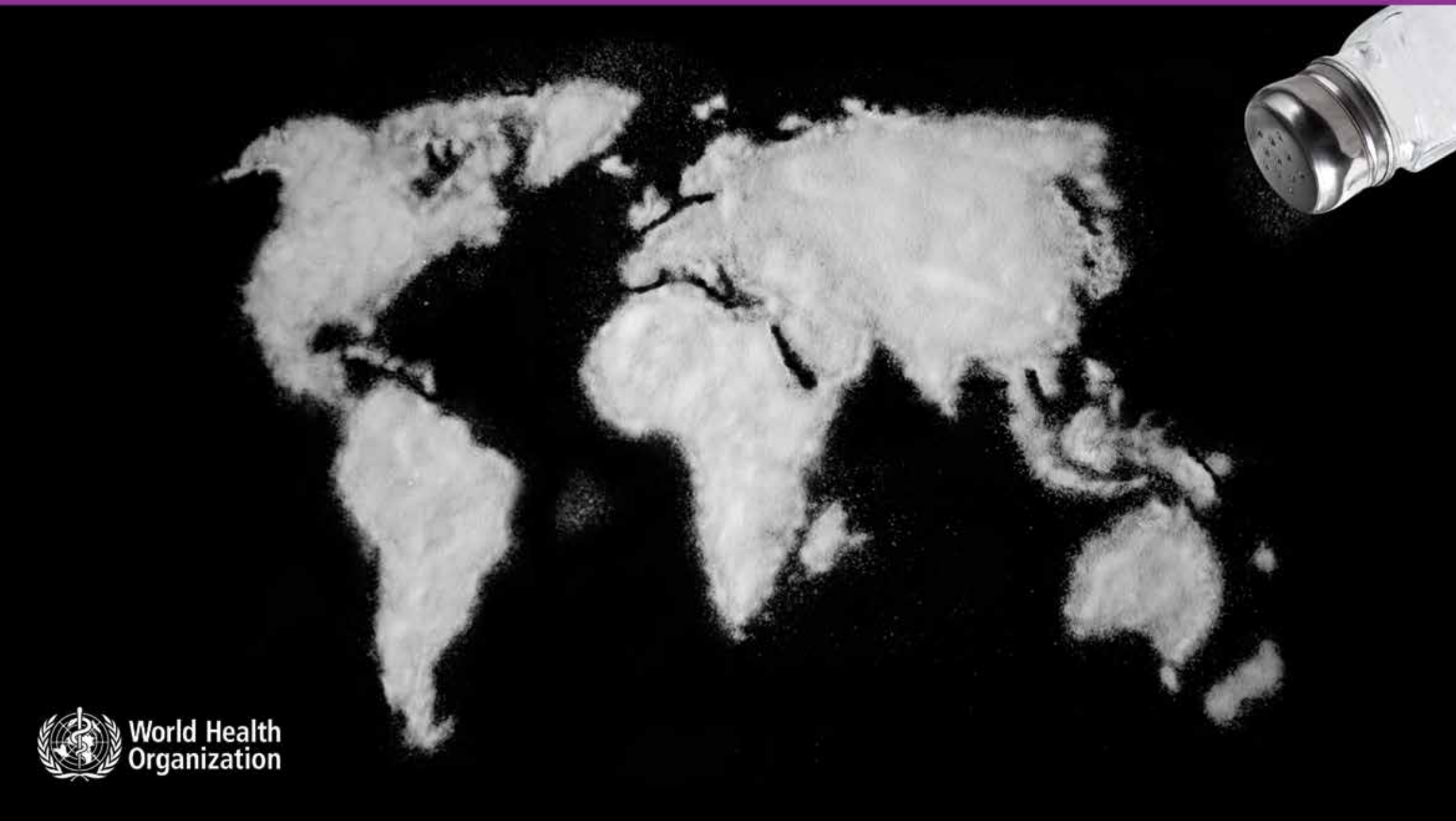
Salt reduction and iodine fortification strategies in public health

Report of a joint technical meeting convened by World Health Organization and The George Institute for Global Health in collaboration with the International Council for the Control of Iodine Deficiency Disorders Global Network, Australia, March 2013



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Executive summary

The World Health Organization (WHO) promotes both the implementation of programmes to reduce population salt intake as one of the cost-effective strategies to reduce the burden of noncommunicable diseases and universal salt iodization to prevent and control iodine deficiency disorders. The joint technical meeting was convened by WHO and The George Institute for Global Health in collaboration with the International Council for the Control of Iodine Deficiency Disorders (ICCIDD) Global Network. It brought together technical experts in Iodine Deficiency Disorders and dietary salt reduction and WHO representatives from all regions of the world to consider the potential for maximizing the impact of salt reduction and iodine deficiency elimination programmes through improved coordination.

Key elements of salt reduction and iodine deficiency elimination programmes were discussed and updates on progress with implementation provided. This was accompanied by presentations of new research findings and roundtable discussions with case studies from different countries. Finally, working group discussions were held to consider the priorities for supporting national and international efforts in optimizing salt and iodine intake at the population level; effective stakeholder collaboration and opportunities for a research agenda.

The meeting demonstrated the potential to synergize both programmes to ensure optimal implementation of each programme by promoting their commonalities and complementarities. Commonalities between the two programmes are that both are geared towards improving public health throughout the world through a population-wide approach. Both programmes adopt a multistakeholder approach and encompass health promotion, prevention, treatment and rehabilitation; all of which involve working closely with the food industry.

A key difference is that the iodine fortification programme is based on salt as the main food vehicle to increase iodine intake, whereas for the salt reduction programme excessive salt consumption is a main risk factor. The policies can be coherent provided that there is *(a)* full implementation of universal salt iodization, *(b)* effective implementation of salt reduction policies including regulation of salt levels in processed foods and *(c)* increasing iodine levels in salt as salt intakes are decreased.

A joint plan for collaborative work is to be developed to outline the common objectives. Initially, this could be two distinct programmes but with areas of overlap clearly identified and strategies in place to ensure effective complementarity. The main areas of complementarity for the two programmes at global, regional and national levels are:

- Policy development
- Research, monitoring and evaluation
- Implementation
- Advocacy and communications

WHO and the United Nations Children's Fund (UNICEF) can lead the development and coordination of a joint programme, working with ICCDD Global Network and the WHO Collaborating Centre on Population Salt Reduction at The George Institute for Global Health in Sydney, Australia. A wide range of other organizations can be involved in the implementation. Governments will be encouraged to develop strategies to engage all departments in support of universal salt iodization and effective policies and regulations to reduce salt consumption. Civil society action can be leveraged to support the joint implementation. Industry will be consulted in relation to implementation but will have no role in policy-making. Developing a consistent strategy and message as well as identifying and managing perceived or real conflicts of interest will be fundamental to the successful delivery of the strategies.

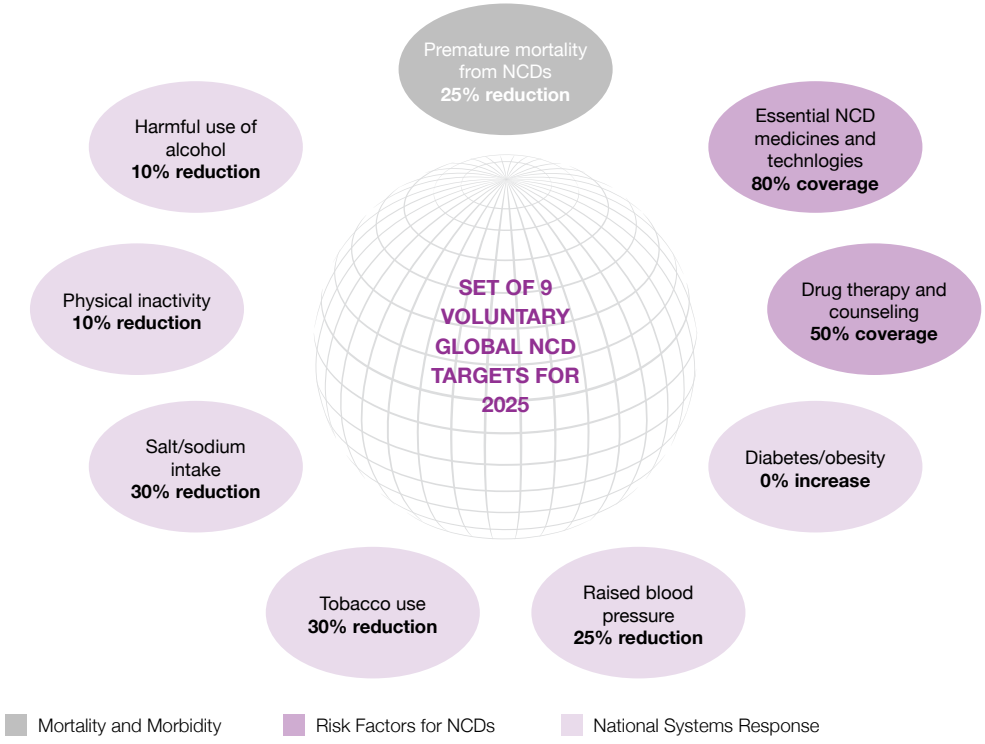
[1] Definitions are set out in Annex 3 at the end of this document.

Introduction

Noncommunicable diseases (NCDs), represent a leading threat to human health and economic development. The leading risk factor for the global disease burden is raised blood pressure, estimated to cause 9·4 million deaths every year—more than half of the estimated 17 million annual deaths caused by total cardiovascular disease *(1)*. The World Health Organization's (WHO) Global status report on *noncommunicable diseases, 2010* recommended reduced salt intake and salt content of food as cost-effective actions that should be undertaken immediately, with expected accelerated results in terms of lives saved, cases of disease prevented and costs avoided *(2)*. This position has since been endorsed by the 2011 Political Declaration of the United Nations High Level Meeting on NCDs *(3)* which led to the development and adoption of the *Global Monitoring Framework and Voluntary Global Targets for the Prevention and Control of NCDs*[i] in which Member States have agreed a global target of a 30% relative reduction in mean population intake of salt/sodium by 2025 (Figure 1) *(4)*.

At the same time as salt reduction is recommended globally, there is concern that iodine deficiency disorders (IDD) may re-emerge despite the fact that many countries have adopted universal salt iodization[ii] (USI) in response to the resolution passed in the 43rd World Health Assembly[iii] that addressed the elimination of iodine deficiency disorders. Iodine deficiency disorders are a global health problem that can result in impaired cognitive development and function, hypothyroidism, congenital anomalies, cretinism or endemic goitre *(5)*. The WHO, United Nations Children's Fund (UNICEF) and the International Council for the Control of Iodine Deficiency Disorders (ICCIDD) Global Network recommend an intake of 150 µg iodine/day for adults and 220–290 µg/day for pregnant and lactating women and salt has continued to be the most common food vehicle for iodine fortification *(6)*. WHO endorses universal salt iodization whereby all

***FIGURE 1:** WHO NCD Global Voluntary Targets*



[i] Resolution WHA66.10. Endorsement of the Global Monitoring Framework and set of Voluntary Global Targets for the Prevention and Control of NCDs. World Health Assembly, Geneva, 20–28 May, 2013, http://apps.who.int/gb/ebwha/pdf_files/WHA66/A66_R10-en.pdf [accessed November 2013].

[ii] Universal salt iodization (USI) refers to the mandatory fortification of all food grade salt (sodium chloride) for human and animal consumption. This includes the iodization of all salt for household use as well as salt used as an ingredient of processed foods and condiments.

[iii] Resolution WHA43.2. Prevention and control of iodine deficiency disorders. World Health Assembly, Geneva, 7–17 May, 1990, http://www.who.int/nutrition/topics/WHA43.2_idd_en.pdf [accessed November 2013].

salt for human and animal consumption is iodized (including salt for processing) *(7)* and reaffirms that the public health goals of reducing salt and increasing iodine intake through salt iodization are compatible given that the concentration of iodine in salt can be adjusted as salt intake is reduced *(8, 9)*. The coherence between the policy of reducing salt consumption to prevent NCDs and the policy of universal salt iodization to eliminate iodine deficiency disorders was further recognized in a WHO expert consultation in 2007. The meeting concluded that the policies for salt iodization and reduction of salt to less than 5 g/day are compatible, cost-effective and of great public health benefit (Box 1) *(8)*. As part of the implementation of the WHO Global Strategy on Diet, Physical Activity and Health *(10)* and the 2008–2013 Action Plan for the Global Strategy for the Prevention and Control of NCDs *(11)*, WHO planned to convene three multistakeholder information exchange forums and technical meetings focusing on various aspects of population sodium reduction strategies. These meetings took place in the United Kingdom, July 2010 and in Canada in October 2010. The strategies discussed included:

- Creating environments to enable the reduction of sodium intake; and
- Evaluating and monitoring population sodium consumption and sources of sodium in the diet.

To complete the series of multistakeholder information exchange forums and technical meetings on aspects of population salt/sodium reduction, the WHO Department of Prevention of Noncommunicable Diseases and the Department of Nutrition for Health and Development, in collaboration with The George Institute of Global Health and the International Council for the Control of Iodine Deficiency Disorders (ICCIDD) Global Network, convened a technical consultation on salt reduction and iodine fortification strategies in public health, which was held in Sydney, Australia, 25–27 March 2013.

The aim of the meeting was to review and discuss ongoing initiatives, policies and programmes aimed at reducing salt/sodium intake at the population level and using salt as a vehicle for iodine fortification in public health, including recognizing successes, challenges and key factors for sustainability of interventions. The specific objectives were to:

1. Review existing protocols and surveys used for monitoring of sodium and/or iodine consumption and assess potential adaptation in monitoring and evaluation of sodium and iodine intake;
2. Discuss the role of food manufacturers in the synergistic implementation of both the population-based salt/sodium reduction strategies and the salt iodization programmes;
3. Review ongoing research on safety, efficacy and effectiveness of use of potassium enriched (sodium reduced) iodized salt in public health;
4. Identify innovative strategies and potential barriers to ensure that the campaigns for salt/sodium reduction and salt as a vehicle for fortification can be run in parallel and with equal success.

The participants of the technical consultation included representatives of government agencies, international health organizations and academics. Annex 1 shows the list of the meeting participants and Annex 2 the meeting agenda.

BOX 1: Salt as a vehicle for fortification

Recommendations of the WHO Expert Consultation, 21–22 March 2007, Luxembourg:

- Policies for salt iodization and reduction of salt intake to less than 5 g/day are both necessary and compatible
- Universal salt iodization is the recommended strategy to control iodine deficiency, and successful programmes should continue and be sustained
- Reliance of salt as a vehicle for dietary intake of iodine should not be used to justify promotion of salt intake to the public and additional vehicles should continue to be explored
- Assumption of level of iodine at 20–40 mg/kg is based on an average salt intake on 10 g/day at population level which may have changed
- The use of salt as the vehicle for new fortification initiatives other than iodine and fluoride should be discouraged
- Multinational food industries should harmonize the salt content of their products according to lowest threshold possible to avoid variations in products in different countries
- Changes in population salt intakes needs to be assessed over time via monitoring of urinary sodium excretion and levels of iodine fortification adjusted accordingly

Progress in relation to implementation of salt reduction and iodine deficiency elimination policies

Salt

Salt reduction has been identified as one of the most cost-effective interventions for reducing the burden of NCDs with the potential for saving millions of lives each year *(12)*. In 2003, a joint expert consultation by WHO and the Food and Agriculture Organization of the United Nations (FAO) recommended a salt intake at the population level of less than 5 g/day, with a provision for ensuring the adequate iodization of salt *(13)*. Recommendations for Member States and other stakeholders on interventions to reduce population salt intake with the long-term goal of preventing NCDs were subsequently developed in 2006 *(14)*. Action on salt reduction was further accelerated in 2010 as part of the implementation of the WHO Global Strategy on Diet, Physical Activity and Health *(10)* and the 2008–2013 Action Plan for the Global Strategy for the Prevention and Control of NCDs *(11)*. The implementation of this strategy encompassed technical meetings on creating environments which enable the reduction of sodium intake *(15)* as well as evaluating and monitoring population sodium consumption and sources of sodium in the diet (16). The significance of population salt reduction was further endorsed by the 2011 Political Declaration of the United Nations High Level Meeting on NCDs *(3)* and led to the development and adoption of the Global monitoring framework and voluntary global targets for the prevention and control of NCDs in which a 30% relative reduction of population salt intake is a core target in the aim of achieving a 25% reduction

BOX 2: *World Health Organization guidelines: Sodium intake for adults and children (17)*

This guideline provides updated global, evidence-informed recommendations on the consumption of sodium to reduce NCDs in most adults and children. It should be used in conjunction with potassium and other nutrient guidelines to develop and guide national policies and public health nutrition programmes.

BOX 3: *World Health Organization guidelines: Potassium intake for adults and children (19)*

This guideline provides the first global, evidence-informed recommendations on the consumption of potassium to reduce NCDs in most adults and children. It should be used in conjunction