

## **WHO/PAHO REGIONAL EXPERT GROUP FOR CARDIOVASCULAR DISEASE PREVENTION THROUGH POPULATION-WIDE DIETARY SALT REDUCTION**

FINAL REPORT  
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## Forward

In September 2009, the Pan American Health Organization (PAHO) launched the initiative – *Cardiovascular Disease Prevention through Population-wide Dietary Salt Reduction* – by convening an Expert Group with a 24-month mandate. Its key contribution was to supply tools and issue recommendations for strategies and interventions in aid of reducing sodium intake levels in populations in the Region. Its activities were to be in line with and support the World Health Organization global platforms for dietary salt reduction and were to take into consideration the specific features and context of the Region and its Member States. Critical among the latter are: that salt is still seen predominantly as a vehicle for micronutrient fortification; many countries in Central America and the Caribbean import much or most of their foods; surveillance capacities are often limited; national food regulatory agencies and capacities are often lacking; small and medium enterprises, the informal food sector and discretionary salt use can account for large proportions of total salt intake in many countries; and the nutrition transition emerging in several countries calls for timely action.

When we launched the regional initiative, three countries reported active national strategies to reduce salt intake at the population level. Two years later, several countries have strong approaches that stand at the forefront of a growing momentum that involves multiple sectors and stakeholders. The Expert Group has not only fulfilled its mandate, having provided technical inputs, products and guidance proven to be useful to Member States and globally, it has also strengthened the science that supports national cardiovascular and/or non-communicable disease (NCD) and nutrition policies that include dietary salt reduction. These contributions will help countries in the Region to implement key interventions identified in the Political Declaration of the recently concluded UN High Level Meeting on NCDs in New York.

To the members of the Expert Group, the technical advisors who provided additional expertise and support, to the countries that directly supported the development of various products and to the secretariat for the initiative, I extend congratulations for a job well done. For its part, PAHO recognizes that more needs to be done, that several complex issues require careful and sustained attention. We will continue to facilitate experts to support countries in the Americas to initiate, secure and expand national action, to further catalyze and stimulate non-governmental organizations, civil society, international organizations and the private sector to meaningfully participate in and contribute to reducing the overconsumption of salt, and we will include dietary salt reduction as a major area of work in our Pan American Forum for Action on NCDs.



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## Executive Summary

• High salt diets are a major cause of raised blood pressure, increasing the risk for cardiovascular and kidney disease and death. Already in 2000, about one in four adults world-wide had hypertension. Prevalence is expected to rise from a combination of people generally living longer and prevention of raised blood pressure being largely ineffective up to now.

Reducing dietary salt at the population level is the most cost-effective public health measure available to lower blood pressure and mortality. It can save lives and healthcare dollars across low, middle and high-income countries. Knowing this, the Pan American Health Organization (PAHO) in September 2009 convened a group of independent international experts on salt and health to guide the first two-years of a regional initiative – Cardiovascular Disease Prevention through Dietary Salt Reduction.

The Expert Group and its five sub-groups, supported by additional technical expertise, addressed issues and prepared resources to assist Member States in engaging the food industry on product reformulation; advocacy and communication; surveillance (sources of salt in the diet, salt intake and public knowledge and opinions on salt and health); salt fortification with iodine; analysis of health and economic impacts of dietary salt reduction; and review of scientific evidence. The work is consistent with and supportive of the concurrent WHO global initiative for dietary salt reduction.

This report marks the completion of the first two years of the regional initiative and the 24-month mandate of the Expert Group. The report summarizes the progress made and the lessons learned to date by the stakeholders, and it features the achievements of and resources prepared by the Expert Group and its sub-groups. It also presents the Expert Group's key messages and recommendations directed to the major stakeholders in dietary salt reduction: Member States; the food and salt industries; non-government organizations (NGOs) and civil society; WHO/PAHO and other international organizations.

There is momentum and potential for a second phase of activity in the region. Several of the challenges identified by countries, whether active or not yet, can be addressed through the dissemination and facilitated implementation of the tools and resources collected and developed by the Expert Group. The target and timeline commitments made by the multinational and large national food companies in Brazil and to the US National Salt Reduction Initiative (NSRI) (which in addition received restaurant chain commitments) are evidence of what can be anticipated with regards to food reformulation and can be examples to other markets and countries in the region. The occasions for dissemination are also opportunities to continue and expand networking and sharing of plans, resources and approaches.

For low- and middle-income countries that have not yet launched dietary salt reduction initiatives and are considering where to start, the experiences in the southern cone countries, especially regarding bread – a major source of salt – provide important lessons and direction. The national experiences with and tools for public information and awareness raising campaigns are potentially of great value to these countries – they can inform public health policy makers who need to build the broad public support that can secure the issue on political agendas.

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• The word salt is used to refer to sodium and the term “reducing dietary salt intake” implies the reduction of total sodium intake from all dietary sources including, for example, salt added during food manufacturing and processing, sodium additives such as monosodium glutamate and other sodium-based preservatives or taste enhancers, as well as salt added at the table and in cooking. Where salt substitutes are advocated (partially replacing sodium with potassium and other components) sodium reduction may be achieved without salt reduction thereby requiring the distinction between the two terms.

## Key Messages

### **Salt intake exceeding biologically adequate levels has a causal and direct relationship with greater-than-optimum levels of blood pressure.**

Countries should launch national initiatives to reduce the overconsumption of salt as part of non-communicable disease prevention or healthy nutrition policies, taking advantage of the lessons learned and momentum in other countries and the region, using entry points and action sequences most appropriate to country contexts, adopting at least the internationally recommended target of less than 2000 mg sodium or 5 g salt from all sources per person per day by 2020.

Countries should use the most reliable and valid methods feasible to determine a baseline of the main sources of salt in the national diet (salt in commercially processed foods and restaurant/catered foods that is added before products are sold, and the salt or high salt products added at the table and in cooking (personal discretionary use)) and population level salt intake. While secondary data can supply estimates of total salt intake, there should be provision made for 24-hour urine sampling to confirm findings.

Countries should take advantage of health economic analysis models and methods currently available to demonstrate the disease burden of high salt diets and conversely the benefits to population health and economic development of reducing the overconsumption of salt.

Where packaged foods and food service establishments (restaurants and caterers) are a major source of dietary salt or are emerging as such, countries working with the food industry should set targets and timelines for reducing salt content. When doing so, countries should review the reformulation commitments and low salt products made by food companies in and for other markets in the region and elsewhere as evidence of what can be done. Countries can begin with voluntary targets for high volume food categories followed by targets for all foods that contribute salt to the diet. Should voluntary efforts lag or fail, the salt content of foods should be regulated within the national food safety and health protection legislative frameworks to ensure market-wide impact and coverage of all relevant food categories.

Countries should include broad public awareness and education campaigns in their national initiatives targeting high salt intake. The campaigns should mobilize relevant non-government organizations, consumer organizations, civil society, public policy makers, public health and healthcare professionals and the food and salt industries and their trade associations, and be guided by national knowledge on population level salt intake and the main sources of salt in the diet.

Countries should establish systems to objectively and transparently monitor food industry progress against the targets and timelines and evaluate and publicly disclose whether or not industry commitments for salt reduction, whether voluntary or mandatory, are being met. At the same time countries should continue to monitor population salt intake levels and sources of dietary salt through risk factor studies to determine the impacts of food product reformulations and reductions in the personal use of salt.

Countries should routinely monitor population level iodine intake as dietary salt is reduced and, where iodine deficiency is a concern, develop policies for the voluntary or mandatory use of iodized salt or iodine-containing premixes in commercially produced food at levels appropriate to population iodine needs.



## Recommendations

### To Member States

Recognizing that people in the Americas are over consuming salt, resulting in raised blood pressure and increased risk of cardiovascular and kidney disease, and understanding that unhealthy diet is a major threat to the health of populations and to sustained economic growth and productive workforces, the governments of Member States should take a leadership role and:

- |                                |   |
|--------------------------------|---|
| <b>Reduce exposure</b>         | Launch national multi-stakeholder initiatives to reduce people's exposure to high salt diets as part of national non-communicable disease prevention or nutrition policies. Taking guidance from the <i>WHO Global Strategy on Diet, Physical Activity and Health</i> , use entry points and action sequences most appropriate to country contexts, using processes where collaboration with stakeholders is transparent and conflicts of interest are minimized.   |
| <b>Strengthen surveillance</b> | Develop or adjust and sustain surveillance mechanisms, using the most reliable and valid methods feasible in country contexts, to first determine a baseline and then monitor the main sources of salt in the diet (salt in commercially processed foods and in foods prepared by food service establishments (restaurants/caterers) where the salt is added before products are sold, and the salt added at the table and in cooking (personal discretionary use)) and population level salt intake. While secondary sources e.g. salt industry sales per capita, can supply estimates of salt intake, there should be provision made for 24-hour urine sampling to confirm findings of total salt intake. Refer to the tools and guidance prepared by WHO/PAHO specific for surveillance of dietary salt. |
| <b>Adopt timelines</b>         | Establish a schedule of national targets and timelines for a salt reduction program based on the knowledge of salt intake levels and the main sources of salt in the national diet, setting the ultimate target as at least the internationally recommended intake of less than 2000 mg sodium or 5 g salt from all sources per person per day by 2020. Establish interim targets e.g. at 3 and 5 year points as a means to monitor progress and allow adjustment of targets as needed.   |
| <b>Address economics</b>       | Estimate the health and economic development benefits of whole populations achieving the optimal level of salt intake to make the case for concerted all-of-society action. Take advantage of currently available models and methods.   |
| <b>Set targets</b>             | Engage multinational and national food industries – food manufacturers and food service establishments – in meaningful dialogues to establish sustainable and transparent processes where the industries commit to follow schedules to meet gradually lowered and measurable targets for the salt content of food categories, taking into account, as evidence of what can be done, the low salt products, reformulation schedules, targets and technologies applied by food companies in other countries where national salt reduction programs are underway. Closely monitor and disclose publicly the progress against commitments.  |
| <b>Consider regulation</b>     | Consider regulating the salt content of foods within the national food safety and health protection legislative frameworks to ensure market-wide impact and coverage of all relevant food categories.   |

<b>Institute advocacy</b>	Build or improve the capacities of the public institutions responsible for developing and maintaining a national initiative, specific to national needs, and demonstrate to policy makers at all levels and in various sectors the benefits and potential contributions of population level dietary salt reduction.
<b>Clarify labeling</b>	Mandate clear and simple labeling of packaged foods and foods prepared by food service establishments for the purchaser to easily identify the amount of salt contained in each serving (or per reference amount used in the national labeling system) and easily understand if the product is high versus low in salt content. At the same time, discourage the marketing of processed foods as “healthy” solely on the basis of being sodium-reduced given that unhealthy properties may remain e.g. high density, high fat, high sugar.
<b>Require reporting</b>	Require food manufacturers and food service chains to annually disclose and report the nutritional content of their products including their sales volumes and use this information to track trends in the salt content of the products and their consumption. Establish the mechanisms e.g. databases necessary to monitor trends. Databases should be publically accessible for use by consumers and researchers and civil society.
<b>Communicate effectively</b>	Coordinate and collaborate with, and where necessary train non-government organizations, consumer organizations and civil society to assist in broad and multifaceted educational campaigns to ensure that consumers, public health and healthcare professionals, public policy makers and the food and salt industries are informed and educated about the harmful effects of excess salt on health, about the main sources of salt in their diets and the amounts in food products.
<b>Protect children</b>	Refer to the 2010 WHO <i>Set of Recommendations on the Marketing of Foods and Non-alcoholic Beverages to Children</i> to guide the design of or strengthen existing national policies to reduce children’s exposure to the marketing of foods high in saturated fats, trans fatty acids, added sugars or salt.
<b>Standardize procurement</b>	Develop standardized food procurement policies for all public institutions and for the use of public funds consistent with healthy nutrition guidelines. Policies should include criteria limiting the amount of salt in products purchased.
<b>Enlist workplaces</b>	Encourage workplace wellness programs in public and private sectors that include access to healthy food choices including those that are low in salt.
<b>Monitor iodine</b>	Monitor iodine intake at the population level in order to adjust iodization levels of salt, both discretionary salt (added at the table and in cooking) as well as that used by the food industry where applicable. Where iodine deficiency disorders remain a problem, pursue or strengthen policies for the voluntary or mandatory use of iodized salt or iodine-containing premixes in commercially produced food at levels appropriate to population iodine needs. Engage with PAHO and other international agencies to develop an overarching comprehensive action framework for countries in the region that complements existing regional and national efforts for dietary salt reduction.
<b>Disseminate successes</b>	Use the sub-regional economic platforms to facilitate dissemination of best practices that reduce the salt content of the food supply for food safety and food quality purposes and to reduce salt in foods imported and exported across common markets.

**Utilize CARMEN** Through the CARMEN network • promote the advances of national programs and disseminate lessons learned.

### **To the food and salt industries**

Recognizing that progress has been made in certain markets with new and reformulated low/no salt products, all multinational and national food manufacturers, private label retailers, food service establishments (restaurants and caterers) and the food services sector should:

- Be transparent** Make public the plans to reduce salt in all products, prioritizing mainstream and biggest sellers, and monitor progress on the plans and make public the results.
- Set targets** Cooperate with national governments in setting and making public reformulation targets and timelines that will meaningfully contribute to reaching the ultimate national intake target and implement corresponding product development and reformulation schedules.
- Supply globally** Supply to all countries in the Americas now, and continue to supply as they become available, the products with the best nutrient composition including the lowest salt content in a company's product line available anywhere in the world.
- Transfer technologies** Transfer the technologies that have delivered low/no salt content products in such countries as the United Kingdom and the United States to all branches and/or subsidiaries in countries in the Americas including the products with internationally recognized brands.
- Communicate responsibly** Ensure that public messages related to salt and health used in advertising, marketing and promotional activity is consistent with and reinforce those of WHO and the PAHO Policy Statement. Inform consumers responsibly that taste preferences for salt can be changed.
- Clarify labelling** Ensure clear and simple labelling of packaged foods and foods prepared by food service establishment for the purchaser to easily identify the amount of salt contained in each serving (or per reference amount used in the national labelling system) and easily understand if the product is high versus low in salt content.
- Supply information** Regularly provide up-to-date nutrition information to government in the format specified by government for the purposes of monitoring the salt content of foods.
- Protect children** Act according to the WHO *Set of Recommendations on the Marketing of Foods and Non-alcoholic Beverages to Children*.
- Honour commitments** To members of the International Food and Beverage Alliance who pledged to WHO in 2008 to support its *Global Strategy on Diet, Physical Activity and Health*,

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• CARMEN is an acronym for Collaborative Action for Risk Factor Prevention and Effective Management of Non-communicable Diseases and Conjunto de Acciones para la Redución Multifactorial de Enfermedades No Transmisibles – the network of countries in the Caribbean and Latin America that are applying integrated community-based approaches to preventing and managing non-communicable diseases and their risk factors.

act meaningfully on the commitments made with regards to reformulation and new food product development to offer consumers low/no salt alternatives world-wide.

Recognizing that the salt in packaged foods and foods prepared by food service establishments are increasingly if not already replacing discretionary salt as the main source of salt in the diet, and that these processed foods should therefore contain appropriate amounts of iodized salt or include iodine in fortification premixes, food manufacturers should:

**Conduct research** Invest in research to determine how to efficiently manufacture foods to deliver iodine at levels appropriate to population needs.

### **To non-government organizations and civil society**

Recognizing that NGOs and civil society, including also researchers and the academic community, have shown themselves to be powerful advocates and activists, their work can be parallel to or stimulate that of governments to move public health agendas. They can also motivate private sector responses to public issues or demands. Where not already mobilized on the issue of overconsumption of salt, NGOs, consumer associations and civil society should:

**Build capacities** Build internal capacity to advance salt reduction efforts. Societies of healthcare professionals and organizations representing consumers or patients should mobilize their memberships and build coalitions to impress upon individuals the need to reduce the personal use of salt and to pressure food manufacturers and food service establishments to reduce the salt content of their products.

**Standardize messages** Use standardized educational messages to promote a consistent understanding of the health issues related to high salt diets and solutions. Emphasize public education where discretionary salt – added at the table and in cooking – is the major source of salt in the diet. Where commercially prepared and restaurant/catered foods are or are becoming the main sources of salt, raise public awareness and mobilize consumers to demand greater choice and control over the salt content in the foods they buy. Use the fact sheets and other materials made available by WHO/PAHO, designed to facilitate common messaging to make the case.

**Advocate transparency** Advocate processes where public health collaboration with stakeholders is transparent and conflicts of interest are minimized.

**Monitor industry** Be the “watch dog” to monitor food industry adherence to voluntary or mandatory reformulation schedules or the government oversight of targets, and keep consumers informed of progress or lack there-of.

**Advocate healthy procurement** Advocate standardized healthy food procurement policies for public and private sectors that include placing limits on the salt content of foods purchased and served.

**Advocate labelling** Advocate clear and simple labelling of packaged foods and foods in food service establishments for the purchaser to easily identify the amount of salt contained in each serving (or per reference amount used in the national labelling system) and easily understand if the product is high versus low in salt content.

<b>Engage governments</b>	Engage with and strengthen relationships with governments using existing communication channels and broadening them when the opportunities arise.
<b>Engage media</b>	Engage with the media as broadly as possible to disseminate sound scientific evidence and advances in salt reduction in support of campaigns and advocacy for public and private sector actions. Put forward champions or prominent public figures as advocates to strengthen the actions to reduce population level salt consumption and initiate/support consumer demand for salt reduction across the food supply.
<b>Protect children</b>	Facilitate and support efforts to implement the WHO <i>Set of Recommendations on the Marketing of Foods and Non-alcoholic Beverages to Children</i> .
<b>Engage internationally</b>	Engage with PAHO and other international agencies to develop an overarching comprehensive action framework for the region to leverage existing regional and national NGO and civil society efforts for dietary salt reduction.

#### **To PAHO-WHO**

Recognizing its primary role in facilitating dialogue, providing technical support to Member States and intervening with national and international agencies on behalf of Member States, PAHO should:

<b>Advocate all-of-society approaches</b>	Advocate among governments and all stakeholders the need for a population-based all-of-society approach to salt reduction as a proven cost-effective and cost-saving intervention.
<b>Build databases</b>	Develop, maintain and make publicly available a database of national policies with a dietary salt reduction component including descriptions of mechanisms and instruments being applied and the national targets and timelines set for food category reductions.
<b>Facilitate dialogues</b>	Facilitate meaningful dialogue among national governments, the food and salt industries, NGOs and civil society to develop an overarching comprehensive and multisector action framework for the region that complements existing regional and national efforts for dietary salt reduction and salt iodization programs.
<b>Utilize CARMEN</b>	Ensure that learning and best practices in countries that are lowering dietary salt are shared through the CARMEN network and continue to provide technical and expert support to countries as needed.
<b>Encourage networks</b>	Encourage development of other networks and more generally the linking of similar initiatives to optimize the exchange of specific experiences and knowledge.
<b>Facilitate analyses</b>	Facilitate the national assessments of the population health and economic development advantages of lowering dietary salt through regional or sub-regional workshops on health economics modelling.
<b>Stimulate research</b>	Stimulate country-based and regional collaboration with research communities to evaluate and publish relevant findings, especially the evidence of cost-effectiveness and cost-savings from lower dietary salt, along with the initiatives and innovations implemented in low- and middle-income countries

as models appropriate to the economies and cultures of the Americas.

**Protect  
children**

Facilitate countries to implement the WHO *Set of Recommendations on the Marketing of Foods and Non-alcoholic Beverages to Children*.

**Facilitate  
synchronization**

Promote and support the synchronization of national salt iodization with salt reduction programs by facilitating collaboration with international stakeholders and with them jointly support country-level pilot studies.

**Advocate  
reporting**

Engage the relevant international and national agencies to advocate transparent and publicly available food composition data and database development.



# I Introduction

## The consumption and overconsumption of salt

The human body requires sodium to regulate body fluids and maintain critical body functions. Over the millennia of human evolution, the small amount of sodium found naturally in foods was physiologically sufficient by virtue of the body having developed mechanisms to retain and conserve it [1].

It has been approximately 5000 years since salt was first added to food to preserve it and enhance taste and thus added salt became the major source of dietary sodium. But whereas salt was originally a precious commodity with cultural and even religious significance and hence carefully used, increased mining and ease of transportation over the centuries made it gradually more accessible and inexpensive. With the developments in industrialized food processing over the last few hundred years, salt has become an almost ubiquitous additive to food with additional functions in e.g. food texture and appearance. Consumption is now so reliable that table salt is used as the principle vehicle for supplementary micronutrients e.g. iodine to prevent iodine deficiency disorders. Today in modern diets, naturally occurring sodium found in unprocessed foods accounts for less than 12 % of total sodium intake; the balance of sodium intake is attributed to added salt [2]. In high income economies, salt is particularly concentrated in commercially manufactured food products [1-3].

The internationally recommended salt intake level is less than 5 g/person/day [4;5]. Actual consumption levels are with few exceptions high world-wide, proven for the first time by the INTERSALT Study (1985-87) that determined comparable standardized sodium intake levels from 52 population samples in 32 countries based on 24-hour urine collections. The subsequent INTERMAP Study from 1996-99 in four countries provided similar findings and several recent dietary and urinary sodium data from observational and interventional studies continue to show excess intake [6].

In the Americas, recent dietary and urinary sodium excretion estimates confirm high per capita salt intake: Brazil at 11 g of salt/day [7]; Argentina with 12 g of salt/day [8]; Chile at 9.8 g of salt/day [9]; the United States with 8.7 g of salt/day [10].] and Canada with 7.7 g/day [11]. Sources of dietary sodium vary: in the United States [10] and Canada [11], 75% and 77% respectively of sodium consumed comes from processed foods; in parts of Brazil, 70% is attributed to discretionary salt (added in household cooking or at the table) [7].

## High salt intake is unsafe

Salt intake exceeding biologically adequate levels has a causal and direct relationship with greater-than-optimum levels of blood pressure [12;13]. Excess salt consumption increases the blood pressure of infants and children, of normotensive and hypertensive adults [14-17] and is attributable to 30% of the prevalence of hypertension [18;19] found in one in four of the world's adult population. Increased blood pressure even within the normal range is a major cause of disability and is the leading risk for premature death in the world [14]. Based on it increasing blood pressure and its probable promotion of gastric cancer, high salt intake is estimated to be the 7<sup>th</sup> leading risk for premature death in the United States and the second leading risk in Chile [20;21]. High salt intake also causes kidney stones and has a strong pathophysiological basis and association with osteoporosis, increased asthma severity, and obesity [22-24].

The prevalence of elevated blood pressure is expected to rise from a combination of people generally living longer and prevention of rising blood pressure being largely ineffective up to now, making the condition almost inevitable with advancing age. In 2001, nonoptimal blood



pressure and its resulting diseases consumed about 10% of global healthcare expenditures, considered a conservative estimate [25].

### Lowering salt intake is cost-effective and cost-saving

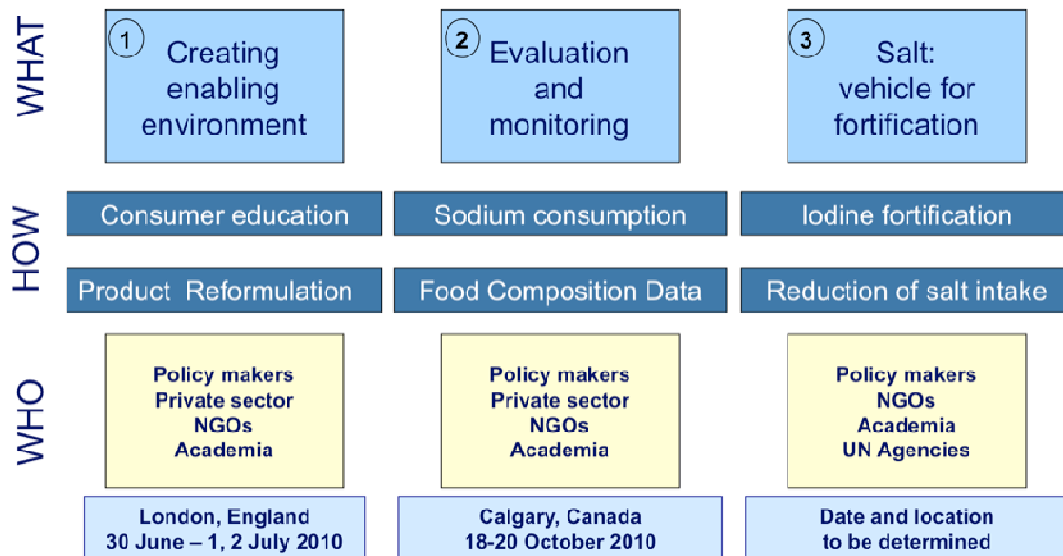
Lowering blood pressure by reducing salt intake even a small amount (15%) is estimated to prevent 8.5 million premature deaths in 10 years in low- and middle-economies and can deliver cost-savings in high-income countries [26-28]. Three countries have proven that sustained wide-ranging initiatives can reduce salt intake population-wide and in two countries, health benefits have accrued:

- Between 1955-89 average salt consumption in Japan dropped from 13.5 g to 12.1 g per day resulting in a gradual fall in blood pressure and a marked decline in deaths from stroke [29].
- Finland reduced population level salt intake by 25% over two decades beginning in the 1970s and similarly observed a marked reduction in blood pressure and stroke deaths [24].
- England reduced salt consumption in the population from 9.5 g in 2001 to 8.6 g in 2008 [30].

### WHO platforms for dietary salt reduction

WHO and the UN Food and Agriculture Organization (FAO) issued a joint report in 2003 in which the recommended individual salt intake be less than 5 g/day. Then as part of the implementation of the WHO *Global Strategy on Diet, Physical Activity and Health* (DPAS) and the *2008-2013 Action Plan for the Global Strategy for the Prevention and Control of Non-communicable Diseases*, WHO established a salt reduction strategy with three platforms shown below.

#### WHO Population Salt Reduction Strategy



- WHO with the UK FSA jointly organized Platform 1 – Create enabling environments – in the summer of 2010. It included an information exchange forum with the private sector and NGOs on population-based salt reduction strategies followed by a technical meeting. Discussed were interventions for consumer education and reformulation of industrially produced foods to enable consumers to make appropriate choices to reduce the total sodium content of their diet [31].

- In the fall of 2010, WHO/PAHO with the Government of Canada (Health Canada) organized Platform 2 – Evaluation and monitoring – also as an information exchange forum with the private sector and NGOs followed by a technical meeting where monitoring sodium intake levels at population level, assessment of dietary sources of sodium, and knowledge, attitudes and behaviours towards sodium and health were discussed [32].
- Platform 3 will bring together stakeholders in dietary salt reduction and salt fortification with iodine, to facilitate the coordination of the two strategies.

## II The PAHO initiative – Cardiovascular Disease Prevention through Population-wide Dietary Salt Reduction

### Background

Seminal to PAHO launching a regional dietary salt reduction initiative was the 2007 article in *The Lancet – Chronic disease prevention: health effect and financial costs of strategies to reduce salt intake and control tobacco use* [26]. It concluded that a voluntary or legislated programme of reformulations by the food industry to use less salt and sodium additives in food products, combined with a public health campaign to raise consumer awareness of the dangers of high salt intake and encourage less salt use in household cooking and at the table, is the most cost-effective public health policy available to countries whether they are low-, middle- or high-income.

In 2008/09, PAHO surveyed the Member States in the central and south sub-regions as to national salt reduction activities underway or intended. The 12 responding countries<sup>1</sup> reported the following main aspects of their approaches:

- five (Argentina, Brazil, Chile, Costa Rica and Uruguay) had national recommendations to limit salt intake (four had the target of less than 5 g/day/person and one recommended less than 6 g);
- four had qualitative recommendations for moderate use of salt (Grenada, Guyana, Panama and St. Vincent);
- five were conducting research on sources of sodium in the diet (Argentina, Bolivia, Brazil, Chile and Ecuador); and
- two had working groups/task forces leading national initiatives for salt intake reduction (Argentina and Chile).

With countries already demonstrating their intentions to reduce dietary salt, PAHO with the Public Health Agency of Canada organized a regional meeting in Miami in early 2009 as a forum to exchange information on action in and outside the region and to define what next steps would be of most assistance to advance the action in the Americas. Discussions identified a number of the key challenges to be taken into consideration as the region moved forward:

- Salt is still seen predominantly as a vehicle for micronutrient fortification (in particular for iodine and fluoride) therefore messages and actions to reduce salt intake must be synchronized with those addressing the prevention of micronutrient deficiency.
- Because many Central American and Caribbean countries import much or most of their foods, it is essential for salt to be on the agendas of regional political / trade bodies.
- National food regulatory agencies are still rare in the region, existing only in Brazil, Canada, Chile, Costa Rica, Mexico and the United States, therefore instruments such as mandatory nutrition labeling and nutrient analysis and monitoring, proven elsewhere to be effective in influencing the food industry to remove or reduce harmful ingredients like trans fats and high salt, are uncommon in the region. The public commitment of many countries to the "right to health" of their populations can be used as an argument while regulatory capacities grow.
- Small and medium enterprises and the informal food sector are very common in the region, with products from the latter virtually uncontrolled. This "atomization" of food provision poses special challenges for engagement, effective collaboration and monitoring.
- Taking action now is critical. Trade liberalization and economic growth in several countries in the region, particularly in Central and South America, are increasing consumer purchasing power and as a result, changing lifestyles. Among the changes is a shift in food preferences

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<sup>1</sup> Argentina, Bolivia, Brazil, CFNI (Bahamas, Dominica, Grenada, Guyana, St. Lucia, St. Vincent and the Grenadines), Chile, Costa Rica, Ecuador, Honduras, INCAP (Guatemala), Panama, Paraguay, Uruguay

from home cooking to greater consumption of commercially processed products, many of them highly salted, that multi-national and large national companies are increasingly making available on local markets. At this juncture, reducing the salt content across the food supply in the context of promoting healthy diet and lifestyles is timely, to the benefit of population health and by extension supporting the economic development apparent in the region.

The key outcome of the Miami meeting was the call for PAHO to lead a region-wide initiative to mobilize Member States to reduce the overconsumption of salt. PAHO responded, convening in September 2009 a group of independent international experts on salt and health from within and outside the region to guide and support an initiative – Cardiovascular Disease Prevention through Population-wide Dietary Salt Reduction – encompassing North, Central and South America and the Caribbean, intended as multifaceted and multistakeholder.

### **The Expert Group and its sub-groups**

The Expert Group comprises academics and researchers, and representatives of international health organizations, consumers, non-government organizations active in health and of health institutions in Member States working on dietary salt reduction and cardiovascular and chronic disease prevention. The Group operated with a Chair and two co-chairs, one each for the Caribbean and Latin America, supported by a secretariat led by PAHO.

The Group was to issue recommendations for strategies and interventions in line with the WHO strategy that can be employed to reduce salt intake levels among people in the Americas. Its terms of reference to serve the region and sub-regions were as follows:

- Estimate the impact of a successful program to reduce salt consumption in the Americas on hypertension and cardiovascular disease prevalence
- Initiate regional contacts with industry
- Identify advocates in the region
- Connect main players in the region
  - Prepare a Policy Statement on salt reduction to be signed by key players in the region
- Develop common resources
  - Sets of common messages to raise awareness among consumers and healthcare professionals
  - Guidance for surveillance and monitoring
- Provide guidance and support directly to governments (e.g. national task forces, national awareness raising campaigns, national target setting, etc.)
  - Support establishment of national task forces
  - Support national efforts to build awareness in governments and the general population in countries regarding salt reduction
  - Identify necessary technical expertise for development of country targets and timelines setting

The Group divided itself into sub-groups and with additional technical expertise, developed policy recommendations and resources (products) for the areas that reflected its terms of reference and were seen as most helpful to Member States (already taking action as well as those not yet active): engaging the food industry on product reformulation and new product development; advocacy and communication; surveillance of salt intake, sources of salt in the diet and public knowledge and opinions on salt and health; salt fortification with iodine; and promoting national level health economic impact studies on salt reduction. The Group and various members published the advances made in the region and promoted the initiative at regional and global meetings and conferences. A scientific review committee was also formed to examine and respond to new research released during the period of the Group's mandate.

## **Purpose of this report**

This report marks the completion of the initial two-year mandate of the initiative. It presents the work of the Expert Group, the progress made to date by countries in the region and the Expert Group's key messages and recommendations for further advancement directed to the major stakeholders in dietary salt reduction: Member States; the food and salt industries; non-government organizations (NGOs) and civil society; WHO/PAHO and other international organizations involved in dietary salt reduction and salt iodization.

### III Tools, resources and achievements

The Expert Group and sub-groups developed tools and resources and formulated guidance to assist Member States to start and strengthen national strategies for dietary salt reduction. In some cases, tools and resources were already available and with assistance from PAHO and Expert Group members, were made culturally appropriate and translated where necessary. In other cases, the Expert Group and sub-groups initiated the development of materials, this through participative processes often involving additional technical expertise, supported by PAHO. Described below are the products prepared for each of the areas to which the Expert Group applied itself plus there are examples of achievements relevant to each.

#### Advocacy and communication

##### The Policy Statement

The Expert Group's first product – a Policy Statement, the road map for the initiative – was launched in November 2009 in Santiago Chile at a symposium organized during a meeting of the Latin American Society of Nutrition (SLAN). It set the goal – the internationally recommended intake of less than 5 g salt per capita per day (in the absence of equivalent or lower national targets) – to be reached by 2020 among people in the Americas.

The intended audience for the Statement is policy and decision makers in government; leaders in non-governmental organizations representing consumers, health, scientific and healthcare professionals; civil society; the food industry (including food processors and distributors) and food importers and exporters; and PAHO. As of May 2011, there are 56 endorsements of the Policy Statement, listed in Appendix 1.

##### Fact sheets, presentations, core references

The sub-group adjusted a standardized presentation on salt reduction and a set of fact sheets to be culturally appropriate, covering salt and hypertension, salt and osteoporosis and salt and kidney failure. The materials are intended for the general public, health professionals and policy makers. The sub-group also compiled a list of core references that underpin the scientific basis and benefits of dietary salt reduction.

##### Information dissemination

Over the course of its two-year mandate, the Expert Group issued press releases and offered webinars through PAHO; published articles in peer reviewed journals; members made presentations at international conferences and meetings; and otherwise, experiences, scientific information and the Policy Statement were made available at relevant events. Appendix 2 has a complete list of dissemination activities.

*For the governments of Uruguay and Costa Rica, their endorsement of the Policy Statement served as a foundation for launching national initiatives.*

*For civil society in Latin America, led by Consumers International and the Inter-American Heart Foundation, the Policy Statement was the basis for organizing around information exchange, for mobilizing action and providing support for the regional initiative.*

*The Healthy Caribbean Coalition has developed culturally tailored material to raise awareness of high salt diets and their harmful effects. The Heart Federation of Jamaica promoted “Drop the Salt – Protect Your Health” as the theme for Salt Awareness Week in 2011.*

*More than 40 Latin American civil society organizations launched the Healthy Latin American Coalition (Coalición Latino América Saludable - CLAS) in Buenos Aires in early 2011. It declared the grave impact of non-communicable diseases in the region – a deterrent to human development and obstacle in preventing poverty. The Coalition developed an initiative specific to salt and health (ALASS –Asociación Latino Americana Sal o Salud) for the exchange of information, to build proposals for funding and provide different platforms for knowledge dissemination.*

*The Chilean affiliate of WASH International was launched in June 2011.*

## Regional support for the WHO Platform I Meeting on Creating Supportive Environments

Members of the Expert Group participated in the Platform I Meeting in July 2010 in London, joining representatives from other WHO regions. They presented the Pan American initiative, the profile of the Expert Group and its sub-groups, their objectives and achievements to date.

### Surveillance

Surveillance of actual salt intake, determining the main sources of salt in the diet and understanding what people know about salt and its effects on health are the critical underpinnings to the design of a national effort to reduce the consumption of salt. They point out where to place the emphasis and what goals to set. With baselines known, ongoing monitoring demonstrates whether goals are being met.

#### Protocol for Determining Population Level Sodium Intake in 24-hour Urine Samples

With support from the National Institute of Public Health in Cuernavaca (Mexico) and the Salvador Zubiran National Institute of Medical Sciences and Nutrition in Mexico City, the sub-group for surveillance prepared the *Protocol for Population Level Sodium Determination in 24-hour Urine Samples*. The 24-hour urine sampling method applied to a representative sample of the population provides the most valid and reliable data on salt intake in a country. The Protocol also recommends the concurrent assessment of potassium and iodine intakes as they are important dietary constituents to take into account in salt reduction programs.

While secondary sources can supply estimates of salt intake, there should be provision made for 24-hour urine sampling to confirm findings.

#### A Review of Methods to Determine Main Sources of Salt in the Diet

With support from the Brazilian Ministry of Health, the sub-group developed the Review, a companion document to the *Protocol*. It serves as a guide to selecting the most appropriate method, given country resources and circumstances, to identify the complete profile of dietary sources of salt as baseline information and for ongoing monitoring:

- foods that people consume and the amounts and frequency of consumption
- salt content of the most commonly consumed foods
- the amount of salt added at the table and in cooking
- intake of high-salt foods that are culturally or regionally-specific

*Three countries in the region have applied the 24-hour sodium excretion Protocol:*

*- the SALMEX study, conducted by the National Medical Science and Nutrition Institute Salvador Zubiran over 2010/11 involving a worker cohort, is the first 24-hour urinary sodium excretion study in Mexico;*

*- the Chronic Disease Research Centre in Barbados determined a national baseline for sodium excretion in 24-hour urine in 2010/11 as part of a national Salt Intake Study;*

*- the New York City Department of Health and Mental Hygiene measured sodium excretion in 24-hour urine samples from 1700 resident non-institutionalized adults in 2010 [33].*

*A food frequency questionnaire first developed for the Barbados National Cancer Study in 2000 was adjusted in 2010 to account for changes in the Barbadian diet and at the same time allow a specific evaluation of salt consumption.*

*The National Household Budget Survey (HBS – Pesquisa de Orçamentos Familiares) administered between July 2002 and June 2003 by the Brazilian Institute of Geography and Statistics (IBGE, Instituto Brasileiro de Geografia e Estatística) provided the data from which the main sources of salt in the Brazilian diet were derived [7].*



## Literature review of 24-hour urine and spot sampling methods

A systematic review of literature, underway, is assessing the validity and reliability of sodium and iodine intake values derived from spot urine samples to estimate salt and iodine consumption compared to the 24-hour urinary excretion method considered to be the gold standard. The analysis of multiple studies has so far found current spot urine methods to be unreliable in representing daily sodium consumption.

## Studying knowledge, attitudes and behaviour

Expert group members initiated two projects directed at consumers' knowledge, attitudes and behaviours (KAB) regarding salt/sodium and food labels. The Consumers International (CI) representative on the Expert Group led the first project, assisted by other Group members, in which a KAB instrument and methodology were developed and then tested in five countries among consumers approached in an ad hoc manner on the street. The findings informed a meeting of the CODEX Alimentarius Committee on Food Labeling (see below). A second phase on KAB, to involve interviews with focus groups applying qualitative research methods, is being led by INCIENSA (Costa Rican Institute for Research and Education on Nutrition and Health) working with researchers in Costa Rica, Ecuador and Argentina.

## Building regional capacity for food composition data

Essential to an assessment of the main sources of salt in the diet are up-to-date food composition data. Specific to foods in Latin America is the database of LATINFOODS – the Latin American Network of Food Data Systems [34]. In 2011, the Expert Group member from Costa Rica facilitated a survey of LATINFOODS members and related food analysis laboratories in 19 countries on the status of their data on the sodium content of foods [35].

## Participation in an international collaborative project to compare and monitor the nutritional composition of processed foods

Ten countries in the Americas region (Argentina, Barbados, Brazil, Canada, Costa Rica, Ecuador, Guatemala, Mexico, Panama, Peru) are participating with eight others elsewhere in an international initiative to survey processed foods in major food categories using a standardized methodology. The objective is to compare the nutritional composition between countries, between food companies and over time. The George Institute for Global Health in Australia is coordinating and secretariat to the project.

*CI together with researchers in Chile, Argentina, Ecuador, Costa Rica and Canada tested the KAB instrument. The results (unpublished) showed poor knowledge on salt levels in food and of the effect of salt on health both in the general population as well as among individuals with hypertension, indicating that more knowledge dissemination on the topic is required.*

*Knowledge, perceptions and behaviour in relation to salt intake and dietary sodium, its association with health and the nutrition labeling declaration in foods. Multicenter collaborative study sponsored by WHO/PAHO, 2011-2012. In Argentina, Costa Rica and Ecuador, in-depth semi-structured interviews with two focus groups in each country, one rural and one urban, six adults in each (12 total), will explore KAB issues, supplemented by direct observation.*

*The LATINFOODS members and other laboratories responded to a questionnaire on whether they had data on the sodium content in 14 categories of processed and pre-prepared foods. While 68% of respondents reported having some information on sodium content in all food categories (mainly breads, cereals and snacks), all respondents indicate that data need to be updated and a high majority requires resources and training to do so. All respondents are supportive of the regional initiative to reduce dietary salt.*



## Regional support for the WHO Platform II Meeting on Surveillance for Population Salt Reduction

PAHO with the Government of Canada, assisted by the Chair of the Expert Group, co-hosted a WHO Platform II meeting on surveillance in October 2010 in Calgary, Alberta. Expert Group members contributed the knowledge and experiences with surveillance in the region and featured the related products – the *Protocol for Population Level Sodium Determination in 24-hour Urine Samples*, the results of the KAB survey by CI and research partners, the planned focus group based research on KAB, and the findings up to that point from the review of literature regarding 24-hour urine sampling versus spot urine methods to determine sodium intake.

The outcome was the WHO publication *Strategies to monitor and evaluate population sodium consumption and sources of sodium in the diet – Report of a joint technical meeting by WHO and the Government of Canada, Canada, October 2010*.

## Food industry engagement

### Industry questionnaire (for multinational and national food manufacturers)

The PAHO secretariat with members of the industry sub-group engaged with several multinational food companies that participated in the PAHO 2009 Partners Forum and had joined a healthy eating working group to continue their involvement. These Forum participants agreed to pilot a questionnaire with two objectives:

- determine a baseline on the nature and extent to which commercial food processors are reformulating food products to reduce their sodium content or are formulating new product lines with low/no sodium; and
- identify the leaders in (re)formulation.

Questions were specific to reformulation plans and efforts; the food categories/food items in company portfolios undergoing salt content reductions or low salt items being supplied in the region; and the food companies' interests in various actions to be coordinated with PAHO to support dietary salt reduction.

The questionnaire was also designed as a resource for Member States to facilitate their engagement with and understanding of the intentions and efforts of national and multinational food manufacturers whose products are available on their respective national markets.

### Joint PAHO and World Economic Forum on Latin America meeting and the “2011 Statement of Rio de Janeiro”

PAHO with members of the Expert Group collaborated with the World Economic Forum (WEF) on Latin America and representatives of the food industry, governments, regulatory agencies and civil society to produce *Dietary Sodium/Salt Reduction in the Americas 2011 Statement of Rio de Janeiro*. It is the first position document created jointly by governments,

*Some key findings from the pilot:*

*- The more supportive the local government e.g. raising consumer awareness about dietary salt, the easier it is for food companies to undertake salt reduction in their products. An informed consumer helps industry, otherwise a company that unilaterally lowers its salt content risks losing market share.*

*- Important to a multinational is for governments to play a strong role in encouraging local/regional food manufacturers to engage in reducing salt in their products.*

*- Food companies plan and operate on the basis of markets that in the case of multinationals can represent regions or sub-regions (e.g. common markets), not necessarily countries. Therefore engaging them to reformulate or anticipating product distribution may require a multi-country approach i.e. taking the market perspective as defined by industry.*

*In mid 2010 the Secretariat interviewed representatives of five national initiatives where voluntary targets and timelines had been established or were in the process of being negotiated with the food industry – in Argentina, Brazil, Chile, Mexico and the US NSRI. The interviews gave insights to the facilitators and challenges to industry engagement and to government action in the context of working with industry. See section III Status of Action.*

the food industry and civil society that distills elements in the Policy Statement into a set of priorities and commitments regarding their respective roles and responsibilities in reducing the overconsumption of salt. It is a potential contribution to the PAHO/WEF submission to the high level meeting of the UN General Assembly on the prevention and control of non-communicable diseases in September 2011. It is also expected to facilitate dialogue on salt reduction at regional and national levels beyond the UN meeting.

*In the Statement of Rio de Janeiro, governments, the food industry and civil society together strongly commit to the principle of sustainable food consumption; recognize that international organizations have a strong role to play in convening stakeholders; and encourage stakeholders to act now to improve the health of the people of the Americas using a comprehensive multisectoral approach to specifically reduce dietary salt.*

### **Informing committees of CODEX Alimentarius**

Expert Group members joined the International Workshop on Salt and Health in October 2010 in Santiago Chile to contribute to the CODEX Committee on Nutrition and Foods for Special Dietary Uses (CCNFSDU) dealing with nutrient reference values for nutrients (like sodium) associated with diet-related risks for non-communicable diseases. The Workshop, promoting salt/sodium content of foods to be framed as a food safety issue, provided additional information and evidence to CCNFSDU.

PAHO on behalf of the Expert Group also made submissions to directly inform two meetings of the CODEX Alimentarius Committee on Food Labelling (CCFL) in 2010 and 2011. The Expert Group position was:

- 1) That it be mandatory for sodium/salt content to be declared on food nutrition labels whether labelling is voluntary or mandatory;
- 2) That the decision about whether sodium or salt is declared be determined by nationally recognized competent scientific authorities in each country;
- 3) That it be mandatory for sodium or salt content to be effectively communicated to consumers as determined by nationally recognized competent scientific authorities e.g. front-of-package information;
- 4) That the nutrient reference value for sodium be set at a level as low as possible in keeping with an achievable health promoting diet or be a limit, such as adequate intake, established by nationally recognized competent scientific authorities.

For the CCFL meeting, the results of the KAB survey on salt led by CI, where consumer understanding of salt and sodium on food labels was probed, were also submitted and highlighted in the meeting summary. The CCFL meeting conclusion reflected the Expert Group position – that while sodium is the correct scientific term to include on labels, national authorities can choose to have the total amount of sodium expressed as a salt equivalent on labels in cases where the public demonstrates a better understanding of the term salt than sodium.

### **Synchronizing salt iodization and salt reduction programs**

#### **White Paper on Improving Public Health in the Americas through Optimal Intake of Sodium and Iodine**

A WHO supported technical consultation from 2007, the PAHO Expert Group's Policy Statement (2009) and an international Iodine Network resolution from February 2010 agree that there is no inherent conflict between salt iodization and salt reduction initiatives.

*The framework for action in the White Paper has seven areas in which collaboration by salt iodization and salt reduction programmes is recommended: common and coordinated messaging; common advocacy platforms; concurrent surveillance; coordinated evaluation; strategic joint research; shared forums with relevant sectors of the food industry; and coordinated mapping of existing and needed resources and mobilizing them.*

Stepping off from this position, PAHO convened two meetings in early 2011: the first in January with a small group of international and regional technical experts on iodine deficiency disorders and dietary salt reduction, among them members of the Expert Group, who confirmed that collaboration between and synchronization of the two programmes to achieve a common goal – the optimal intake of sodium and iodine in the Americas – will be cost effective and of great public health benefit; and a second larger meeting in April where representatives of regional and international agencies working to optimize iodine supplementation along with PAHO and Expert Group members agreed to a *White Paper on Improving Public Health in the Americas through Optimal Intake of Sodium and Iodine*. The White Paper includes a framework for action with recommendations to national governments, civil society, various sectors of the salt and food industries and international organizations active in the region. Participants agreed to an immediate next step – the selection of pilot countries in the region where implementation of the two programs can be coordinated, guided by the framework for action, with the experiences to become case studies for dissemination.

### **Intervention with the US Institute of Food Technologists (IFT)**

The framework for *Improving Public Health in the Americas through Optimal Intake of Sodium and Iodine* was featured during the IFT 2011 annual meeting, specifically the symposium on “The role of food processors world-wide in preventing iodine deficiency disorders”. Participants recognized that: processed foods, the main source of salt in high-income economies, should be the focus for reformulation; culinary and food science collaborations are necessary to address salt reductions in both retail and food service markets; and customized reformulation approaches are needed within and across food categories.

### **Nutrition Guidance Expert Advisory Group**

Expert Group members have contributed to the WHO Nutrition Guidance Expert Advisory Group (NUGAG) as it reviews the evidence on how varying levels of population salt intake can impact the effectiveness of salt iodization programs.

### **Economic studies on the cost-effectiveness and cost-savings of population level dietary salt reduction**

The sub-group on health economic analysis identified two readily available models that can demonstrate the health and economic development benefits of population level dietary salt reduction using a minimal data set: the WHO CHOICE model (generalized cost-effectiveness) and the Coronary Heart Disease (CHD) Policy Model. PAHO and University of California in San Francisco are collaborating to prepare countries in the region to evaluate the projected and observed effectiveness and cost-effectiveness of their national dietary salt reduction programs, aiming to maximize impacts within each national context.

*Researchers in Argentina estimated the burden of acute coronary heart disease and stroke and the cost-effectiveness of preventative population-based and clinical interventions. Two interventions were particularly cost-saving: lowering salt intake in the population by reducing salt in bread and multidrug therapy [36].*

*Researchers in Canada conducted a preliminary study of the effect of various levels of dietary sodium reduction on cardiovascular disease mortality and morbidity in 18 Latin American countries combined (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela). They found that if sodium intake fell by 10% every year from a current average of 3700 mg daily, the optimal intake (1200-1500 mg daily) would be reached in 11 years. There would be about 593,000 fewer CHD and stroke events and about 54,000 fewer deaths in these countries by the end of the period [37].*

## IV Status of action in the Americas

This section begins with the country-specific summaries of activities relevant to dietary salt reduction collected through a 2011 survey of Member States administered by the secretariat. A standardized questionnaire was used to determine:

- which Member States have and do not have national initiatives to reduce the overconsumption of salt
- the nature of the initiatives currently underway, what has facilitated them, the barriers encountered and the kind of assistance needed to make further progress
- the barriers in countries with no initiatives to reduce dietary salt at the population level and what would facilitate overcoming them.

Following the country status reports is the description of food categories for which salt content reductions are underway or intended in the most active countries in the region. Then there is a compilation of the lessons learned so far and challenges to be addressed. The section concludes with a synthesis of the momentum and potential for specific advancements in the region to inform a next phase of the initiative.

### Country-specific summaries

The table below presents countries that have national scale initiatives underway. This is followed by a synthesis of the information reported by countries not yet active.

## Summaries for countries reporting strategies

Country	Strategy	Key activities	Lead and participating organizations
Argentina	<p>“Menos Sal Más Vida” (less salt, more life) launched in 2010, part of CVD prevention and the National Strategy for the Prevention and Control of NCDs. Lead organizations are the Ministry of Health, National Nutrition Institute, National Institute of Industrial Technology, and National Commission for NCD Prevention and Control (the latter comprising ministries of health, agriculture, social development, science and technology; the National Institute of Industrial Technology, food companies, NGOs, consumers and universities).</p> <p>Recommended intake 6 g salt per food code</p>	<p>Mass media campaigns; creation/dissemination of education materials; meetings with the food industry and voluntary industry target setting; investigation to determine main sources of salt; assessing cost-effectiveness of reducing overconsumption of salt.</p> <p>Menos Sal Más Vida is extending to large food industries with salt: content baseline analysis and target setting. As of October 2011, 2 and 4 year targets are set for reductions of salt content (between 5 and 18%) for various products and commitment obtained from 41 leading food industries and signed. Otherwise under development are surveillance plans and monitoring strategies: food analysis; labelling and self-reporting of sodium content data; a national nutrition survey for 2012 with a sub-sample of participants to supply a 24-hour urine sample for sodium analysis; a household expenditure survey in 2012.</p> <p>The salt content of French bread and other bakery products has already been reduced by 25%.</p>	<p>Secretary of Regulatory Institute, Secretary of Health Policy, National Institute of Nutrition</p>
Brazil	<p>National Plan for Reducing Salt Consumption in Brazil, complementing the national nutrition and CVD prevention strategies and the overall National Plan for Tackling Chronic NCDs (2011–2012). Launched in 2011, under the general joint coordination of the Ministry of Health and the national food regulatory agency (ANVISA) and involving the Brazilian Association of Food Industries (ABIA).</p> <p>Recommended intake 5 g salt (2000 mg sodium)/day/person</p>	<p>Mass media campaigns (“Menos Sal”) with e.g. a website about salt reduction; the food guide for the Brazilian population; Primary Health Books; other materials to educate and sensitize consumers, food industries, health professionals and other partners; nutrition facts labels that include salt; meetings with the food industry and voluntary target setting for specific food categories; Family Budget Survey Food Availability Modules used to estimate current salt intake levels; research to determine main sources of salt; plans to coordinate the salt reduction program with iodine supplementation program</p>	<p>National food regulatory agency (ANVISA), Brazilian Associations of Food Industries, of Pasta and Dough Industries, of Wheat and Bakeries, Brazilian Association of Supermarkets (ABRAS), National Health Council, National Food and Nutrition Security Council</p>

Canada

2010 Sodium Reduction Strategy for Canada, Recommendations of the Sodium Working Group (SWG) – calls for reduction of population level sodium intake from the current 3400 mg/day to an average of 2300 mg/day by 2016 with an eventual goal of 95% of the population consuming less than 2300 mg/day.

Draft sodium reduction targets for 2016 for a number of food categories with interim milestone targets for 2012 and 2014.

Sodium Reduction Strategy has four action areas: structured voluntary sodium reductions in food; public education campaigns; food science and health research related to sodium; planned, periodic monitoring and reporting of sodium intake levels and sodium reduction program evaluation.

Detailed actions [38]: estimation of the impact of high dietary sodium on hypertension and CVD and costs of health care; development of tools to educate the public, healthcare professionals and policy makers; clinical and scientific sessions on salt and health at regional and national meetings of national health NGOs; extensive national media campaigns led by NGOs regarding high salt content of processed, manufactured and restaurant foods and negative health effects; government research to determine main sources of dietary salt and population survey of 24-hour urinary excretion; studies on knowledge, attitudes and behaviours of the general population and hypertensives relating to dietary salt; research and development of food procurement policies for public institutions; advocacy to restrict marketing of food and beverages to children; combined funding from Canadian Institute for Health Research, NGO and private sector for the Canada Chair in Hypertension Prevention and Control.

Federal, Provincial and Territorial (FPT) Health Ministers agree to a target of sodium intake of less than 2300 mg/day. An FPT Sodium Task Group is reviewing the recommendations of the SWG including the identification of potential FPT regulatory mechanisms to achieve the 2016 target. The first full report of targets and timelines for food reformulations, a monitoring and evaluation program and a social marketing program are expected in the fall of 2011.

Health Canada, Public Health Agency of Canada, Canadian Institute for Health Research, Statistics Canada, provincial and territorial ministries of health, the food industry, health NGOs, scientific organizations.

Chile

Strategy to Reduce Salt/Sodium Consumption in Chile, complementing the Strategy Against Obesity, the Nutrition Intervention Strategy through the human life cycle, the Cardiovascular Health Program and the Choose Healthy Living Campaign that is focused on a healthy population especially children. Leadership lies with the Ministry of Health, Subsecretary of Public Health, Division of Public Policy, Department of Food and Nutrition.

Recommended intake 1200-1500 mg sodium/day, according to age for children under 18.

Mass media campaigns; nutrition facts labels that include salt; front of pack labelling; creation/dissemination of education materials; talks at academic meetings for societies of hypertension, cardiology, nephrology, and paediatrics; meetings with the industry and voluntary target setting; survey of physical measurements to estimate current level of dietary intake; research to determine main sources of intake; question included in National Quality of Life Survey on how often table salt is added to food; and development of a public consultation with the following objectives: understand the population's opinion on salt reduction; inform new feasible strategies to reduce salt intake; and increase the population's perception of the risks of high salt intake.

Medical societies of hypertension, cardiology, pediatrics, and nephrology; Food industry; Ministry of Health; associations of artisanal bread makers and supermarkets.



Costa Rica	National Plan to Reduce the Consumption of Salt/Sodium in the Population of Costa Rica within the National Policy on Food Security and Nutrition (2011-2021), led by the Ministry of Health, Institute for Research and Education in Nutrition and Health [39].	Action plan based on the WHO Population Salt Reduction Strategy and includes research to gather the evidence base to support the three platforms in Costa Rica: KAB regarding salt consumption and health in one population group and sodium analysis of two specific food groups is ongoing; previous research needs to be completed with other representative populations and food groups; and estimation of the impact of high dietary sodium on hypertension and CVD and costs of health care.	
	Recommended intake 5 g salt/day/person	In the next 12 months: mass media campaigns; workshops on how to reduce dietary salt; creation/dissemination of educational tools; meetings with the industry including food service establishments (restaurants); survey of physical measurements to estimate current level of dietary intake; identification of sources of salt; coordinating the salt reduction program with the iodine and fluoride supplementation programs; monitoring and evaluation.	
Cuba	Salt reduction is among the comprehensive actions and governmental policies of the 2010 National Program of Non-Communicable Diseases, led by Ministry of Public Health, NCD Department, National Institute of Nutrition and Food Hygiene.	Mass media campaigns; nutrition facts labels that include salt; workshops on how to reduce dietary salt; national implementation of Cuban dietary guidelines; meetings with the industry; studies on knowledge attitudes and beliefs; coordinate salt reduction program with iodine supplementation program.	Progressive actions are taken for a period of three years by the Ministry of Food Industry of Cuba to complete the global strategy to reduce salt.
	Recommended intake of no more than 2300 mg sodium / day (5 g of table salt).		
Mexico	Acuerdo Nacional para la Salud Alimentaria, Estrategia para el Sobrepeso y la Obesidad, Programa de Acción en el Contexto Escolar. Specific to salt is “Mas Agua, Menos Sal”.	Mass media campaigns; nutrition facts labels that include salt; front of pack labelling; limit foods high in sodium within preschool, primary and secondary schools; creation/dissemination of educational tools; meetings with the industry; voluntary agreement with goals and timeline for specific food categories; survey of physical measurements to estimate current level of dietary intake; other survey (national nutrition and health survey 2012); cost effective analysis	Secretary of Health/Subsecretary of prevention and promotion, Secretary of public education, Secretary of the economy
	Recommended intake of <2g/day of sodium		
Suriname	National Approach for Reducing salt use in our food/ Een Nationale Aanpak ter Vermindering van het Zoutgebruik in ons Voedsel), launched in 2010, led by the Ministry of Health.	Action to be in the next 12 months: Mass media campaign; nutrition labels that include salt; front of pack labelling; workshops on how to reduce dietary salt, creation/dissemination of educational tools; meetings with the industry; a survey of physical measurements to estimate current dietary intake; research to determine main sources of salt in the diet	

Uruguay	<p>No formal title to the initiative, part of the national NCD prevention and national nutrition programs, led by the Ministry of Health.</p> <p>Recommended intake less than 5 g salt/day/person</p>	<p>Nutrition labels that include salt; nutrition education using the food-based dietary guidelines; workshops on how to reduce dietary salt; creation/dissemination of educational tools; meetings with the industry; other survey method to determine salt intake – National Survey of Expenditures and Household Income.</p>
United States	<p>US actions are not housed under one program. At the federal level activities include national goals (Healthy People 2020), and Dietary Guidelines for Americans (see below), labelling initiatives of FDA and USDA, educational efforts including the National High Blood Pressure Education Program, scientific and monitoring efforts, procurement strategies and funding community efforts. The National Salt Reduction Initiative (NSRI) is a partnership of 70+ city and state health authorities and health organizations focusing on reducing sodium in packaged and restaurant foods. Complete details of government initiatives are given in Appendix B of the IOM Strategies to Reduce Sodium in the United States [10]</p>	<p>Bakers Industrial Centre of Uruguay plans to decrease the sodium content of baked goods on a voluntary basis</p> <p>Mass media campaigns; nutrition labels that include sodium; proposed rule by USDA for labelling of enhanced meats and sodium information available upon request in restaurants; workshops on how to reduce dietary salt; creation and dissemination of education tools; meetings with the industry (NSRI set food category sodium reduction targets for 2012 and 2014, received voluntary corporate commitments, and is monitoring progress through the creation of packaged and restaurant food data bases); surveys to determine salt intake (National Health and Nutrition Examination Survey (NHANES) and the NYC 24-hour urinary sodium study associated with NSRI); studies on knowledge attitudes and beliefs regarding salt consumption and health; assessing health benefits and cost-effectiveness of salt reduction programs; coordinating salt reduction with iodine supplementation programs; food procurement policies for public institutions – the Health and Sustainability Guidelines for Federal Concessions and Vending Operations.</p> <p>FDA, CDC, NIH, USDA, NSRI.</p> <p>Several food processors, manufacturers and retailers have committed to lower sodium in their products. See Appendix 3, US NSRI Corporate Commitments and Comments.</p>
	<p>The <i>2010 Dietary Guidelines for Americans</i> recommend limiting intake of sodium to 1500 mg per day for people aged 51 years and older, African Americans, and those who have high blood pressure, diabetes, or chronic kidney disease (the majority of US adults). All others should reduce sodium intake to less than 2300 mg per day.</p>	<p>CDC is currently conducting a 24-hr urine calibration study and examining trends in estimates of 24-hour sodium excretion using spot urines from stored samples. Proposing to conduct 24-hr urine collections on a sub-sample of adult NHANES participants starting in 2013-2014.</p>



### Summary for countries reporting no current plan or plans under development

The seven countries of Central America (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama) and the Dominican Republic through El Consejo de Ministros de Salud de Centroamérica (COMISCA) agreed to a common health plan – Plan de Salud de Centroamérica y República Dominicana 2010-2015 – that includes the commitment to set policies to regulate sodium and trans fats levels in food products [40]. At the same time Costa Rica (see table above) and Guatemala have national strategies relevant to salt intake reduction. But while Guatemala reported mass media campaigns, nutrition labels that include salt, a survey of physical measurements to estimate current level of dietary intake, application of an inventory method to estimate current salt intake and a recommended per capita salt intake of less than 5 g per day, full implementation is dependent on synchronization with the iodine fortification program.

Bolivia reported no current plan to reduce population level dietary salt while Ecuador and Paraguay have plans in development but no implementation timeline. Nevertheless, countries report activities underway that are relevant to addressing the overconsumption of salt e.g. mass media campaigns, nutrition labels that include salt, workshops on how to reduce dietary salt, creation/dissemination of educational tools and KAB studies regarding salt.

Columbia reports that an initiative is under consideration but no decision has been made on how to start, largely due to overconsumption of salt not yet being recognized because of a lack of data to make the case (e.g. on salt intake, the main sources of salt in the diet, nutritional patterns and the household food basket (the latter needed by administrative regions in the country). There is a possibility of adding questions on salt to the national study on nutrition and health. Of benefit would be technical support to design a national strategy including the research to determine baselines for and subsequent monitoring of key indicators. To date, Columbia has nutrition labels and conducts public health mass media campaigns.

### Food categories for which salt content is being reduced

As of July 2011, national public health authorities have or are in the process of negotiating national scale voluntary targets and timelines with the food industry in six countries in the Pan American region – three in the southern cone (Argentina, Brazil, Chile), and three in the north (Mexico, Canada and the US NSRI). The food categories currently being addressed in each country are shown below divided into two broad groups –packaged and unpackaged foods. At this point, common to all countries except Mexico is government and food sector collaboration to reduce the salt content of bread (artisanal bread, packaged breads or both) and packaged meat products.

<b>Argentina</b>	<b>Packaged</b> <ul style="list-style-type: none"><li>• meats and derivatives; dairy products; cookies and derivatives; soups and dressings</li></ul>	<b>Unpackaged</b> <ul style="list-style-type: none"><li>• artisanal bakery bread</li></ul>
<b>Brazil</b>	<b>Packaged</b> <ul style="list-style-type: none"><li>• instant pasta (cup noodles and ramen pasta); industrially produced bread and buns; cakes and cake mixes; snacks; processed meat products; condiments and sauces; margarines; mayonnaise; breakfast cereals; dairy products; industrially produced meals; biscuits; cookies; ready meals.</li></ul>	<b>Unpackaged</b> <ul style="list-style-type: none"><li>• artisanal bakery bread</li></ul>
<b>Canada</b>	<b>Packaged (including restaurant foods)</b> <ul style="list-style-type: none"><li>• bakery products; cereals and ready-to-eat cereals; dairy products; fats and oils; fish products; combined dishes; processed meat products; sauces; soups; snacks; sauces,</li></ul>	

	dips, gravies, condiments; canned vegetables; fresh meat products; seasoning mixes; pasta and noodles; legumes; drinks and beverages; meat alternatives; baby and infant food; rice; nut butter.	
<b>Chile</b>	<b>Packaged</b> <ul style="list-style-type: none"> <li>sausages, cheese</li> </ul>	<b>Unpackaged</b> <ul style="list-style-type: none"> <li>artisanal bakery bread and private label supermarket bread</li> </ul>
<b>Mexico</b>	Foods supplied to and available in the school environment (limiting salt plus fat and sugar content and the caloric value per portion)	
<b>US NSRI</b>	<b>Packaged</b> <ul style="list-style-type: none"> <li>bakery products; cereal and other grain products; meats; dairy products and substitutes; fats and oils; sauces, dips, gravies and condiments; snacks; soups; potatoes; mixed dishes; vegetables; legumes; canned fish; seasoning mixes; nut butters.</li> <li>restaurant foods: hamburgers; chicken; seafood; sandwiches; breakfast sandwiches; pizza; Mexican food; potatoes; soup; bakery products.</li> </ul>	

All countries have opted for structured gradual voluntary food reformulations (with targets, timelines and monitoring of progress). All except Mexico have at this point schedules of interim targets and timelines for specific food categories. Links to the detailed country-specific food categories, targets and timelines are in Appendix 3.

### Common action on bread

Bread is a staple in national diets across the Americas, consumed in consistent quantities by virtually all segments of the population and on the whole has relatively high salt content. Argentina, Brazil, Canada, Chile and the US NSRI all include bread in their salt reduction initiatives. In the three southern cone countries – Argentina, Brazil and Chile – where a limited number of food categories is currently the focus for salt content reductions, bread was either the first or among the first products to be addressed. The experiences in these countries are highlighted below as examples especially relevant to countries that have not yet addressed salt reduction of how a national initiative can begin with bread. For Argentina and Chile in particular, the countries were able to work with existing or few additional resources and in the case of Argentina, have already achieved a 25% reduction in the salt content of bread.

### Lessons learned so far

The two information gathering exercises conducted by the secretariat (in mid 2010 and mid 2011) provided insights into what has in general terms facilitated and hindered their actions and attempts to reduce the overconsumption of salt on national scales and in specific terms, what the countries have learned in the process of engaging the food industries to reduce their use of salt. Findings are summarized below.

### The regional initiative and the activities of the Expert Group have had a positive impact

Countries reported the following about the initiative and the Expert Group:

- has helped advocacy to prioritize the issue as a national public health problem concerning CVD and its relationship to high salt consumption
- the tools, resources and recommendations are informing and assisting with national plans and strategies
- assisted with analysis of available evidence and identification of effective interventions
- has made available a network of accessible experts to provide advice and collaborate on research
- provided updates on experiences across the Americas

- has provided the opportunity to explore the current epidemiological situation and promoted a review of policies and interventions and development of recommendations based on evidence
- the evidence and recommendations for the standardized methodology to measure and monitor salt intake in the population allows national results to be compared with the rest of Latin America permitting an evaluation of national interventions
- facilitated collaborations between countries and members of the LATINFOODS network, coupled with information on how issues are being handled elsewhere

### **Many experiences with industry engagement are transferrable**

- Upon entering into negotiations of targets and timelines, most important is information about what food companies have already achieved elsewhere as evidence that reformulation and new product development are feasible. Very relevant in the region are the experiences of low- and middle-income countries (LMIC) with similar resources and capacities. It is understood to be many times easier to implement changes if it can be shown that in other countries the same or similar changes are being made.
- Where regulation to limit salt content is pending, industry has appeared particularly motivated to voluntarily reformulate to reduce the market impact and extent of formulation changes necessary once regulations come into effect.
- Some countries in the region that are actively engaging with the food industry are doing so through national associations that represent various sectors of the industry e.g. artisanal bread makers, meat producers, supermarkets, food and beverage associations, etc. Other countries have found that directly approaching major and progressive food manufacturers has been effective in reaching reformulation target and timeline agreements.
- Positive relationships between public health and the food industry, established e.g. in Chile and Argentina with associations of artisanal bread makers when the use of fortified flour was mandated, facilitated the launch of national dietary salt reduction first through bread products. Bakers were supported by national public campaigns promoting lower salt intake that featured the changes in bread products. In Chile, small bakery businesses even stated a preference for regulation on an acceptable limit for salt in bread products to “level the playing field”.
- The scale of salt content reductions across food categories is dependent on national capacities to first engage food industries in target and timeline setting and then subsequently monitor progress. Canada and the NSRI have engaged food manufacturers and chain-restaurant for salt content reductions across all food categories with products that contain salt. On the other hand, the southern cone countries have begun with food categories that are the main contributors of salt to national diets and are gradually adding other categories.
- A draft national action plan can be useful in engaging stakeholders to advance dietary salt reduction. The plan can be tabled with groups convened to consider the issue, presented as a template awaiting concrete commitments to emerge from stakeholders through a participatory process of priority and target setting.
- Argentina, Canada and the United States have identified failed experiments with fully voluntary approaches and self-regulation. In Argentina for example, the Ministry of Health was initially willing to accept self-regulation and engaged national food industry associations on this basis. When results were not forthcoming, the government intervened to stimulate action with structured voluntary targets and timelines and monitoring of progress. Similarly in the United States, voluntarily reductions in the use of salt additives in food, relying principally on consumer pressure, without close government oversight and monitoring, produced no meaningful declines in salt additive use or salt intake at the population level [9].

## Challenges

- Considered a major barrier in LMIC is the lack of up-to-date objective measures of dietary patterns, the main sources of salt in the diet and levels of salt intake. The information that is available often comes from a few studies that are not representative of the national population or is derived from food consumption methodologies developed for other purposes however scaling up or instituting specific national surveys requires capacity and infrastructures that are not available. Countries have relied on secondary data sources e.g. household budget surveys and production and sales data from the food industry from which food consumption and salt intake information has been derived. While the information has been used effectively to launch dietary salt reduction initiatives, with regards to salt intake, 24-hour urine sampling is needed to confirm findings.
- There is no centralized up-to-date data source on the salt content of foods as there is no current requirement, at national levels or otherwise, for disclosure.
- In some cases LMIC lack the public sector capacities to uphold their roles in either voluntary reformulation agreements or other aspects considered important to reducing dietary salt intake. For example, if the food industry makes commitments to reach specific salt content targets, and if food-labeling requirements are regulated or even if voluntary, government agencies with the authority to evaluate industry claims on labels and analyze food products need specific and sometimes new institutional capacity to accommodate the tasks.
- In a number of countries, there is uncertainty as to how and where to start population level dietary salt reduction or while plans may be under development, there is uncertainty as to how to coordinate salt reduction with iodine fortification. Some medical sectors advocating for prevention of iodine deficiency disorders are reluctant to accept salt reduction policies.
- The overconsumption of salt is still in some cases not recognized as a public health issue or is recognized but not a priority for action. There is a low overall perception of risk by the general public and health professionals and a low level of recognition as to the role of the food industry and its corporate social responsibility towards dietary salt reduction given that the salt content of processed food products is a food safety issue. And there are competing important nutrition priorities including those related to obesity.
- Having adopted a voluntary approach for food reformulations, industry is proposing conservative goals and the negotiation processes are prolonged. Questions are arising as to whether voluntary agreements are strong enough instruments to have measurable population level impacts in a timely manner.
- Undertaking to standardize regulations e.g. for nutrition labeling across a common sub-regional market requires negotiation and consensus building.
- Communicating salt content reductions in food to consumers requires careful and coordinated messaging between the public health sector and the food industry.
- There are difficulties with the transfer of reformulation technology from large to small companies.
- Building and maintaining a multi-stakeholder and multi-sector approach requires sustained commitment on the part of the public health sector.
- In many countries, the technical capacity to evaluate the cost-benefit, cost-effectiveness and/or the cost-savings from reduced dietary salt is lacking.

- In some cases, the food industry has complained about the requirement to modify the original content of their food products, arguing that they lack the necessary infrastructure to reformulate and that there is not enough time allowed to comply with new requirements.
- Where the general population has not been sufficiently sensitized to the issue, in particular the role and responsibilities of the food industry, there has been opposition to reformulation requirements, with the public preferring personal and/or parental choice in food selection.

## V Momentum and potential in the Region

- The concentration of momentum in the southern cone countries in Latin America – Argentina, Brazil and Chile – suggests the potential for action to spread to other countries, especially to those in the MERCOSUR common market. In general, common markets in the region can facilitate the distribution of reformulated foods from countries where salt reduction policies are being implemented and may contribute to spreading market demand.
- For LMIC countries that have not yet launched dietary salt reduction initiatives and are considering where to start, the experiences with bread in the southern cone countries provide lessons and direction. They are important examples of how national associations of artisanal bread makers and of supermarkets with private labels can be mobilized. And there are health economic analyses from the region to support taking action on bread.
- The range of target and timeline commitments made by the multinational and large national food companies in the southern cone countries and to the US NSRI are evidence of what can be achieved, if not of the specific product reformulations or new low/no salt product availability, then of the technical feasibility of reducing the salt content of common food categories that contribute significant amounts of salt to the diet.
- Several of the challenges identified by countries, whether active and not yet, can be addressed through the dissemination and facilitated implementation of the tools and resources collected and developed by the Expert Group e.g. how to determine the main sources of salt in the diet or how to conduct health economic analyses.
- The national experiences with and tools to disseminate information and raise awareness among the public and communities of health professionals are potentially of great value in countries where public health initiatives are under consideration. They supply evidence to policy makers who need to apply pressure for the issue to be recognized and build up the broad public support necessary to secure the issue on political agendas in the midst of competing priorities.
- Research partnerships have and are evolving e.g. between IDD prevention and salt reduction programmes, increasing the potential to respond to calls for and access research grants.

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## Appendix 1 – Organizations that have endorsed the Policy

### Statement as of September 2011

Organization	Date of endorsement
1. Blood Pressure Canada	November 2009
2. Inter American Heart Foundation	November 2009
3. Canadian Stroke Network	November 2009
4. Canadian Diabetes Association	November 2009
5. Canadian Heart Failure Network	November 2009
6. Canadian Hypertension Society	November 2009
7. Canadian Medical Association	December 2009
8. Healthy Caribbean Coalition	February 2010
9. Caribbean Cardiac Society	February 2010
10. World Hypertension League	March 2010
11. Canadian Public Health Association	March 2010
12. Sociedad Ecuatoriana de Cardiología	April 2010
13. PROTESTE-Associação Brasileira de Defesa do Consumidor	April 2010
14. International Diabetes Federation	May 2010
15. Heart Foundation of Jamaica	May 2010
16. Instituto Brasileiro de Defesa de Consumidor	May 2010
17. Asociación Argentina de Dietistas y Nutricionistas Dietistas	May 2010
18. Sociedad Argentina de Nutrición	May 2010
19. American Heart Association	May 2010
20. International Federation of Kidney Foundations	May 2010
21. Asociación Solidaria de Insuficientes Renales	April 2010
22. Colegio de Médicos y Cirujanos de Costa Rica	April 2010
23. Sociedade Brasileira de Medicina de Família e Comunidade	April 2010
24. Sociedad Chilena de Hipertensión	May 2010
25. Ministerio de Salud de Chile	August 2010
26. Ministerio de Salud Venezuela	August 2010
27. Ministry of Health Suriname	August 2010
28. Ministerio de Salud de Uruguay	November 2010
29. Ministerio de Salud de Argentina	September 2011
30. Ministério da Saúde Brasil	confirmed pending letter
31. Ministerio de Salud de Costa Rica	January 2011
32. Asociación Latinoamericana de Diabetes	March 2011
33. Sociedad Latinoamericana de Nefrología e Hipertensión	March 2011
34. Fundación InterAmericana del Corazón Argentina	March 2011
35. Federación Nacional de Operadores de Mercados Fruti hortícolas de la Republica Argentina	March 2011
36. Federation Argentina de Cardiología	March 2011
37. Sociedad Latinoamericana de Arteriosclerosis	March 2011
38. ForoSalud, Red Peruana de Pacientes, Enlace Red Andina de Pacientes	March 2011
39. Centro de Investigación Epidemia del Tabaco, Framework Convention Alliance	March 2011
40. Asociación Lupus Chaco – Pacientes Online	March 2011
41. Dirección de Salud Mental	March 2011
42. Fundación para Prevención y Control de Enfermedades Crónicas No-Transmisibles para América Latina	March 2011
43. Sociedad Mexicana de Salud Pública / International Union Against Tuberculosis and Lung Disease	March 2011

44. Alianza Internacional al Pacientes	March 2011
45. Union Antitabaquica Argentina	March 2011
46. Del Plata Adventist University, School of Health Sciences	March 2011
47. International Federation Medical Students Association	March 2011
48. Red Familiar, Usarios y Voluntarios	March 2011
49. Sociedad Sudamericana de Cardiología	March 2011
50. Asociación Latinoamericana de Tórax	March 2011
51. American Cancer Society	March 2011
52. Fundacion Cardiologica Correntina	March 2011
53. Unión de Usuarios y Consumidores, Filial Rosario	March 2011
54. LATINFOODS (Latin American Network of Food Data Systems)	July 2011
55. Ministry of Social Protection, Vice Ministry of Public Health, Colombia	September 2011
56. Consumers International South America	March 2011

## Appendix 2 – Dissemination activities

### Articles

Campbell N, Dary O, Cappuccio FP, Neufeld L, Harding K, Zimmermann MB. A call for action to coordinate programs to improve global health by optimizing salt and iodine intake. Accepted for publication in the World Health Organization Bulletin.

Legetic B, Campbell N. Reducing salt intake in the Americas: Pan American Health Organization actions. *J Health Communication*. 2011;16:37-48.

Campbell N, Correa-Rotter R, Neal B, Cappuccio FP. New evidence relating to the health impact of reducing salt intake. *Nutrition, Metabolism & Cardiovascular Diseases*. 2011;21:617-9.

Campbell NRC, Legowski B, Legetic B. Mobilizing the Americas for dietary salt reduction. *The Lancet*. 2010;377:793-5.

Blanco-Metzler A, Legetic B, Campbell NRC. Los países de las Américas se movilizan para disminuir la hipertensión y las ECV mediante la reducción del consumo de sal en la población. *Archivos Latinoamericanos de Nutrición*. 2010;60:Artículo No.1.

Campbell NRC, Legowski B, Legetic B, Wilks R, Pinto de Almeida Vasconcellos AB. A new initiative to prevent cardiovascular disease in the Americas by reducing dietary salt. *CVD Prevention and Control*. 2009;4:185-7.

Campbell NRC, Legowski B, Legetic B, Wilks R, Pinto de Almeida Vasconcellos AB, on behalf of the PAHO/WHO Regional Expert Group on Cardiovascular Disease Prevention through Dietary Salt Reduction. PAHO/WHO Regional Expert Group Policy Statement – Preventing cardiovascular disease in the Americas by reducing dietary salt intake population-wide. *CVD Prevention and Control*. 2009;4:189-91.

### Presentations

Norm Campbell – October 2009, World Hypertension Conference in Beijing, China

Norm Campbell, Branka Legetic, Ricardo Uauy – November 2009, Congress of the Latin American Society for Nutrition (SLAN) in Santiago, Chile

Branka Legetic – June 2010, World Cardiology Congress in Beijing, China

Norm Campbell – September 2010, scientific meeting of the International Hypertension Society in Vancouver, Canada.

Ricardo Correa-Rotter – December 2010, by invitation from the Ministry of Health of Uruguay, Uruguayan Cardiology Association, Hypertension Society and Academy of Medicine, and the PAHO office in Uruguay.

Branka Legetic – September 2010, the II World Congress on Public Health Nutrition and the European Salt Action Network in Portugal

Branka Legetic, Norm Campbell, Kirsten Bibbins-Domingo, Ricardo Correa-Rotter – March 2011, symposium on salt reduction as a cost-effective method for prevention of cardiovascular disease, 14th Congress on the Investigation in Public Health, Mexico.

Norm Campbell, Ricardo Correa-Rotter, Sonia Angell and Adriana Blanco-Metzler – March 2011- Participación en representación de la Iniciativa de la OPS en la Reunión Técnica de los Participantes en

la Consulta Regional de Alto Nivel de las Américas contra las Enfermedades Crónicas NO Transmisibles (ECNT) y la Obesidad, Mexico

Adriana Blanco-Metzler, Branka Legetic, Norm Campbell – September 2011, the PAHO Initiative on Cardiovascular Disease Prevention through Dietary Salt Reduction, at the 9th International Food Data Conference in Norwich UK

Adriana Blanco-Metzler, M.A Montero-Campos, Victoria Chan, Norm Campbell – September 2011, Survey on Data of Sodium in Processed and Prepared Foods of Latin America, at the 9th International Food Data Conference in Norwich UK

Adriana Blanco-Metzler – September 2010, Iniciativa de la OPS: Prevención de las ECV en las Américas mediante la reducción de la ingesta de la sal alimentaria en toda la población at the Workshop for the validation of the “Plan Nacional de Reduccion del Consumo de Sal/Sodio en Costa Rica” in Costa Rica.

Adriana Blanco-Metzler – March, 2010, Iniciativa de la OPS: Prevención de las ECV en las Américas mediante la reducción de la ingesta de la sal alimentaria en toda la población / proyecto investigación ITCR-INCIENSA. Expert Pannel of Research in Foods and Nutrition, Curso Metodología de la Investigación I. Nutrition Scholl, University of Costa Rica

Branka Legetic, Adriana Blanco-Metzler – June 2009, Movilización sobre Reducción del consumo de sal en las Américas Workshop de la Red LATINFOODS: Iniciativa regional sobre salud cardiovascular OPS-OMS. LATINFOODS Workshop in Argentina.

## Appendix 3 – Country-specific targets and timelines

### Argentina

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### Brazil

- Orientações para redução do consumo de sódio, accessed August 2011 at <http://nutricao.saude.gov.br/sodio.php>

### Canada

- Draft sodium reduction targets and label data for prepackaged foods, accessed August 2011 at <http://www.hc-sc.gc.ca/fn-an/consult/2011-sodium/append-a-eng.php>

### Chile

- Estrategia de Reducción de SAL/SODIO en los Alimentos, accessed August 2011 at [http://www.redsalud.gov.cl/porta1/url/page/minsalcl/g\\_proteccion/g\\_alimentos/reduccion\\_sodio.html](http://www.redsalud.gov.cl/porta1/url/page/minsalcl/g_proteccion/g_alimentos/reduccion_sodio.html)

### Mexico

- Lineamientos técnicos para el expendio o distribución de alimentos o bebidas en los establecimientos de educación básica, accessed August 2011 at <http://www.insp.mx/alimentosescolares/index.php>

### US NSRI

- Targets for packaged food, accessed August 2011 at <http://www.nyc.gov/html/doh/html/cardio/cardio-salt-initiative-packagedfood.shtml> and <http://www.nyc.gov/html/doh/downloads/pdf/cardio/cardio-salt-nsri-packaged.pdf>
- Targets for restaurant food, accessed August 2011 at <http://www.nyc.gov/html/doh/html/cardio/cardio-salt-initiative-restaurantfood.shtml>
- Corporate Commitments and Comments, accessed August 2011 at <http://www.nyc.gov/html/doh/downloads/pdf/cardio/cardio-salt-nsri-commitments.pdf>