

## International Action on Sodium

Diets high in sodium (mostly from salt) are a major cause of high blood pressure in the United States and many other countries. And hypertension is a major cause of heart attacks and strokes. Because three-fourths of the sodium comes from packaged and restaurant foods, the Institute of Medicine, World Health Organization, and others have called for voluntary and mandatory reductions in the sodium content of those foods. Some countries are addressing the issue by mounting mandatory programs or overseeing voluntary programs to reduce sodium, but the United States Food and Drug Administration has not undertaken any such program. Because cutting sodium consumption by half would save about 100,000 lives per year, the FDA is missing perhaps its greatest opportunity to promote the public's health. This document provides an overview of sodium-reduction programs around the world.

### *Argentina*

In 2011, Argentina established a voluntary initiative called Less Salt, More Life. The initiative includes voluntary agreements with major food manufacturers to progressively reduce salt content in processed foods. It aims to reduce salt by 5 to 18 percent in meat, cheese, and soup, and by 25 percent in bread by 2015. To date, 20 food companies have signed the agreement, including Nestle, Kraft Foods, and Bimbo. A government-run monitoring plan tracks industry progress through laboratory testing of food products and measures societal impact through sodium-intake surveys and urine analyses.<sup>1</sup> The Director of Health Promotion for Argentina's Ministry of Health has praised the progress achieved through the program, stating that the voluntary agreements to reduce sodium in processed foods have advanced with great success.<sup>2</sup>

In November 2013, Argentina made sodium reductions mandatory with legislation that set maximum sodium limits for 18 categories of meats, bread products, and soups to be achieved by 2015. For example, the legislation limits sodium in hamburger meat to 850 mg per 100 grams, and sodium in instant soups must be no higher than 352 mg per 100 grams.<sup>3</sup> Companies have 18 months to comply with the new regulations or they face strict penalties, including fines of up to 1 million pesos and suspension of business operation for one to five years. The legislation also requires health messages on restaurant menus that warn about the risks of excessive salt consumption and sets a maximum size for containers in which salt can be sold.<sup>4</sup>

### *Australia*

In 2009, the Australian government established the Food and Health Dialogue, a voluntary program that created 20 sodium-reduction targets in nine food categories: breads, breakfast cereals, simmer sauces, soups, processed meats, savory pies, potato chips/extruded snacks, savory crackers, and cheese. Participating companies determine individually which products to reformulate and the amount of sodium to be reduced per year to reach the final target. Progress is monitored by the Australian Department of Health through regular updates by participating companies on their activities.<sup>5</sup>

To date, more than 35 companies have agreed to voluntary reductions, including the Australian subsidiaries of Kraft Foods, PepsiCo, Mars, and Nestle. A 2014 study found that from 2010 to 2013

the average sodium level in bread products was reduced by 9 percent, breakfast cereals by 25 percent, and cured meats by 8 percent.<sup>6</sup>

### *Austria*

In 2010, Austria started the Less Salt is Healthier initiative, a voluntary agreement between Austrian bakeries, the Ministry of Health, and Austrian Economic Chambers, to reduce the salt content of bread products by 15 percent by 2015. Participating companies are allowed to use a health label on their products that states “Less Salt is Healthier.”<sup>7</sup> To date, around 220 companies representing 30 percent of the Austrian market have joined the initiative. In February of 2013, the Austrian Federal Ministry of Health stated that the initiative had removed 30 tons of salt from bread and pastries.



### *Belgium*

In 2009, the Federal Public Health Service set voluntary reduction benchmarks for 13 food categories with the goal of reducing salt intake by 10 percent by 2012. Targets were set for meats, cheese, ready meals, soups, breakfast cereals, fish products, chips, catering meals, restaurant meals, sauces, condiments, potato products, and canned vegetables.<sup>8</sup> According to a September 2013 announcement, the plan has resulted in salt reductions in meat products (16 to 36 percent), bread (22 percent), dehydrated soups (17 percent), and cheese (7.5 to 20 percent).<sup>9</sup> A 1985 regulation set the maximum level of sodium content in Belgium-made bread at 1.2 grams per 100 grams of bread.

### *Brazil*

In 2011, the Ministry of Health signed a voluntary agreement with the Brazilian Association of Food Industries, the Brazilian Association of Pasta Manufacturers, the Brazilian Wheat Association, and the Brazilian Association of the Bakery and Confectionery Industries to reduce sodium content across 16 food categories. The reduction targets range from 2.5 percent to 19.5 percent depending on the food category. Full implementation is set for 2020 with interim targets in the preceding years. Progress will be monitored by the Ministry of Health through industry self-reporting and confirmed through laboratory testing by the National Health Surveillance Agency.<sup>10</sup>

### *Bulgaria*

In 2012, Bulgaria created mandatory salt limits for breads, cheese, meat and poultry products, and lutenica (a vegetable relish product). Breads, for example, must contain 1.2 grams of salt per 100 grams of bread or less.<sup>11</sup>

### *Canada*

In 2010, Canada released its Sodium Reduction Strategy, which aims to reduce average sodium consumption from 3,400 to 2,300 mg per day by 2016. Canada is pursuing a three-pronged strategy to reduce consumption: (1) voluntary reductions by industry based on governmental guidance, (2) consumer education and awareness, and (3) research.<sup>12</sup>

In response to a lack of industry action and transparency in voluntary efforts, legislation was proposed in 2013 that would have mandated many of the voluntary recommendations that were made in the Sodium Reduction Strategy.<sup>13</sup> The bill was defeated in Parliament. Canada continues to rely on voluntary industry efforts and self-reporting for sodium reductions.

### *Chile*

In 2012, Chile's Ministry of Health entered a voluntary agreement with the Chilean Federation of Industrial Bakers and the Chilean Association of Supermarkets to reduce sodium in bread by 25 percent by 2014. Participating bakeries and bread producers will receive a seal of distinction for their efforts.<sup>14</sup>

In the same year, Chile passed the Law of Food Labeling and Advertising, which, once finalized, will require food products to display a warning label indicating that the product is "excessive in sodium" if the sodium level is above the Ministry of Health's limit (yet to be determined).<sup>15</sup>

### *Croatia*

In 2006, the First Croatian Congress on Hypertension declared their intent to lead a national salt reduction initiative. Then in 2007, the Croatian Congress on Atherosclerosis launched Croatia's national salt reduction program, as well as the Croatian Action on Salt and Health (CRASH) as part of the World Action on Salt and Health (WASH).<sup>16</sup> The National Institute of Public Health involved food industry in 2012 to develop voluntary sodium reduction targets aimed at reducing the amount of added salt in bread by 30 percent.<sup>17</sup>

### *Czech Republic*

In 2008, companies in the Federation of Food and Drink Industries (FFDI) voluntarily committed to reduce sodium in dried soups and sauces between 2011 and 2014. The commitment included voluntary labeling of sodium content and other nutrition information on processed food products.<sup>18</sup>

### *Denmark*

In 2008, the Ministry of Food, Agriculture and Fisheries implemented a salt reduction initiative to reduce the population's average daily salt intake by 16 percent by 2014. Such guidelines aimed to result in the following average salt intakes per day: 5 grams for women and 6-8 grams for men. Denmark – as similar to Norway and Sweden – employs the Keyhole symbol, which voluntarily labels food products that are lower in fat, sugar and salt, while also containing more fiber and whole grains.<sup>17</sup>



### *Finland*

In 1979, Finland launched its first salt-reduction campaign as part of a comprehensive strategy to lower the incidence of cardiovascular disease. Since the late 1990s, Finland has required "high salt" warning labels to be displayed on high-sodium foods, such as bread (>1.3 percent salt), sausages (>1.8 percent salt), and cheese (>1.4 percent salt).<sup>19</sup> To avoid the high-salt warning label, companies have worked to reformulate products, and as a result the average sodium content in food products has decreased by 20 to 25 percent.<sup>20</sup>



In 2009, the threshold for qualifying as a high-salt product was further lowered to spur an additional 5 to 15 percent reduction through voluntary efforts. Products that meet low-salt guidelines can use a government-approved heart symbol in their packaging and advertising.<sup>21</sup> In 2009, Finland also set a maximum salt limit for products eligible for EU subsidies. As of 2011, salt limits are a part of the eligibility criteria for university meals to receive subsidies.<sup>22</sup>

Finland's comprehensive approach has resulted in a one-third reduction in average sodium intake between 1980 and 2002 and, together with other measures, has contributed to a 75 percent decrease in both stroke and coronary heart disease mortality.<sup>23,24</sup>

### *France*

The Second National Nutrition and Health Programme aimed to reduce average salt intake by 20 percent over the period 2006-2010.<sup>17</sup> Ten brands in the food industry have signed 15 charters to reduce the amount of added salt in their food products—most notably breads and flours.<sup>25</sup> Salt shakers have been removed from tables in catering establishments as well as schools, and the salt content of salt packets has been reduced from 1 gram to 0.5 grams.<sup>17</sup>

### *Greece*

Since 1971, the Food and Drinks Code of Greece has limited the salt content in bread (1.7 percent salt by dry weight) and tomato products like juice, concentrate, and paste.<sup>26</sup>

### *Hungary*

In 2011, Hungary passed the Public Health Product Tax Act which levies a 5-cent tax on foods with high sodium content. The tax applies to snacks with more than 1 gram of salt per 100 grams of product and to condiments with more than 5 grams of salt per 100 grams of product. The Codex Alimentarius Hungaricus, which regulates foods sold in Hungary, was also updated in 2012 to include stricter sodium limits on bread and bakery products. In the same year, more than 1,500 bakers signed a contract with the National Institute for Food and Nutrition Science to reduce the salt content of bread by 16 percent by 2017.<sup>27</sup>

### *Ireland*

In 2003, the Food Safety Authority of Ireland (FSAI) started the Sodium Reduction Programme to lower sodium consumption through voluntary industry efforts. As of 2012, the voluntary program involved 58 companies and trade associations that were working to reduce salt content in key food categories including meat products, bread, breakfast cereals, soup, and dairy products.<sup>28,29</sup> As a result of the program, sodium levels have dropped in many food categories, including an 18 percent decrease in bread between 2003 and 2011, and average daily salt intake per person from processed food has decreased by 1.1 grams per day.<sup>30</sup> The ultimate goal of the program is an average salt intake of less than 6 grams per day (2,400 mg of sodium).

### *Israel*

In 2011, the Ministry of Health launched the Healthy Israel 2020 initiative, which recommends a maximum of 1.5 grams of sodium intake per day and aims to reduce the salt consumption by 25 percent and 35 percent in 2015 and 2020, respectively.<sup>17</sup>

### *Italy*

As retail bakeries account for 90 percent of bread production while industry accounts for just 10 percent, the Minister of Health and bakers' associations signed a voluntary agreement in 2009 to bring about a 15 percent sodium reduction in bakery products by 2011.<sup>31</sup>

### *Mexico*

In 2012, the Mexican National Chamber of the Bread Industry (CANAINPA), the Mexican National Association of Supermarkets and Department Stores (ANTAD), and Grupo Bimbo (the largest Mexican-owned baking company) signed a voluntary agreement with the Health Department of Mexico to reduce sodium in their bread products by 10 percent by 2017.<sup>32</sup>

### *The Netherlands*

In 2009, The Netherlands passed legislation that set a limit on salt content in bread and flour. The legislation was revised in 2013 to further reduce salt content in those products.<sup>33</sup> The maximum salt content for bread is currently 1.8 percent salt by dry volume. For flour, the maximum amount is 1.5 percent salt by dry volume.<sup>34</sup>

In addition to legislation, the Dutch Food Industry Federation (FNLI) formed a salt taskforce that committed to an average salt reduction of 12 percent across all product categories between 2008 and 2010. A 2012 FNLI press release stated that the food industry achieved a 10 percent reduction in salt by the 2010 deadline.<sup>35</sup> Despite falling short of the original target, the task force plans to achieve additional voluntary reduction targets by 2015. As of 2012, 56 companies were involved in the initiative with varied targets.<sup>36</sup>

### *New Zealand*

In 2010, the New Zealand Ministry of Health initiated Project HeartSAFE, a voluntary, industry-led effort to reduce sodium content across various product categories. To date, the project has established “best practice guidelines” that outline maximum sodium level targets for bread, breakfast cereals, soups, processed meats, and savory pies, and provide proposed implementation timelines culminating in 2016.<sup>37</sup>

### *Norway*

In 2014, the Minister of Health and Care Services received sodium reduction targets from the food industry for a variety of their products, with a governmental bid later declaring a 15 percent sodium reduction in consumers’ diets by 2018.<sup>38</sup> Due to this joint effort between industry and government, major food manufacturers such as Orkla and Nortura have made new food products with reduced sodium content and are working to gradually reduce sodium levels in existing products.<sup>39</sup>



### *Paraguay*

In 2013, the Minister of Health enacted a resolution that mandated a 25 percent sodium reduction in bread, the main source of salt in the Paraguayan diet.<sup>40</sup>

### *Portugal*

In 2009, Portugal passed legislation that limited the salt content in bread to 1.4 grams per 100 grams of bread. However, recognized traditional bread products are exempt from the law. Noncompliance is punishable by fines of up to 5,000 Euros.<sup>41</sup>

### *South Africa*

In 2013, South Africa enacted regulations that set mandatory limits on sodium in bread, cereal, butter and spreads, savory snacks, potato chips, cured processed meats, and sausages. The sodium targets are to be achieved through a stepped implementation approach, with the intermediate target to be met by 2016 and the final target by 2019. Among the targets, sodium will be reduced from 2010 levels in bread by 28 percent, cereals by 37 percent, and cured meats by 46 percent.<sup>42</sup>

### *South Korea*

In 2012, the Ministry of Food and Drug Safety started the Korea Center for Less Salt Campaign to spur voluntary industry action on sodium reduction. The campaign seeks to reduce sodium consumption by 20 percent by 2017 from a 2010 baseline. In 2013, 13 food manufacturers voluntarily produced or reformulated 87 processed food products with lower sodium content, and some large supermarkets also provided separate sections for the sale of lower-sodium products.<sup>43</sup>

### *Spain*

The Agency for Food and Nutrition Safety signed a voluntary agreement with the Spanish Confederation of Bakery Organizations and the Spanish Association of Frozen Dough Manufacturers to reduce the amount of salt in bread from 22 grams per kilogram to 18 grams per kilogram over the period 2005-2009. By 2009, this goal was surpassed when salt levels were found to be reduced by 26.4 percent with the average bakery product containing 16.3 grams of salt per kilogram.<sup>17</sup>

### *Thailand*

In 2004, Thailand started the Thai Food, Good Heart project that allows industry to use a health label on processed food products that meet certain salt standards.<sup>44</sup> Food producers were asked to reformulate their products, resulting in products such as potato chips with sodium reduced by 50 percent, and instant noodles with sodium reduced by 20 percent (using potassium chloride).<sup>45</sup> Furthermore, the CDC worked with the Dietetic Association of Thailand to modify 10 famous Thai dishes with reformulated ingredients to reduce salt and fat in the recipes. CDC is now working with the Ministry of Public Health and partners to distribute the new recipes and to provide a series of training to cooks/chefs in schools and community hospitals, in addition to increase campaigns to educate and encourage the Thai Restaurant Association to advertise and disseminate low salt and fat menu to the public through the media, and advocate strengthening nutrition labeling.<sup>46</sup>

### *Turkey*

In 2011, the Turkish government began its Comprehensive Salt Reduction Program. Through the program, Turkey has set limits on sodium in bread and some processed foods like tomato paste, and banned the sale of chips in school cafeterias.<sup>47</sup>

### *United Kingdom*

After years of discussion beginning in 2003, the United Kingdom Food Standards Agency (FSA) published its first set of voluntary salt-reduction targets in 2006. Those targets applied to 85 food categories that provide the majority of sodium in the British diet, including processed meats, bread, cheese, convenience foods, and snacks.<sup>48</sup> In 2008, the FSA set more ambitious targets to be achieved by 2012. While results have varied by product, sodium levels in many target foods have been reduced significantly, some by 40 to 50 percent or more. Between 2001 and 2011, average British per capita daily sodium consumption dropped by 560 mg (15 percent).<sup>49</sup> A contributing factor to salt reduction was a voluntary traffic-light food-labeling system, present on more than 75 percent of foods sold in the UK. The FSA has set further reduction targets for 2017.<sup>50</sup>



### *Uruguay*

In 2015, Uruguay passed a law to ban saltshakers, mayonnaise, and ketchup at restaurants in Montevideo, and to ban saltshakers from schools nationwide. The law also stipulates that there needs to be a warning on the menu about salt consumption, and restaurants need to have low-sodium alternatives available to customers. Nationally, bakers have also agreed to lower the sodium content in their products by 10 percent.<sup>51</sup>

Other countries with government-led voluntary sodium reduction initiatives:

- Bahrain
- Barbados
- China
- Colombia
- Cook Islands
- Costa Rica
- Cuba
- Cyprus
- Dominican Republic
- Ecuador
- Estonia
- Fiji
- Guatemala
- India
- Indonesia
- Japan
- Kuwait
- Luxembourg
- Malaysia
- Malta
- Mongolia
- Montenegro
- Philippines
- Poland
- Qatar
- Singapore
- Slovakia
- Slovenia
- Sri Lanka
- Suriname
- Sweden
- Switzerland

For more information about government-led voluntary sodium reduction initiatives, please see:

Trieu K, Neal B, Hawkes C, Dunford C, Dunford E, et al. Salt Reduction Initiatives around the World — A Systematic Review of Progress towards the Global Target. *PLoS One*. 2015;10(7):e0130247.

Hussain I, Schoenhagen P, Webster J. (2015). Salt intake reduction efforts: advances and challenges. *Cardiovasc Diagn Ther*. 5(3):169--171.

## References

- 1 Ministerio de Salud, Argentina. (2012). Argentine Initiative to Reduce Sodium Consumption "Less Salt, More Life". Pan American Health Organization. [http://www2.paho.org/panamericanforum/wp-content/uploads/2012/08/less-salt-more-life\\_PAHO-consortium\\_ARG.pdf](http://www2.paho.org/panamericanforum/wp-content/uploads/2012/08/less-salt-more-life_PAHO-consortium_ARG.pdf).
- 2 Promoción de la Salud y Control de Enfermedades No Transmisibles. (2013). Se sancionó la ley que regula el consumo de sodio. Ministerio de Salud, Argentina.
- 3 El Senado y Cámara de Diputados de la Nación Argentina. (2013). Ley 26.905. Infojus: Sistema Argentino de Información Jurídica. <http://derechoalaalimentacion.org/wp-content/uploads/2013/12/ley26905.pdf>.
- 4 Primera Edición. (2013). La ley 26.905 regula el consumo de sodio en la población. Primera Edición. <http://www.primeraedicionweb.com.ar/nota/digital/77383/la-ley-26-905-regula-el-consumo-de-sodio-en-la-poblacion.html>.
- 5 Australian Government Department of Health. (2013). Summary of Food Categories Engaged under the Food and Health Dialogue to Date. [http://www.foodhealthdialogue.gov.au/internet/foodandhealth/publishing.nsf/Content/summary\\_food\\_categories](http://www.foodhealthdialogue.gov.au/internet/foodandhealth/publishing.nsf/Content/summary_food_categories).
- 6 Trevena, H., Neal, B., Dunford, E., & Wu, J. H. (2014). An Evaluation of the Effects of the Australian Food and Health Dialogue Targets on the Sodium Content of Bread, Breakfast Cereals and Processed Meats. *Nutrients*, 6(9), 3802-3817.
- 7 Bundesministerium Für Gesundheit. (2014). Austrian Salt Initiative. [http://www.bmgf.gv.at/cms/site2/attachments/7/1/0/CH1396/CMS1385031886552/who\\_conference\\_factsheet\\_oesi\\_final.pdf](http://www.bmgf.gv.at/cms/site2/attachments/7/1/0/CH1396/CMS1385031886552/who_conference_factsheet_oesi_final.pdf)
- 8 European Commission. (2009). National Salt Initiatives: Implementing the EU Framework for Salt Reduction Initiatives. <http://bit.ly/1FTKE4A>.
- 9 Health, Food Chain Safety and Environment. (2013). Moins de sel dans l'alimentation des Belges. [http://www.health.belgium.be/eportal/1908825\\_FR?backNode=9735#.U5s6jldWIM](http://www.health.belgium.be/eportal/1908825_FR?backNode=9735#.U5s6jldWIM).
- 10 Nilsson, E. A. F., Jaime, P. C., & Resende, D. O. (2012). Iniciativas desenvolvidas no Brasil para a redução do teor de sódio em alimentos processados. *Rev Panam Salud Publica*, 34(4), 287-92.
- 11 European Commission. (2012). Survey on Members States' Implementation of the Salt Reduction Framework. [http://ec.europa.eu/health/nutrition\\_physical\\_activity/docs/salt\\_report1\\_en.pdf](http://ec.europa.eu/health/nutrition_physical_activity/docs/salt_report1_en.pdf).
- 12 Health Canada. (2012). Guidance for the Food Industry on Reducing Sodium in Processed Foods – Data Table. [http://www.hc-sc.gc.ca/fn-an/legislation/guide-ld/2012-sodium-reduction-indust\\_data\\_table-eng.php](http://www.hc-sc.gc.ca/fn-an/legislation/guide-ld/2012-sodium-reduction-indust_data_table-eng.php).
- 13 House of Commons of Canada. (2012). Bill C-460. Parliament of Canada. <http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&DocId=5821105&File=33#3>.
- 14 Ministerio de Salud. (2014). Estrategia de Reducción de SAL/SODIO en los Alimentos. Gobierno de Chile, Nutrición. [http://web.minsal.cl/alimentos\\_nutricion](http://web.minsal.cl/alimentos_nutricion).
- 15 Corvalán, C., Reyes, M., Garmendia, M. L., & Uauy, R. (2013). Structural responses to the obesity and non-communicable diseases epidemic: the Chilean Law of Food Labeling and Advertising. *Obesity Reviews*, 14(S2), 79-87.
- 16 Jelakovic, B., Kaic-Rak, A., Milicic, D., Premuzic, V., Skupnjak, B., Reiner, Z. (2009). Less salt – More Health. Croatian Action on Salt and Health (CRASH). *Lijec Vjesn.* 131(3-4): 87-92.
- 17 World Health Organization. (2013). Mapping Salt Reduction Initiatives in the WHO European Region. [http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0009/186462/Mapping-salt-reduction-initiatives-in-the-WHO-European-Region.pdf](http://www.euro.who.int/__data/assets/pdf_file/0009/186462/Mapping-salt-reduction-initiatives-in-the-WHO-European-Region.pdf).
- 18 European Commission, 2012.
- 19 Karppanen H, Mervaala E. Sodium intake and hypertension. *Progress in Cardiovascular Diseases*. 2006;49(2):59-75.
- 20 European Commission, 2009.
- 21 Finnish Heart Association. (2014). The Heart Symbol. <http://www.sydanliitto.fi/the-heart-symbol#.U34gBSg3Y4w>.
- 22 European Commission, 2012.
- 23 Reinivuo, H., Valsta, L. M., Laatikainen, T., Tuomilehto, J., & Pietinen, P. (2006). Sodium in the Finnish diet: II trends in dietary sodium intake and comparison between intake and 24-h excretion of sodium. *European journal of clinical nutrition*, 60(10), 1160-1167.
- 24 Karppanen, H., & Mervaala, E. (2006). Sodium intake and hypertension. *Progress in cardiovascular diseases*, 49(2), 59-75.
- 25 European Union. (2012). Implementation of the EU Salt Reduction Framework: Results of Member States Survey. [http://ec.europa.eu/health/nutrition\\_physical\\_activity/docs/salt\\_report\\_en.pdf](http://ec.europa.eu/health/nutrition_physical_activity/docs/salt_report_en.pdf).
- 26 European Commission, 2012.
- 27 World Health Organization, Europe. (2013). Mapping salt reduction initiatives in the WHO European Region. [http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0009/186462/Mapping-salt-reduction-initiatives-in-the-WHO-European-Region-final.pdf](http://www.euro.who.int/__data/assets/pdf_file/0009/186462/Mapping-salt-reduction-initiatives-in-the-WHO-European-Region-final.pdf).
- 28 Ibid.
- 29 Friel, M. (2010). FSAI Salt Reduction Programme. Ireland Food Safety Authority. [http://www.efet.gr/images/efet\\_res/docs/nutrition/Hmerida/M.%20Friel%20-%20Salt%20Reduction%20Ireland.pdf](http://www.efet.gr/images/efet_res/docs/nutrition/Hmerida/M.%20Friel%20-%20Salt%20Reduction%20Ireland.pdf).
- 30 McDonald, K. (2013). The FSAI Salt Reduction Programme: Ten Years of Progress? Food Safety Authority of Ireland. [http://www.fsai.ie/uploadedFiles/Science\\_and\\_Health/Salt\\_and\\_Health/SRP\\_2013\\_Karl\\_McDonald\\_FSAI.pdf](http://www.fsai.ie/uploadedFiles/Science_and_Health/Salt_and_Health/SRP_2013_Karl_McDonald_FSAI.pdf).
- 31 Galeone, D. (2009). Italy: Salt Reduction Initiatives for Bread. Presented at Salt in Bread: Technical, Taste and Other Parameters for Healthy Eating Seminar in Brussels. [http://ec.europa.eu/health/nutrition\\_physical\\_activity/docs/ev20091021\\_galeone\\_en.pdf](http://ec.europa.eu/health/nutrition_physical_activity/docs/ev20091021_galeone_en.pdf).
- 32 Group Bimbo. (2012). Group Bimbo and the Health Department of Mexico Comply with the Mandate of the WHO to Reduce Salt Content in Bread. <http://www.grupobimbo.com/en/press-room/press-releases/1101/1108/grupo-bimbo-and-the-health-department-of-mexico-comply-with-the-mandate-of-the-who-to-reduce-salt-content-in-bread.html>.
- 33 European Commission, 2012.
- 34 Staatsblad van het Koninkrijk der Nederlanden. (2012). Decree of November 15, 2012, amending the Commodities Act Flour and bread on the maximum salt content of bread. <https://zoek.officielebekendmakingen.nl/stb-2012-598.html>.
- 35 Federatie Nederlandse Levensmiddelen Industrie. (2010). Rapportage Actieplan Zout in Levensmiddelen Fase 1. FNLI.
- 36 Federatie Nederlandse Levensmiddelen Industrie. (2012). Levensmiddelenindustrie zet volgende stap in zoutverlaging. FNLI. <http://www.fnli.nl/nieuwsitem/153/levensmiddelenindustrie-zet-volgende-stap-in-zoutverlaging.html>.
- 37 New Zealand Heart Foundation. (2014). Sodium Targets. <http://www.heartfoundation.org.nz/programmes-resources/food-industry-and-hospitality/heartsafe/industry-commitment-to-sodium-reduction>.
- 38 The Norwegian Government. (2014). Reducing the Salt in Foods. <https://www.regjeringen.no/en/aktuelt/reducing-the-salt-in-food/id2009033/>
- 39 Best, Dean. (2015). Norway Announces Plan to Lower Salt Intake. *Just-food*. [http://www.just-food.com/news/norway-announces-plan-to-lower-salt-intake\\_id131278.aspx](http://www.just-food.com/news/norway-announces-plan-to-lower-salt-intake_id131278.aspx)
- 40 Consensus Action on Salt & Health. (2013). Annual Report. CASH. [http://apps.charitycommission.gov.uk/Accounts/Ends18/0001098818\\_AC\\_20130430\\_E\\_C.pdf](http://apps.charitycommission.gov.uk/Accounts/Ends18/0001098818_AC_20130430_E_C.pdf).

- <sup>41</sup> Diário da República. (2009). Lei 75/2009. 1, 155. <http://dre.pt/pdf1s/2009/08/15500/0522505226.pdf>.
- <sup>42</sup> World Health Organization. (2013). Successful Sodium Regulation in South Africa. [http://www.afro.who.int/en/downloads/doc\\_download/9240-successful-sodium-regulation-in-south-africa.html](http://www.afro.who.int/en/downloads/doc_download/9240-successful-sodium-regulation-in-south-africa.html).
- <sup>43</sup> Ji-sook, B. (2012). Korea launches drive to reduce salt intake. *The Korea Herald*. <http://www.koreaherald.com/view.php?ud=20120321001080>.
- <sup>44</sup> Supornsilaphachai, C. (2013). Evolution of salt reduction initiatives in Thailand: lessons for other countries in the South-East Asia Region. *WHO Regional Health Forum*, 17(1), 61-71. [http://www.searo.who.int/publications/journals/regional\\_health\\_forum/rhfv17n1p61.pdf](http://www.searo.who.int/publications/journals/regional_health_forum/rhfv17n1p61.pdf).
- <sup>45</sup> World Health Organization. (2014). Global Status Report on Noncommunicable Diseases. *WHO*. [http://apps.who.int/iris/bitstream/10665/148114/1/9789241564854\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/148114/1/9789241564854_eng.pdf).
- <sup>46</sup> CDC. (2013). CDC in Thailand. <http://www.cdc.gov/globalhealth/countries/thailand/>.
- <sup>47</sup> World Health Organization, Europe. (2013). Progress in reducing salt consumption in Turkey. *WHO*. <http://www.euro.who.int/en/health-topics/disease-prevention/nutrition/news/news/2013/04/progress-in-reducing-salt-consumption-in-turkey>.
- <sup>48</sup> UK Department of Health. (2012). Salt Targets for Responsibility Deal. <https://responsibilitydeal.dh.gov.uk/wp-content/uploads/2012/01/Salt-Targets-for-Responsibility-Deal.pdf>.
- <sup>49</sup> Sadler, K., Nicholson, S., Steer, T., Gill, V., Bates, B., Tipping, S., et al. (2012). National diet and nutrition survey: assessment of dietary sodium in adults (aged 19 to 64 years) in England, 2011. Department of Health.
- <sup>50</sup> Food Standards Agency. (2014). 2017 UK salt reduction targets. FSA in Scotland. <http://www.food.gov.uk/scotland/scotnut/salt/saltreduction#.U5tgJPldWIM>.
- <sup>51</sup> NPR. (2015). Assault On Salt: Uruguay Bans Shakers In Restaurants And Schools. <http://www.npr.org/sections/thesalt/2015/05/17/407056903/assault-on-salt-uruguay-bans-shakers-in-restaurants-and-schools>.
- <sup>52</sup> World Health Organization, Europe. (2013). Mapping salt reduction initiatives in the WHO European Region.
- <sup>53</sup> Batcagan-Abueg, A. P., Lee, J. J., Chan, P., Rebello, S. A., & Amarra, M. S. V. (2013). Salt intakes and salt reduction initiatives in Southeast Asia: a review. *Asia Pacific journal of clinical nutrition*, 22(4), 490.
- <sup>54</sup> The George Institute for Global Health. (2014). Developing a national salt reduction program for India. <http://www.georgeinstitute.org/projects/developing-a-national-salt-reduction-program-for-india>.
- <sup>55</sup> Campbell, N. R., Johnson, J. A., & Campbell, T. S. (2012). Sodium Consumption: An Individual's Choice?. *International journal of hypertension*, 2012.
- <sup>56</sup> Barquera, S., & Appel, L. J. (2012). Reduction of sodium intake in the Americas: a public health imperative. *Revista Panamericana de Salud Pública*, 32(4), 251-252.
- <sup>57</sup> WHO, 2014.
- <sup>58</sup> World health Organization, Western Pacific Region. (2014). Salt matters for Pacific Island Countries. Tool 7; page 10. <http://www.wpro.who.int/southpacific/entity/publications/salt-matters-publication.pdf>
- <sup>59</sup> Choudhury, SR. (2013) Current situation and capacity in the South-East Asia Region to report on the global voluntary targets: Salt/sodium intake. Technical Working Group Meeting on Regional Action Plan and Targets for Prevention and Control of Noncommunicable Disease. Bangkok, Thailand. Slide 14. [http://www.searo.who.int/entity/noncommunicable\\_diseases/events/ncd\\_twg\\_bangkok\\_salt\\_sodium\\_intake.pdf?ua=1](http://www.searo.who.int/entity/noncommunicable_diseases/events/ncd_twg_bangkok_salt_sodium_intake.pdf?ua=1)
- <sup>60</sup> World Action on Salt & Health. (2009). Poland: Salt Action Summary. <http://www.worldactiononsalt.com/worldaction/europe/54016.html#sthash.sQ0x0bL4.dpuf>
- <sup>61</sup> Hussain I, Schoenhagen P, Webster J. (2015). Salt intake reduction efforts: advances and challenges. *Cardiovasc Diagn Ther*. 5(3):169--171.