’s interest was *“to maintain police-like control over a staple foodstuff and was ill-conceived”*. In brief, Mill 2’s perception of the government was *“discouraging” (INF19).*

From this perspective, flour fortification was assumed to be an effort that had to be undertaken by the industry, and standards were established accordingly.

“... since there were no regulations, but for practical purposes, some fortification was always present; however, it was not regulated or

standardized; it was more symbolic than real. Because of this, and as an initiative by the mills and a real exporting effort made in combination by various private entities, a regulated flour fortification process became stronger, and then even the formulations were changed, vitamin complexes were sought to protect vitamins such as “coatings” that would support drying at very high temperatures, and then a truly intense competition process between the two mills started, from which consumers benefit directly ” (INF19).

Business people, the technical team and policy makers from the Ministry of Health worked together in this context. Several factors convinced industrialists that the government’s proposal was sound:

- The strategy of the technical team from the Ministry of Health was convincing because it presented the country’s nutritional status, implications for health problems in disadvantaged population groups and pregnant women, and the benefits and impact of flour fortification in a well-founded way²⁸. As one of the industrialists said: *“The Ministry set forth the need and raised awareness of the problem” (INF17).*
- Costs were low and benefits were great: *“cost was practically insignificant, (...) that is why I was so relaxed in all the meetings”. (INF18); “it was something good to do at a very low cost (...) it was a winning proposal” (INF19).*²⁹
- The 1958 decree existed, even though it was considered to be obsolete. Both businesses were already fortifying flour; the new proposal only entailed changes in dosage and adding folic acid to the

formula; they only had to adjust the equipment and make a change in the premix formula.

- The private companies had already started an organized exporting effort to face intense competition. Both mills, although competitors, were operating under the same conditions. They had to maintain the strategic association with export partners that was required for acceptance of their products abroad.
- Fortification was consistent with product quality improvement requirements, resulting in greater competitiveness and increased acceptance in the international market. Adding folic acid to flour was a way to differentiate the product in the market. It allowed industrialists to promote their products as innovative and as promoters of health and social well-being.
- Previous experiences with fortification of food and other mass consumption products had been successful. The experience of salt makers was relevant; they came to the negotiation as allies of the technical team, showing the positive impact of salt iodization and fluoridation on public health. They also indicated that iodized and fluoridated salt was very attractive in the external market.
- Experiences in other countries with wheat flour fortification had proven to have an impact.

As one of the industrialists said:

“I believe it was a good growth environment, free of any obstacles for the process, and things moved along” (INF19).

²⁸ Several informants were surprised and pleased at the ease with which mills accepted the measure, and noted how the industry became an ally in favor of public health: *“they were convinced that they can help prevent some diseases” (INF12).*

²⁹ *“As for cost, fortification raises the price of flour for consumers by less than 0.5%, which was considered to be relatively low cost and high impact”.*

From the perspective of technicians:

“... it was self-evident” (INF11).

Information from the interviews indicated that arguments in favor of public health had an impact on business people. Mill 1 identified with the need to improve health in an important population group:

“In that sense, the business was willing to do it (...) Support was never denied, because it was a social well-being issue” (INF17); “all of us were in agreement (...) there was willingness from the businesses” (INF17).

The way that business people reacted is characteristic of our national industry and sets it apart from other countries. This has to do with a certain pride about Costa Rica compared to other nations and facilitates identifying with public health values in this country. Salt makers were pioneers in this regard and they advanced something that would later be known as “social responsibility.” Here is what one industrialist said about it:

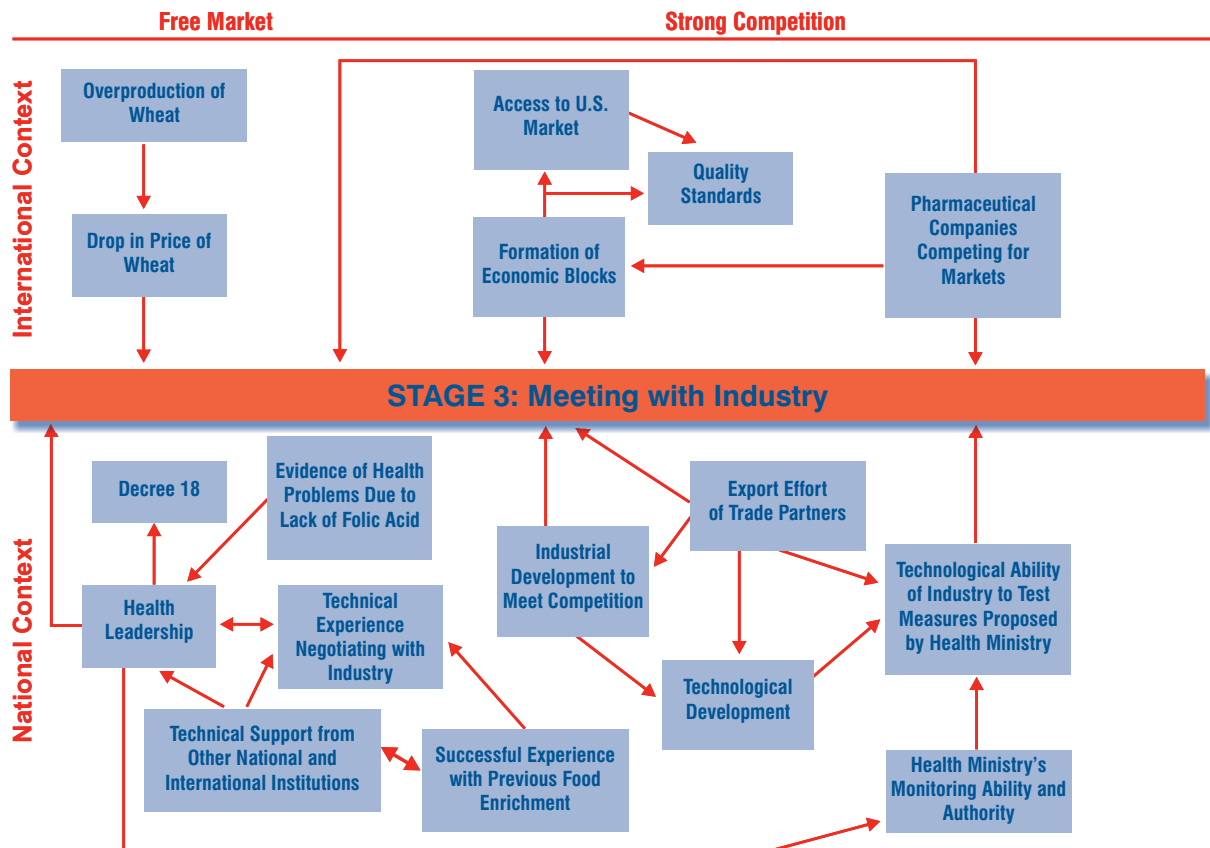
“... it is one of the characteristics that Costa Ricans have had for a long time; we are used to social concerns, and it is also very natural; unfortunately, in many countries it is not like that.” (INF18)

This perception is also confirmed by another person who collaborated in the technical part of the process:

“...an industry that is highly identified with health problems (...) and delighted when it is actually convinced of the reason of the effort (...) I do not mean to say that it is perfect here, but there is a lot of good will” (INF12).

Chart 3 summarizes the network of conditions and factors that favored negotiation of this policy.

Chart 3: Conditions and Factors that Facilitated Policy Negotiation



Policy design and implementation

Adjusting criteria for standardization

Once fortification had been agreed upon, the following tasks were technical and technological in nature. In the words of one of the actors:

"That was a period of investigation and conversation, of dialogue to see if it was possible" (INF15).

It was a period to solve a series of concerns that arose regarding the process of fortification itself: possible organoleptic changes in flour or in food products made with flour; stability of iron

and folic acid at high temperatures; homogeneity of the mix; differential dosages for semolina and for flour. The mills convinced themselves of the need to add adequate dosages of micronutrients to the flour. According to INF19, there was a "process of private industry awareness" to ensure that products were safe for consumers' health without government intervention.

During the policy negotiation phase, general managers or finance officers from both companies and health authorities were present. In this other phase, the technical team from the Ministry of Health monitored the process, with advice from INCAP, INCIENSA (regarding technology) and MEIC, but the quality and production management departments of the companies played a relevant role in this task, as well as Pharmaceutical Company A, which provided the premix. On this point, a key informant from the Ministry of Health pointed out that:

“As public institutions, we did not have all the resources to establish various points; for instance, they wanted us to show that formulation did not change the organoleptic properties flour, but we did not have the resources to do that. That was a weakness of the institution as such, but at the same time it became a strength because they (industries) participated more and took over more of the process. Because they had the resources, they did the tests, and realized that there were no problems.” (INF11).

Pharmaceutical Company A provided support by supplying the samples to adjust the premix formula to the requirements set by the Ministry of Health. They showed that *“the government’s proposal was technically feasible” (INF21)*, and gave information on equipment costs:

“... we were called on to help with the application of technology, and we also helped with some other information and analytical methodology, provided samples of the product and participated in the eventual sale of this product to the mills, when we became competitive in the market” (INF21).

Even though fortification costs were not considered high, the new measure entailed market tests to verify whether the product would be affected or not. Mill 2 offered its laboratories to perform the tests and Pharmaceutical Company A provided premix so that industrialists could test dosages and observe the results in final products. Different tests were carried out until the desired vitamin complex was achieved.

Pharmaceutical Company A was not the only participant in this process. Pharmaceutical Company B was called on at the beginning of the process but did not continue throughout it. The Ministry of Health had worked with Company A on other occasions and they were always willing to attend meetings with industrialists, contribute the first samples, and work closely with the Ministry of Health and local industries to obtain the desired product.

Pharmaceutical Company A provided a series of controls for the formula, as well as tests under realistic conditions for folic acid stability through chemical analyses of the quantity of micronutrients in the final product which would reach the target population, and of the plant quality necessary to guarantee premix uniformity.

Many of the technical questions and issues were related to industry concerns about food products made from flour, such as loss of micronutrients in processing products such as pasta, which require high temperatures to produce. Wheat semolina is used in pasta production, requiring special micronutrient dosages, so they would not be lost during the drying process.

To ensure micronutrient stability, it was necessary to coat some vitamins so that high temperatures would not vaporize them. The pharmaceutical industry had developed the necessary technology to overcome this problem.

Although the millers were key actors selected by the Ministry of Health to achieve its fortification objective, the mills adopted the interests of food producers. This improved the proposal and the impact of the fortification policy, allowing adjustments that permitted flour-based products to actually be fortified. Tests to prove resistance to heat in plants that made bread and cookies were also performed.

“... indirectly, we transferred fortification to other businesses (...), I can assure you that nobody escapes the benefits of fortification” (INF18).

The Food Industries Association joined this process, and some exporters participated actively in the tests. Micro-dosages were added in the laboratories of Mill 2, where they also verified that an adequate dosage was present in finished products, and then each of the actors received samples so that they could confirm compliance with the standard for finished products.

Unlike the mills, the Costa Rican Chamber of Food Industries at first opposed the government's proposal. In this case, their image and previous experiences with the government and its institutions, in particular the group's Board of Directors, were relevant. There was an atmosphere of disbelief and deprecation of the work done by the Ministry of Health, and claims that the Ministry had failed to comply with their responsibilities, resulting in a weakened market: for instance, the bureaucratization of new product registration, the absence of regulations against unfair competition, and lack of labeling control on imported products, including information about expiry dates. They saw no signs of the state protecting consumers and domestic producers, and doubted the state's ability to perform its regulatory functions. This gave rise to the impression that the government did not understand the industry's reality, and that its proposals and actions always hindered competitiveness in the sector. The Chamber was then trying to help food producers produce more, and more profitably, and did not see the wheat flour fortification proposal as an advantage for businesses. *"Giving attention to Dr. X's request was outside the strategic plan"* (INF20).

The following words summarize the first impressions of this group:

"Look, here they're going to impose something on us that businesses have to comply with, where the state doesn't give us anything, where costs will increase, where we don't know what effects it will have" (...) "Why don't you fortify water? That's a public service" (...) "There's no reason to force a particular group or specific sector to increase its costs, so the first impression was not positive" (INF20).

In this atmosphere of distrust, they wondered whether there might be some other hidden interests, such as Pharmaceutical Company A wanting to promote sales of its products. This position changed as the technical team presented evidence and experiences from around the world. *"Now all those efforts started to be more effective"* (INF20).

Once convinced, this group wanted to obtain some advantages for its members, such as regulation of imports of unfortified cookies. *"We wanted to see if we could use the excuse of fortification to impose a trade barrier"* (INF20). The Ministry did not accept this; regulations were to be imposed only on wheat flour imports. Finally the group yielded and accepted the measure:

"...we saw that a great deal of the ideas being considered were perhaps influenced by our cunning, that maybe we could take advantage of fortification from a financial and commercial perspective; it didn't work out that way, and we started to yield on that point and finally arrived at the conviction that fortification was important, that this was the final result. The clouds of the day went away" (INF20).

For the Ministry of Health it was critical that wheat flour fortification fit in the framework of public health policy. Therefore, during negotiations, it could not let the issue of fortification be used to promote increased consumption of fortified food, because that would have led to new health problems for the population.

The monitoring role assumed by the technical team from the Ministry of Health was appreciated by business people, and turned out to be a good experience for the technicians:

"... we never felt that the approach, at least the one Dr. X gave to the process, was hostile and burdensome; on the contrary, a joint effort was agreed upon to seek a reduction in neural tube defects (...) The relationship between the Ministry of Health and private enterprise was handled very well, there were no disputes or confrontations; instead, they tried to find a feasible, realistic solution that was objectively necessary to obtain the desired result (...) there was no police work, there was great faith that everybody was doing their part in the effort " (INF19).

According to Dr. X:

“We had to review bibliographies (...) On several occasions, the manager of Mill 2 sent us questions via e mail, and we answered them; it was a very rich dialogue from a technical perspective.” “... the Ministry has never had a verbal or written debate with the industry; instead, in the case of fortification, notices have always been on technical issues and common sense has prevailed” (INF01).

The relationship that the technical team had with the industry was different from its experience with government agencies and broke down defensive attitudes and opposition and kept the technical team from bureaucratizing the process. This is why it was mentioned many times that the process was very smooth.

“It was confidence that allowed the project to flow quickly” (INF19).

Drafting the decree

According to the industrialists, the process was very transparent, and information was constantly available: *“we were all well informed” (INF18).* The different actors had access to drafts of the decree so that they could review them and made commitments to comply. In this way, when the regulation was put into effect, industrialists were already prepared to implement it.

“...unexpected things happened here (...) I always thought that the policy of the government and the Ministry of Health was good (...), problems were solved in a reasonable time and at an acceptable cost (...) I was very happy with that (...) I think all of this was very well done, with a procedure to provide information, training for those in charge, and we all agreed” (INF18).

As an international adviser who participated pointed out:

“Everything was harmonious... When the decree was created, industrialists were already applying

the fortification measure (...) when things are done correctly and logically, it just flows smoothly” (INF15).

From the point of view of the Legal Affairs Branch of the Ministry of Health:

“the historical record was very transparent, there was no evidence of pressure from any actor, nor opposition” (INF10).

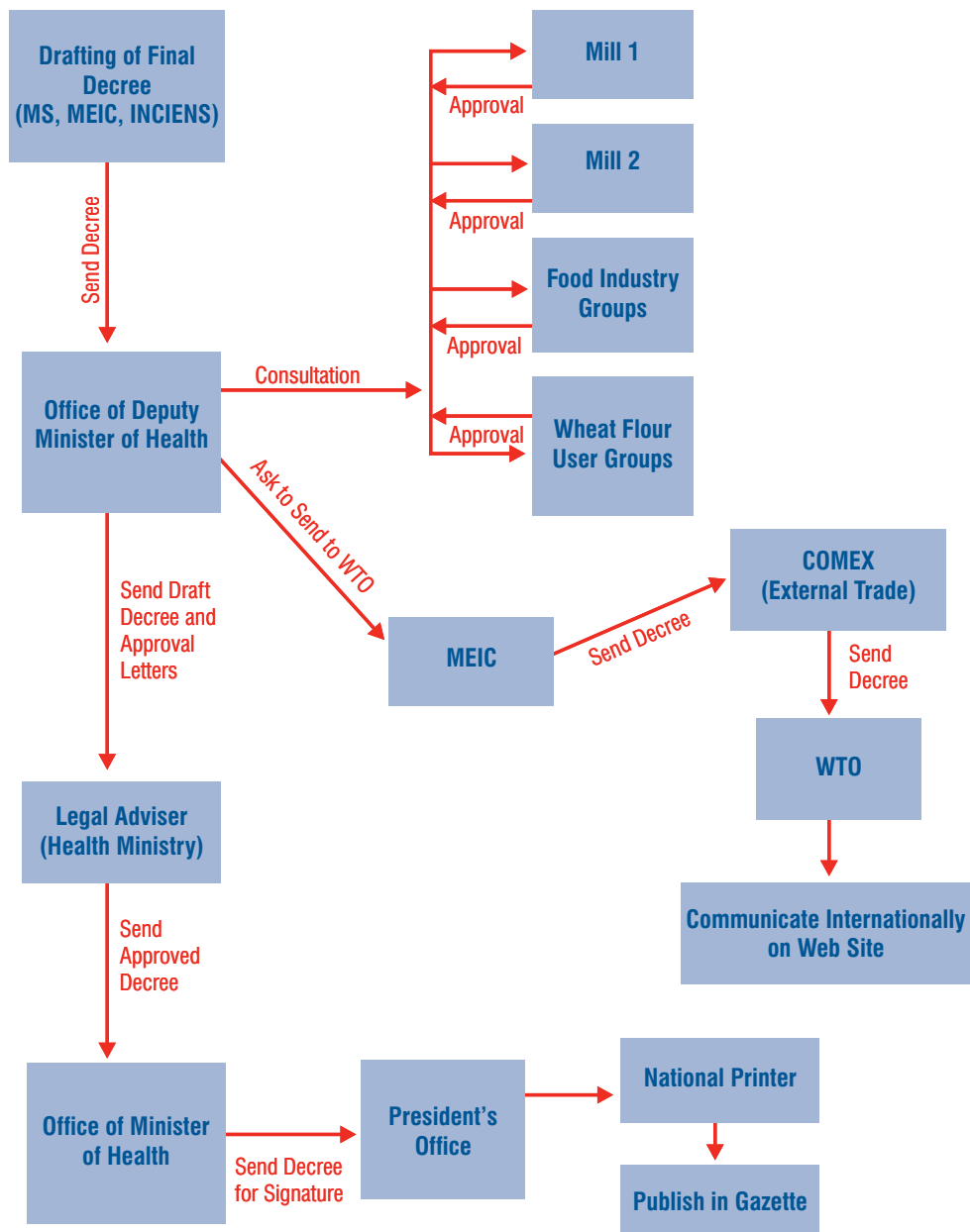
In looking back, the Minister of Health at that time observed that:

“...to make the train run, the first thing to do is to get it started, and to get it started you have to have fuel, so we all made up the team, and since I could make the decision by myself as the head of the group, I made it, and we pushed for the corresponding decree” (INF04).

The Minister of Health had credibility and support from the President of the Republic. The President was strongly identified with the cause of public health, attended all activities in the sector, and frequently offered his opinions.

A member of the technical team from the Ministry of Health drew up the decree, with support from the MEIC representative to review how it was organized and specify how to implement it. Existing decrees from Guatemala were used as examples, because wheat flour fortification had already been implemented there. In addition, a technician's participation in food fortification workshops in Central America had provided some insight on how to draw up the decree. The process followed to draft the decree is presented in Chart 4.

Chart 4: Policy Approval

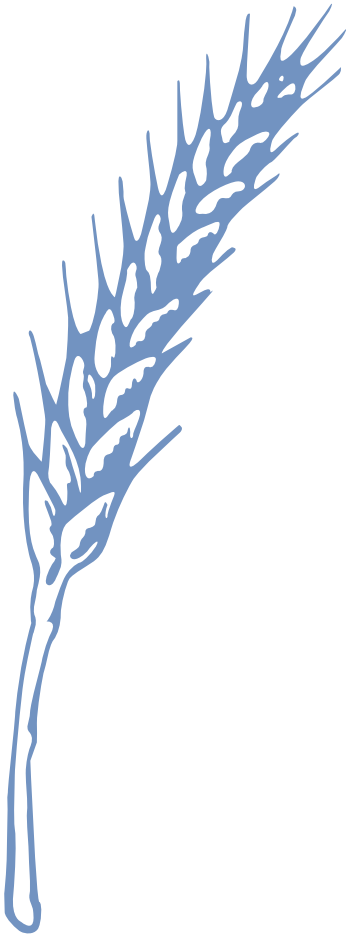


Executive Decree 26371 S revoked Decree 18 and established regulations for enriching wheat flour of food quality. These regulations mandated enriching wheat flour with iron and folic acid, and including thiamin, riboflavin and niacin. The difference from Decree 18 is an increase in these micronutrients, eliminating calcium and introducing folic acid, as Table I shows.

Table 1: *Enrichment levels pursuant to the Decree*

Nutrients	Decree N° 18 (1958)		Decree N° 26371-S (1997)	
	Minimum (mg/kg)	Maximum (mg/kg)	Wheat flour (mg/kg)	Wheat semolina (mg/kg)
Thiamin	4.4	5.5	6.0	6.0
Riboflavin	2.6	3.3	4.0	4.0
Niacin	35.2	44.0	55.0	55.0
Iron (elemental)	28.7	36.4	60.0	60.0 (min.)
Calcium (ion)	1100.0	1377.8	—	—
Folic acid	(N/A)	(N/A)	1.5	1.5

This decree applies to wheat flour and semolina for domestic consumption, be it of local or foreign origin. The decree entailed updating the industrial equipment, specifically in Mill 1, which had to acquire new dosimeters that would comply with regulations.



VII. CONCLUSIONS

It was possible to formulate, negotiate and approve the policy to fortify wheat flour with folic acid, thanks to the conjunction of various favorable conditions and the contributions of several actors. It is notable how a small group of technicians was able to establish alliances and mobilize actors to achieve their goal. They took advantage of favorable circumstances to create an atmosphere of confidence, participation and consensus. They achieved this with scientific support, evidence of success in other countries, and successful Costa Rican experiences. This small technical team was based on a foundation built over decades by the Ministry of Health, which provided credibility for its actions and allowed it to successfully lead the process. Annex 4 summarizes the intentions, capacities, needs, and alliances and conflicts among the various social actors that worked together to formulate this policy.

Chart 5 presents the degree of involvement of the various actors in formulating the policy. The chart is organized in concentric circles: at the centre are the actors who were most involved in the process, and those who participated to a lesser degree are at the periphery. The actors who participated actively to achieve a positive result in policy formulation are in the green circles. Those in colorless circles participated informally in the policy process, but not in its formulation. And the actor in the red circle was initially opposed to the process, although later on was convinced to favor the initiative. The size of the circles also indicates the actors' relative importance in negotiations.

When asked about who was responsible for achieving this policy, one of the health authorities said:

"This [policy] was possible through teamwork (...) If I have to attribute its achievement to anybody, I would say that the Ministry was the one, a take-charge ministry that exercised leadership in both the technical and the political areas. Those decisions would not have been possible without the great technical support from those employees who were responsible for nutritional surveillance, with all the work regarding

information collection, research and analysis. It really is a success for the Ministry (...) it was mostly a public health measure” (INF05).

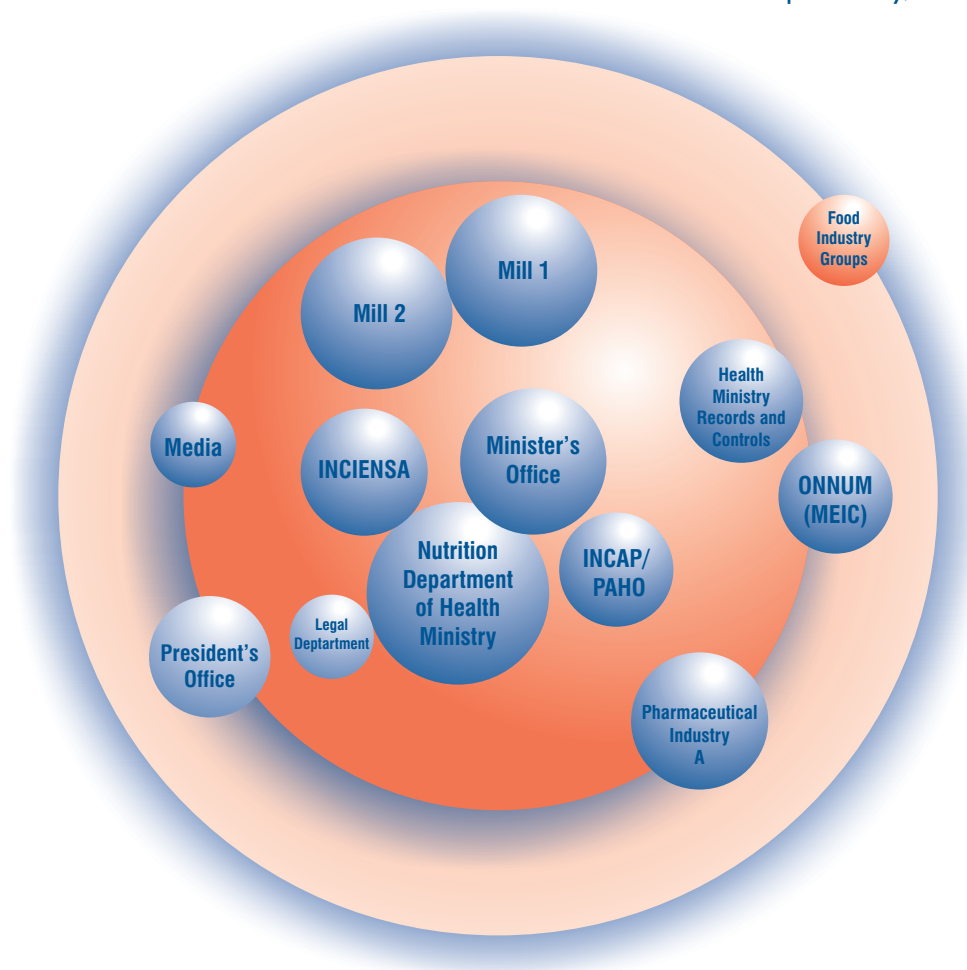
According to another informant from the public sector:

“... I say that they (the technical team) were the head and behind them, [was] all the machinery that gave them support” (INF13).

From the industrialists’ point of view:

“coordination from the Ministry of Health made it possible to arrive at agreements between us and our competition (...) There was adequate coordination with industry” (INF17).

Chart 5: Participation of Stakeholders in Policy Development



Although Mill 1 had been historically involved in flour fortification, its attitude had been to observe the mandated regulations; now, for the first time, it participated in drawing up the policy: “that was the first time that the business got close to a health policy process” (INF17).

A new policy-making style was created, in which the technical team was capable of creating the conditions for a different type of interaction between the public and private sectors. It was no longer possible to draw up burdensome policies or regulate commerce, as had been the case in past decades when policies originated with the state. Thus, processes to generate commitment and convince all stakeholders became essential in joint policy development.

In this regard, the technical team leading the process was anticipating what would later be known as “social responsibility,” when business

people changed their idea of responsibility from one based only on paying taxes and instead undertook a greater commitment to society and got actively involved in designing and implementing policies.

It is obvious that public health measures such as food fortification would have been impossible without industrialization of food production and technological development. That is why fortification required commitment from the business sector, as well as its willingness to strictly comply with regulations.

According to an international adviser, the technical team gained a level of expertise that was highly valued in the field:

“... not everybody knows the art of negotiation, and here (fortification) there is a lot of negotiation” (INF15).

The technical team was also capable of adopting and putting into practice the notion of “advocacy”.

“...I remember that they (the technical team) started to adopt some very interesting concepts such as the issue of advocacy, for instance. Advocacy is very practical, and it makes sense if you have a clear strategic vision of what it is you want to do; then “advocacy” means to raise awareness in a group of people, such as business people, who have economic power; it means to sensitize certain sectors of government that ultimately draw up the decree” (INF16).

Another critical element that helped direct advocacy efforts was a human rights approach, in which the right to health is a key to action taken in this field; this was complemented by social responsibility, and both of these elements would translate into institutional and social practices that were realized in this fortification experience.

However, it is important to emphasize that the beneficiaries of this policy were notably absent

when it was formulated, negotiated and approved. There was no consultation with communities or specific groups that might have represented the population. They were only informed once the decree had been written, in a press conference held on May 27, 1997. The social welfare principle prevailed, and the Ministry of Health made the decision without any public consultation because the measure was not expected to do any harm and people trusted the Ministry of Health to make such decisions for them. This can be clearly seen in the words of health authorities:

“... because the Ministry of Health said so, because it is going to do a great deal of good, because we enjoy almost implicit approval for all these measures we take” (INF04).

According to health authorities, it all started with a “proven benefit” without any negative consequences, and what was considered important was informing the population, instead of convincing them. It also had its basis in a vision of managerial efficiency: “feasibility for such interventions entails searching for key actors to avoid wasting time”.

However, a wider conception of the human rights approach was not involved in this decision, one in which the state enables and safeguards a process for demanding rights. That is why it was so important to create the necessary conditions for true citizen surveillance in the population; it would operate as political oversight that could become an ally for the government in technical follow up and surveillance of the fortification process. As pointed out by INF16, “this gives rise to a social network”. The socio-political conditions of the country also play an important part: “we have a highly developed social state (...) we have a highly state-oriented vision” (INF16).

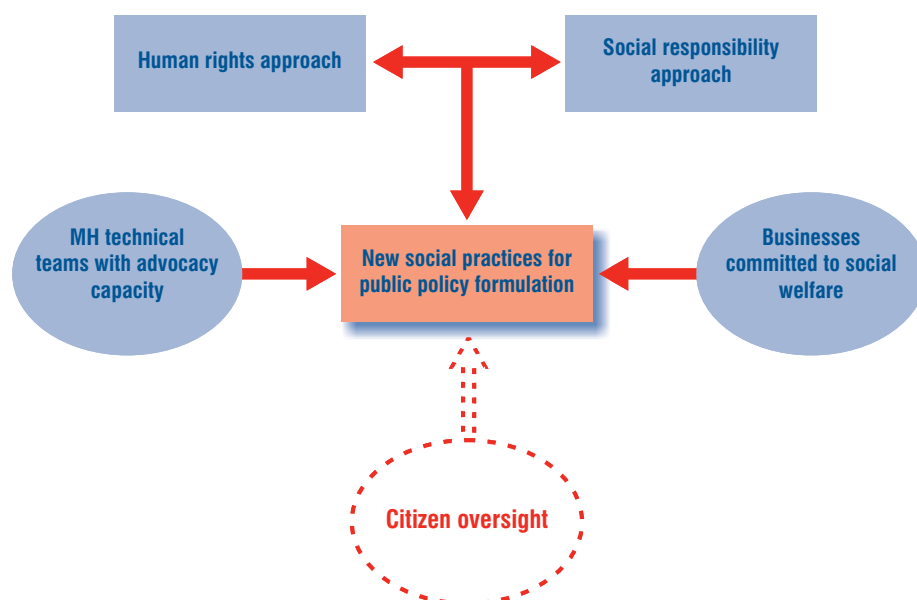
These features may be positive. However, as long as the Costa Rican government continues to respect free-market demands and the trend to minimize the role of the state continues, there is a high risk that the population may not be protected, since the people do not have the

experience or organizational ability to defend the rights which they have delegated to the welfare state over many years.

Chart 6 shows how the articulation of the human rights approach may be linked to the social responsibility approach, to create new practices in public policy formulation.

I believe contributions have to be made in the areas of political advocacy, conceptual feedback, and connection networks, but it also has to be very clear that those who develop initiatives are governmental or social institutions. Cooperation organizations are entities that make it possible to build institutional capacity, be it in the legal, program or even advocacy fields” (INFI 6).

Chart 6: Linking approaches with new practices for public policy formulation



No doubt, international cooperation organizations helped make this process possible. In particular, INCAP provided information, knowledge and technical support, and technical and political training in the country and the region. Expertise was also obtained through technical capacity building promoted by INCAP, with a regional vision oriented to making up technical teams, holding sessions for sharing experiences and providing advice. INCAP also helped create a committed and responsible decision-making entity, the highest health authorities in each country.

It is worth including the words of an interviewee from an international organization:

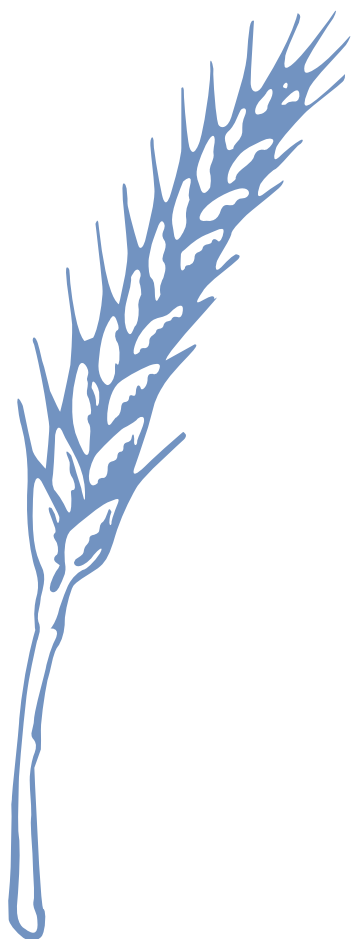
“...I think cooperation organizations that replace governmental institutions are damaging nation-states; they are not building institutional capacity.

Furthermore, international meetings promoted by international organizations, with participation of governments and private enterprise, provided an opportunity to share experiences, thus stimulating technology development and mutual learning.

Again, according to an employee from an international organization:

“Each of the countries shares its experiences, technological development, lessons learned and also its problems or obstacles, letting other nations learn from them, thus helping to standardize health policy in the region, build international standards, and allow flows of knowledge and information” (INFI 6).

From this particular experience in policy formulation, negotiation and approval, we may contribute valuable information about lessons learned to the NCD Policy Observatory in our country and the rest of the region.

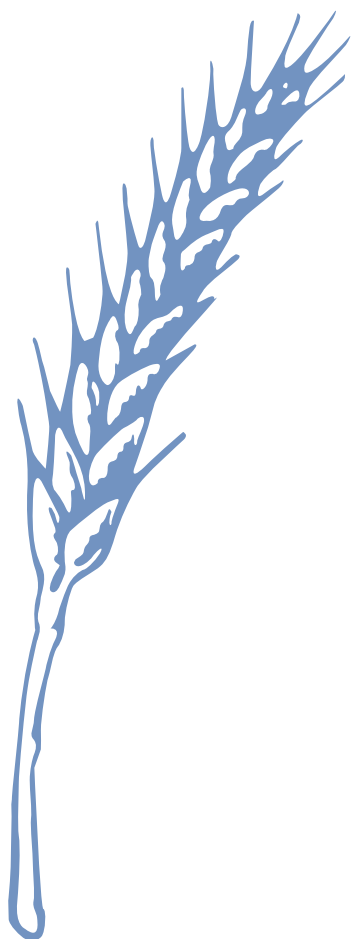


VIII. LESSONS LEARNED

- Although initiatives to create food fortification policy arise to reduce the incidence or prevalence of health problems, as health measures they should not be interrupted when the problems for which they were implemented disappear. Experience shows that health problems may reappear when public health measures are interrupted. This is a lesson learned related to epidemiological surveillance, which makes it necessary to consider policy sustainability over time.
- As shown in the case analyzed, having evidence on a health problem is an essential requirement in formulating policy. It provides the opportunity to convince different actors that must be involved in the process, giving them support and enabling them to measure policy benefits and impact over time.
- On the previous point, lack of investment in epidemiological studies, when studies are considered a luxury and not a priority, is a weakness. Permanent allocation of resources is vital for epidemiological research that will generate up-to-date information to be used as input for decision-makers in the health area.
- The role of health administration is strengthened with initiatives such as the one discussed in this document, because they make it possible for the administration to demonstrate its ability to call on different institutions and organize actions, thus optimizing results to the benefit of public health.
- Alliances between technicians and politicians are essential to public policy formulation. Technicians contribute their knowledge of reality and their experience, while politicians enable organization of different social actors, supporting technical recommendations.
- Alliances between the public and private sectors have great potential in solving health problems. For this reason, the

public sector must seek to obtain commitment and involvement from private enterprise in social welfare initiatives.

- Formulating successful public policy depends on authentic teamwork. Policy formulation processes should not be carried out by a single institution, but require cooperation and participation of different institutions.
- Dividing the responsibilities involved in executing a policy among many social actors, both public and private, has proven to yield better results than assigning the task to a single actor, because the power of the opposition is greater when policy responsibilities are concentrated in a few actors.
- Clarity regarding what each actor has to do facilitates policy formulation. At the same time, transparency on the intentions of a policy helps overcome doubts and distrust in the face of new policy proposals.
- Technical discourse backed by scientific evidence and assertive communication provides a policy with unity and an image of value with which to engage the private sector.



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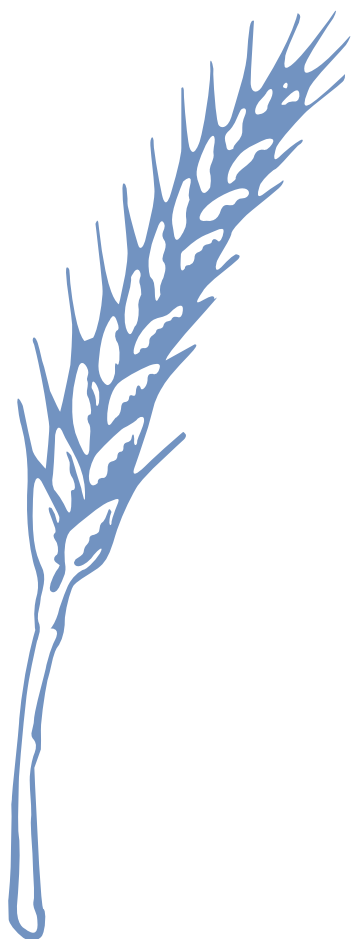
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X. ANNEXES

Annex I: Guideline for documentary review and analysis, and in-depth interview

Fundamental Concept	Key Aspects	Key Questions
1. Context	<ul style="list-style-type: none"> • Social, political and economic status in Costa Rica when the policy was formulated • Influence of the national and international contexts when the policy was formulated • Specific target population benefited by the policy 	<ol style="list-style-type: none"> 1. What was happening socially, politically and economically, in Costa Rica and abroad, that may have had an effect on how the policy to fortify wheat flour with folic acid was formulated? 2. What were the health priorities when the initiative to fortify wheat flour with folic acid emerged? 3. What factors promoted placing the issue of fortifying wheat flour with folic acid on the agenda? 4. Which population groups was the measure to fortify wheat flour with folic acid intended to benefit?
2. Ideas	<ul style="list-style-type: none"> • Information management in determining the folate deficiency problem in the population and in defining policy • Existing information, who presented it and to whom 	<ol style="list-style-type: none"> 5. What information and/or experience of fortification already existed in the country, before the proposal to fortify wheat flour with folic acid arose? 6. Who had knowledge about food fortification with folic acid? What information did they have? 7. What information sources helped to see folate deficiency in food as a public health problem? 8. Were there different ideas, values and strategies on how to face these nutritional problems? What were they and who defended them? 9. What information strategy was used for policy formulation? Who promoted it and how was it promoted among health authorities and other participating sectors?

Fundamental Concept	Key Aspects	Key Questions
3. Interests and strategic conflicts	<ul style="list-style-type: none"> • Individuals, groups, organizations and institutions that participated in policy formulation • Positive or negative factors for policy formulation and approval • Contributions from those groups • Groups that led policy formulation and approval • Process of interaction among different institutions or organizations during policy formulation and approval 	<p>10. What persons, institutions or organizations were identified as key actors in formulating and approving the policy to fortify wheat flour with folic acid?</p> <p>11. Who led the process(es) to formulate and approve this policy?</p> <p>12. What helped or hindered formulating and approving this policy?</p> <p>13. What interests and conflicts were there when this policy was being formulated and approved?</p>
4. Institutions	<ul style="list-style-type: none"> • Experience of institutions or organizations in setting health priorities for the target population • Strategies of institutions or organizations in setting health priorities for the target population • Mechanisms for participation of institutions or organizations in policy formulation and approval • Formal process and decision-making structure in institutions or organizations 	<p>14. What experience did participating institutions and organizations have in fortifying food with micronutrients?</p> <p>15. What institutional mechanisms facilitated or hindered formulating and approving the policy to fortify wheat flour with folic acid?</p> <p>16. To what degree did the mission of each participating institution or organization facilitate or hinder formulation and approval of the policy to fortify wheat flour with folic acid?</p> <p>17. What are the formal public policy decision-making processes and structures in participating institutions and organizations?</p> <p>18. What strategies were used by those who led the process to access formal decision-making structures at the institutional and organizational levels, and to influence the approval of that policy?</p>

Fundamental Concept	Key Aspects	Key Questions
5. Policy instruments	<ul style="list-style-type: none"> • Policy options considered • Policy chosen and criteria used to select it • Existing policy and legislation when the policy was formulated • Policy resources available when the policy was formulated 	<p>19. What options were available to formulate a policy that would counter folate deficiency in the population?</p> <p>20. Why was fortification of wheat flour with folic acid chosen as the best way to face this nutritional problem?</p> <p>21. What legal instruments did the Ministry of Health have to formulate and approve a policy to fortify wheat flour with folic acid?</p> <p>22. What other resources did institutions and organizations use to formulate and approve this policy?</p>
6. Policy Action Plan	<ul style="list-style-type: none"> • Existence of an action plan • Stages of the action plan • Actors who participated in preparing the action plan • Positive and negative elements of the action plan 	<p>23. Is there an action plan for fortification of wheat flour with folic acid?</p> <p>24. What stages were identified in formulating the action plan?</p> <p>25. Who is involved in preparing the action plan?</p> <p>26. What institutions and organizations are involved in the action plan, and what responsibilities are assigned to each sector?</p> <p>27. What elements helped or hindered formulating the action plan?</p> <p>28. To what extent does this action plan satisfy the goals set at the beginning of the policy formulation process?</p>

Annex 2: Letter for key informants

DATE: _____

STUDY TITLE: Formulation of the policy to fortify wheat flour with folic acid — Case COSTA RICA

Dear _____ (key informant):

As part of the inter-country project, the Pan American Health Organization, the Ministry of Health, the CCSS (Costa Rican Social Security Fund) and INCIENSA (Costa Rican Institute for Research and Education on Nutrition and Health) request your consent to participate in a study to analyze and compare the process of formulating and approving public policy in three countries: Canada, Brazil and Costa Rica.

The case study in Costa Rica is based on analysis of how the **policy to fortify wheat flour with folic acid was formulated** and its purpose is to analyze how this policy was formulated, negotiated and approved in order to generate scientific evidence for formulation of public health policy.

Participants in the study were chosen through extensive research on wheat flour fortification, which helped identify “key informants” based on their active participation in, knowledge and experience of, and work with the policy to fortify wheat flour with folic acid in this country. Your assistance in reconstructing the process are therefore truly important for this study.

If you agree to collaborate, we ask for some of your time for an interview to get your perspective as a participant in the policy formulation and approval processes.

The interview will last approximately 90 minutes, at a time and place to be agreed upon. Due to the nature of the study, there might have to be more than one meeting in order to achieve the objective of the interview. Interviews will be done by two trained researchers: one will conduct the interview and the other will take notes. With your prior consent, interviews will be recorded on audio cassette, since this strategy allows investigators to make the most of your contribution, but if you do not want some of your statements recorded, you may say so to the interviewers. The interviews will later be transcribed by trained staff. Once these transcriptions are made, you will be asked to review them and make sure that the document reflects your input, and you may make corrections or add pertinent information.

All information you provide, as well as your personal data, are confidential. Once the conversation is transcribed and reviewed by you, the contents of the audio tapes will be deleted and the sources of transcriptions will not be identified with your name, but rather with a code.

Results of the analysis from the interviews will be compared to those from other studies carried out in Brazil and Canada, and may be disseminated and published in scientific reports or documents in Costa Rica and abroad.

Participating in this study does not entail any cost to you; likewise, no particular potential risks or benefits to you from your participation in this study have been identified. However, it is clear that your input is highly valuable for public health development in the country.

Your participation is voluntary and you have the right not to participate or to withdraw from the study whenever you wish. You will also have access to the final results of the investigation.

For more information about the study, please contact the coordinator at the telephone number(s) given below.

Thank you very much for your collaboration.

Sincerely,

Project Coordinator
Melany Ascencio, M.Sc.
Strategic Studies Unit
Health Technology Research and Development Directorate
Ministry of Health
Telephone: 257 31 18
didt-uee@netsalud.sa.cr

Annex 3: Informed consent form

DATE: _____

STUDY TITLE: “International Study for Establishing a Health Policy Observatory” — Case COSTA RICA

I, _____, have read and understood the explanations given in the above letter concerning the health policy study carried out by PAHO, the Ministry of Health, the CCSS and INCIENSA. This study is intended to analyze and compare health policy formulation and approval processes in three countries: Canada, Brazil and Costa Rica. The case study – Costa Rica is based on analysis of the **“Process of formulating, negotiating and approving the policy to fortify wheat flour with folic acid.”**

I understand that I will participate in an interview of approximately 90 minutes, which will be recorded and transcribed. In addition, if I wish, I may have a copy of the issues to be discussed during the interview beforehand. I also understand that after the interview I will be asked to review the information transcribed so that I can verify it and make corrections or additions. I also understand that the information which I provide is confidential and will be analyzed for comparison to similar studies in Brazil and Canada. I also understand that the results of this study will be disseminated and published in Costa Rica and abroad.

I understand that there are no known risks or benefits from my participation in this study, and this participation does not involve any financial cost to me. I likewise understand that I may decide not to participate in the study or to withdraw from it whenever I wish.

I have read and understood the informative letter and this consent form. I also understand that I may contact the study coordinator at the telephone number(s) included here if I wish to obtain more information on how the research is going.

Yes, I agree to participate in this study as a key informant.

NAME OF INFORMANT	ID NUMBER	SIGNATURE
NAME OF WITNESS	ID NUMBER	SIGNATURE
Melany Ascencio, M.Sc.		
NAME OF COORDINATOR	ID NUMBER	SIGNATURE

Melany Ascencio, M.Sc.
Strategic Studies Unit
Health Technology Research and Development Directorate
Ministry of Health
Telephone: 257 31 18
didt-uee@netsalud.sa.cr

Notes:

You will receive the original document that you signed and a copy will be kept by the coordinators of this study.

You may consult the document produced by this investigation if you wish to do so.

Annex 4: Intentions, capacities, needs, alliances and conflicts of the different actors when the policy was formulated

Actors	Intentions	Capacities	Needs	Alliances and Conflicts
Authorities from the Ministry of Health	<p>Health authorities from the new government accepted the challenge to strengthen primary health care, thus promoting health and prevention programs.</p> <p>The Government Plan (1994–1998) to guide health efforts identified iron-deficiency anemia as a priority.</p>	<ul style="list-style-type: none"> • In charge of health administration • Power to bring the various sectors together • Power to decide on health priorities and interventions • Power to allot budget to health activities 	<p>Restoring the “credibility” of the Ministry of Health. “The Ministry was under a cloud”; “It had to show leadership and play its rightful role” (INF04)</p>	<p>Alliances:</p> <ul style="list-style-type: none"> • President of the Republic • Technical team from Nutrition Division • INCAP • Wheat mills <p>Conflicts:</p> <p>Negotiations with bread makers to eliminate potassium bromide from flour had generated resistance and opposition. They paralleled the negotiation to fortify wheat flour with folic acid.</p>
Nutrition Division – Ministry of Health	<p>Ensuring good nutritional status in the population, through investigations that provided evidence on the nutritional status of Costa Ricans and monitoring actions to improve this status.</p>	<ul style="list-style-type: none"> • Technical Team for Nutritional Surveillance at the Ministry of Health, capable of leading food fortification policy formulation, negotiation and approval • Knowledge of nutrition • Experience in nutritional research • Experience in negotiating with business 	<ul style="list-style-type: none"> • Obtaining political, technical and financial support to carry out the National Nutrition Survey and develop the best possible interventions to confront health problems related to the population’s nutritional status. • Obtaining political support from private businesses to tackle health problems revealed by the Survey • Having technical and technological criteria to ensure that the fortification process complied with requirements 	<p>Alliances:</p> <ul style="list-style-type: none"> • Health authorities • INCIENSA • INCAP • Pharmaceutical Company A • Flour industries

Actors	Intentions	Capacities	Needs	Alliances and Conflicts
The Costa Rican Institute for Research and Education on Nutrition and Health (INCIENSA)	Providing support to the Ministry of Health for epidemiological and nutritional surveillance, and control of fortified food.	<ul style="list-style-type: none"> Laboratory for food analysis since 1989. The National Reference and Micronutrients Center has been working with food fortification since 1997. 	<ul style="list-style-type: none"> Training of human resources Financing inputs for laboratory analysis required in the Nutrition Survey 	Alliances: <ul style="list-style-type: none"> Close relationship with MH Nutritional Surveillance Department INCAP
Ministry of the Economy, Industry and Trade (MEIC)	Regulating domestic and imported products through national standards	<ul style="list-style-type: none"> Legal framework to control the domestic industry. Extensive knowledge of and experience with regulation issues. 	<ul style="list-style-type: none"> Having updated criteria to regulate domestic and imported products 	Alliance: <ul style="list-style-type: none"> Ministry of Health

Actors	Intentions	Capacities	Needs	Alliances and Conflicts
The Central America and Panama Nutrition Institute (INCAP)	Providing <i>knowledge and knowledge management (INF14)</i> ; seeks to develop nutritional science, promote its application and strengthen the ability of member countries to solve their own food and nutrition problems.	<ul style="list-style-type: none"> • Experience in conducting and developing nutrition research in the region • Technical knowledge for identifying nutritional deficiency, at-risk population, and measures to counter nutritional deficiency. • Capacity to create technical teams with experts in nutrition in the region. • Experience in formulating public policy. • Technical and financial resources to assist nutritional surveillance processes in countries in the region. • Science and technology division with experts in biochemical analyses. • Advisory council made up of the directors general of health in the region, and a board of directors composed of health ministers in the region. 	<ul style="list-style-type: none"> • Complying with food fortification agreements in Central America. • Having evidence and fortification experience in some country in the region, so it may be used as an example to try to take such action in other countries in the region. 	<p>Alliances:</p> <ul style="list-style-type: none"> • Technical groups in Central America • Health authorities

Actors	Intentions	Capacities	Needs	Alliances and Conflicts
Mill I	<p>Producing wheat flour of good quality at national level and gaining consumers' confidence in domestic products (<i>"with the same or better quality as flour from the United States"</i> INF18).</p> <p>From its inception, it has been identified with fortification policy and commitment to social welfare: <i>"guided by an understanding sense of solidarity"</i> (INF17). <i>"Highly sensitive to social issues (...) a business that is concerned with public health"</i> (INF18)</p>	<ul style="list-style-type: none"> • Extensive experience in wheat production and in fortifying wheat flour with vitamin complexes. • Training in wheat fortification in other countries. 	<ul style="list-style-type: none"> • Greater regulation of flour imports to Costa Rica. Fighting unfair competition. • Increasing product quality to respond better to international competition. <i>"Market opening entails stronger competition, thus the quality of flour is an important competitive factor"</i>(INF18) 	<p>Alliances:</p> <ul style="list-style-type: none"> • Close relationship with the government (Ministry of Health, CNP, MEIC) since its inception • Chamber of Industries • International Association of wheat producers • Food Industries Association

Actors	Intentions	Capacities	Needs	Alliances and Conflicts
Mill 2	Becoming more competitive and attractive to commercial partners, to be able to access more international markets.	<ul style="list-style-type: none"> • Laboratory. • Experience producing wheat flour. • Technical and technological resources for fortifying flour with vitamin complexes. • Knowledge of flour fortification issues from participating in international congresses and assemblies of millers which presented information on the importance of fortification. 	<ul style="list-style-type: none"> • Meeting requirements of its commercial partners. • Flour produced must conform to USDA regulations, so that its pasta-producing commercial partner could export to the U.S. market. • Defining the proper dose of the vitamin complex in wheat flour and semolina. • Offering a product of higher quality to meet consumer needs. 	<p>Alliances:</p> <ul style="list-style-type: none"> • Commercial partners • Food Industries Association • Chamber of Industries • Technical team
Pasta manufacturers	<p>Producing pastas of competitive quality for the international market.</p> <p>Exporting fortified pastas to the United States under USDA regulations.</p>	<ul style="list-style-type: none"> • Financial resources to produce and export pastas. • Important commercial partners of the mills. 	<ul style="list-style-type: none"> • Extending their commercial boundaries, exporting to the United States. • Having wheat semolina for pastas that meet U.S. quality standards. • Preventing micronutrients added to wheat flour from producing organoleptic changes in the product, or spoiling when subjected to high temperatures to produce pasta. 	<p>Alliance:</p> <ul style="list-style-type: none"> • Mills

Actors	Intentions	Capacities	Needs	Alliances and Conflicts
Pharmaceutical Company A	Manufacturing vitamins and other nutrients	<ul style="list-style-type: none"> • A vitamins division where the biologic and metabolic activity of vitamins was analyzed. • Information about scientific research on folic acid use to reduce incidence of neural tube defects. • Information about fortification efforts around the world. • Distribution of scientific items in governments and industries. • Financial and technical resources to provide the mills with premix and support dosage and mix regulation process. 	<ul style="list-style-type: none"> • Selling premix to mills in Costa Rica and the region. 	<p>Alliances:</p> <ul style="list-style-type: none"> • Nutritional Surveillance Division of Health Ministry • Mill I
Food Industries Association	Defending the interests of domestic businesses that produce raw materials and food. Seeks to make food industry more competitive. Public policy such as food fortification “was not among its priorities” (INF20)	<ul style="list-style-type: none"> • Represent the industrial food sector. • Knowledge of its clients’ needs in the market, as well as those of small producers. 	<ul style="list-style-type: none"> • Have a competitive advantage over imported products. • Make businesses more productive. • Be different from the Chamber of Industries. • Government policy to support the sector 	<p>Alliances:</p> <ul style="list-style-type: none"> • Members <p>Conflicts:</p> <ul style="list-style-type: none"> • Conflicts of interest between flour producers and food industries that used flour to make their products within the association. • The government and its institutions out of touch with industry. Problems with bureaucracy of Ministry of Health and requirements for food registration and control.

