

An International Comparative Policy Analysis to Accelerate Actions against Non-Communicable Diseases: The Experience of Iran

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Key messages:

- Controlling the commercial risk factors of non-communicable diseases (NCDs) including sugar, salt and fat is one of the most powerful tools to reduce the burden of NCDs by 30% until 2030.
- Comparative policy analysis on “Best Buys” recommended interventions is a useful platform to scale up the implementation of policies, aiming to reduce the risk factors of NCDs.

Introduction:

The Non-Communicable Diseases (NCDs) represent the largest and fastest growing threat to human health, particularly in the context of low- and middle-income countries (LMICs) (1). 71% of annual deaths are attributed to NCDs, which kill 15 million people aged 30-69 years, accounted for 85% of premature deaths occurring in the LMICs, most of which are preventable. (2) The Global Burden of Disease (GBD) study identified NCDs as the most significant contributor to both burden of disease (as measured through DALYs,) and death in the Middle East and North Africa (MENA) region (3).

Traditionally, four main NCDs: cardiovascular diseases, cancer, chronic respiratory diseases, and diabetes are driven largely by four main modifiable risk factors: tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol. The World Health Organization (WHO) introduced the association as 4X4 model. NCDs are also a major cause of poverty and a barrier to economic and social development. (2) The UN Political Declaration of 2018 on NCDs added air pollution as the 5th risk factor and mental and

neurological conditions as the 5th category of disease to the list, rebranding a more comprehensive ‘5x5’ model for NCDs management and control (4).



Figure 1: ‘5x5’ model for NCDs management and control (4)

Globally, dietary risk factors and physical inactivity account for around 10% of the burden of disease (5). The World Health Assembly (WHA) has approved a set of nine voluntary targets for reducing behavioral and physiological risk factors for NCDs, including a target of reducing mean population salt intake by 30% by 2030, A 25% relative reduction in the overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases and halting the rise in diabetes and obesity (6).

In 2017, NCDs killed 291 thousand people in Iran. The ascending trends of disability-adjusted life years (DALYs) and death during the past decades shows the serious threat of NCDs, including premature death and many disabilities (7, 8). For instance, 6.5 million years of life lost (YLLs) and 8.2 million years lived by disability (YLDs) were the dramatic signs of emerging burden of NCDs in 2016 in Iran (9). The four main NCDs are responsible for 81% of premature death in the country (10). Moreover, dietary risks are among the first line of NCDs’ risk factors in Iran (11).

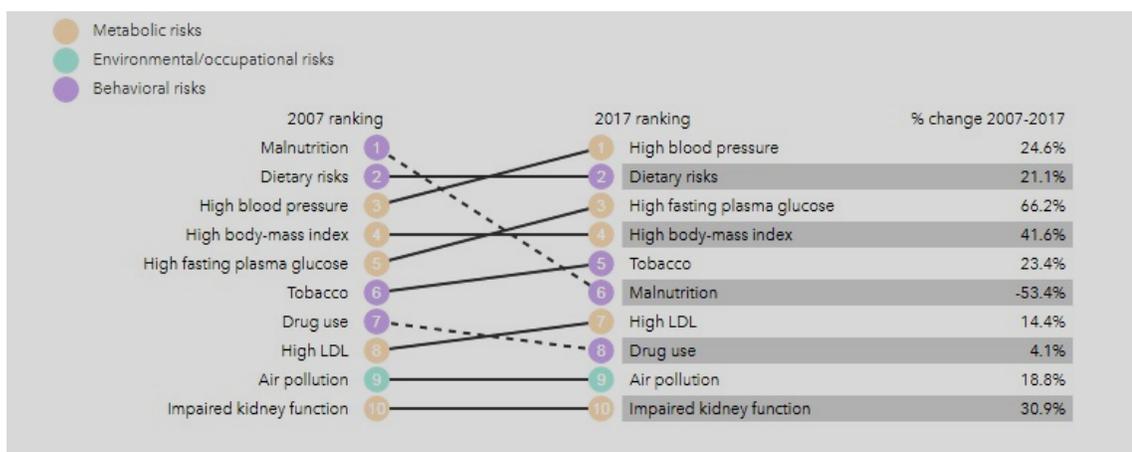


Figure 2: Top 10 Risks contributing to DALYs in 2017 and percent change, 2007-2017(11)

Further, the economic burden of NCDs and its impact on productivity reduction is considerable. Poor people struggle more with health expenditure and living costs, leading them to suffer from economic stress more than other people [10, 12]. The first cause of catastrophic health expenditures is related to NCDs, reinforcing the key position of social inequities in this regard [13]. The WHO has introduced the most cost-effective, population-wide health-care interventions to reduce NCDs’ risk factors as public health “Best Buys”, including: tobacco-control measures; reducing salt intake; replacing trans-fats in foods with polyunsaturated fats; promoting public awareness about diet and physical activity; and delivering hepatitis B vaccinations, among others (14) The widespread implementation of Best Buys, along with primary healthcare (PHC) measures, require only a modest investment and may potentially lead to quick gains in counteracting the effects of NCDs (14).

Many countries have reported the impact of population salt reduction and the expected health benefits as a cost-effective “Best Buy”. There are few examples of successful models in the LMICs that address the complex governance of the disease-inducing elements found in the near-ubiquitous commercial commodities such as food, sweetened beverages and alcohol (14). Our study aimed to identify potentially appropriate governance mechanisms with potential positive impact on the rates of risk exposure, as

well as determining the alignment of these policies based on Best Buys recommendations. This article reports the findings of an ongoing international study that aimed to compare the policies to bring sugar, salt and fat down in Iran and other selected countries. The study was conducted within seven countries. Although the study was conducted within seven countries, we mostly report the status of Iran here, and may use some other contexts only for comparative purposes.

Methods

We established a team of 30 researchers from seven countries in MENA, East and South Asia regions, with a close relationship with the governments of participating countries. Our network research includes Afghanistan, Bangladesh, Iran, Nepal, Pakistan, Tunisia and Vietnam, representing a wide spectrum of economic contexts of low (Afghanistan, Bangladesh, Nepal) to upper middle income (Iran, Tunisia) countries. The team created a comprehensive repository of available policy documents about sugar, salt and fat policies across all countries and conducted a content analysis, plus interviews with relevant stakeholders within all seven nations. We compared policies and their content with the WHO's Best Buys recommendations, aiming to identify how best practices can be scaled up nationally and lessons learnt cross-nationally based on Best Buys interventions. In this article, we report our findings regarding Iran's context and compare its policies with other countries.

Initially, we gathered and studied all upstream and downstream policies in Iran regarding salt, fat and sugar since 2003, when the Supreme Council for Health and Food Security (SCHFS) established. We followed a four step Scott method to determine authenticity, credibility, representativeness and meaningfulness of data (15). First, to assure authenticity, we investigated the offering source of documents and verified the ones issued by the Parliament, the Government, and SCHFS as authentic. Second, to determine credibility, we verified only those documents that were not misleading or biased, and were without any personal and organizational conflict of interest. Third, representativeness meant that the investigated documents presented general policies or determined keywords on the basis of our research objectives. Finally, we ensured meaningfulness through

determining that the document was clear and comprehensive in terms of face and content validity. Therefore, all documents that missed even one of the quadruple Scott's indices were excluded from the content analysis. Finally, we conducted the content analysis of the identified documents using a mixed (inductive and deductive) approach (16). The included documents came from a diverse group of proposed policies, laws and regulations. Table 1 represents the list of upstream and downstream policies included in this study.

Table 1: The upstream and downstream policies regarding salt, sugar and fat in Iran

Number	Policies Title
1	Supreme Leader's Mega Policies for Health
2	Fourth National Development Plan
3	Fifth National Development Plan
4	Sixth National Development Plan
5	Islamic Consultative Assembly Approvals and laws regarding salt, sugar and fat
6	The SCHFS' approvals in Iran
7	National Action Plan for the Prevention and Control of Non-Communicable Diseases and Related Risk Factors in the Islamic Republic of Iran, 2015-2025.
8	Community Nutrition Literacy and Culture Improvement Program.
9	Labeling criteria for food and dietary supplements
10	National Nutrition and Food Security Documents
11	The Health Attachment of 4 th National Development Plan
12	Iranian Food and Drug administration (FDA) Approvals regarding salt, sugar and fat.

Full list of all polices and their details is available in Appendix 1. We used a color-based presentation to categorize our findings as below:

Red = no mention in the policy documents;

Amber = topic is mentioned but it appears to be an aspirational mention (i.e: "We will plan to.....") rather than an actual policy/strategic action in place;

Green = topic is mentioned and policy/strategic action is in place.

Findings

Best Buys criteria:

Figure 3 presents the sugar policies status in Iran, based on “Best Buys” recommendations. Most policies are green and only one policy is amber. There is no red area in this domain.

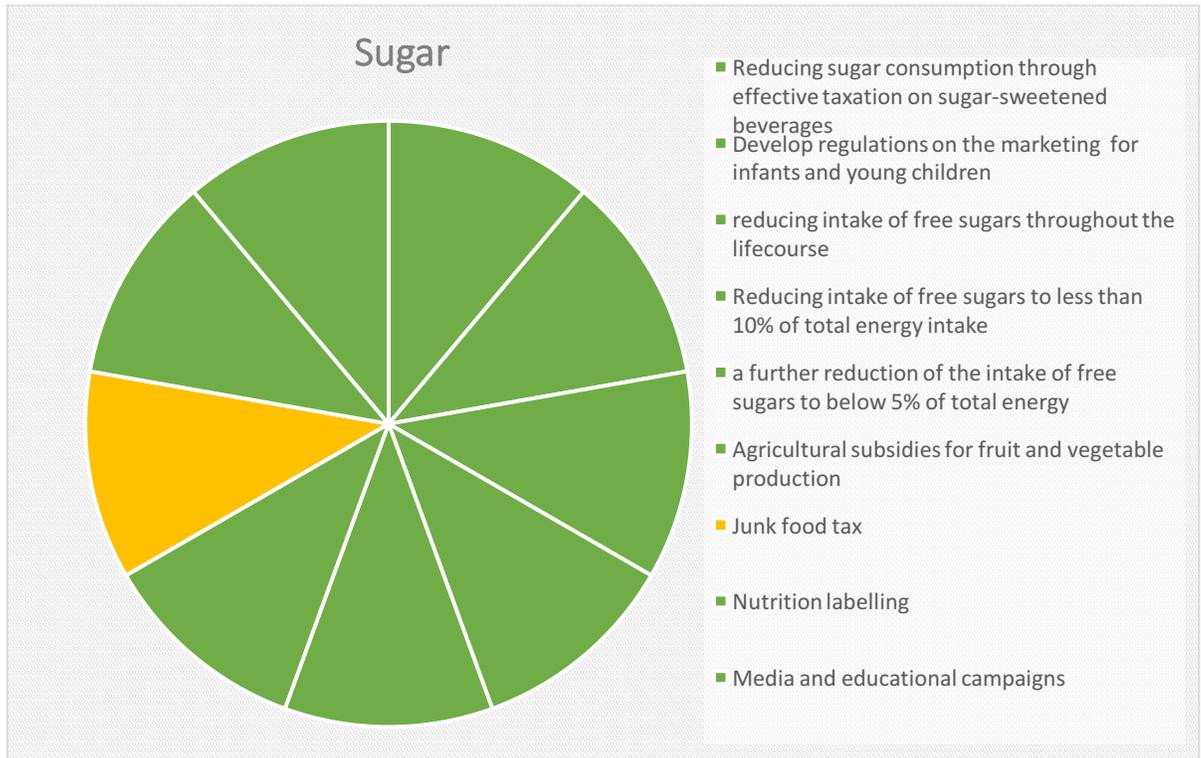


Figure 3: The sugar policies status in Iran based on Global Best Buys recommendations

Figure 4 shows the salt policies status in Iran, based on Global “Best Buys” recommendations, indicating that all policies are green.

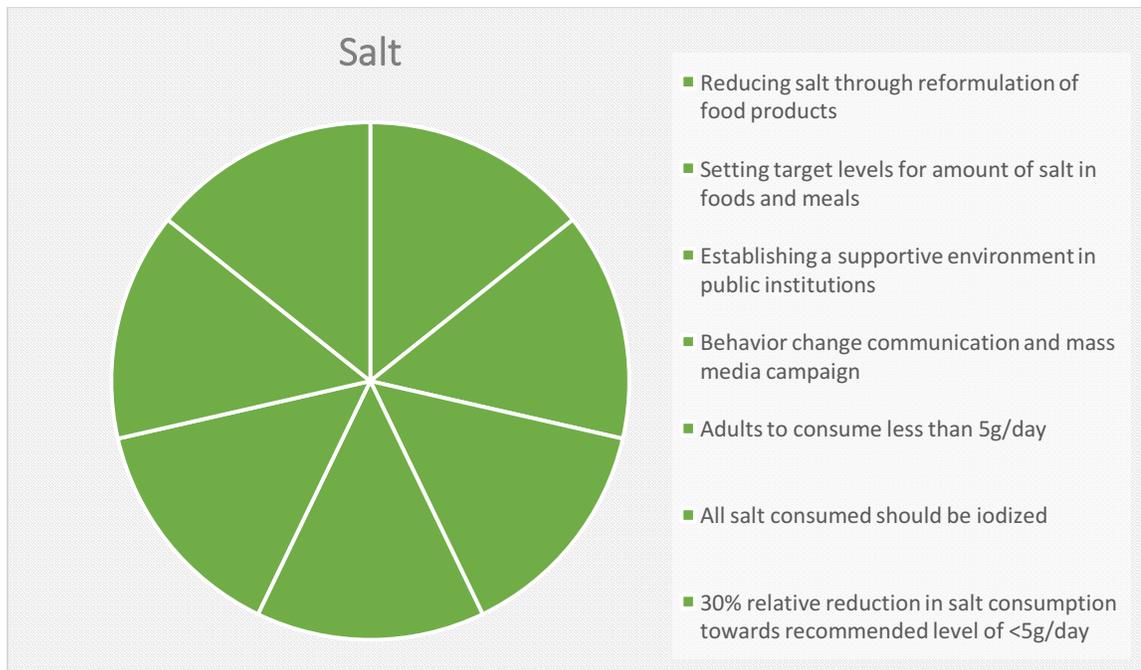


Figure 4: The salt policies status in Iran based on Best Buys recommendations

Figure 5 shows the Trans-fat policies status in Iran, based on Global Best Buys recommendations, indicating that all policies are green.

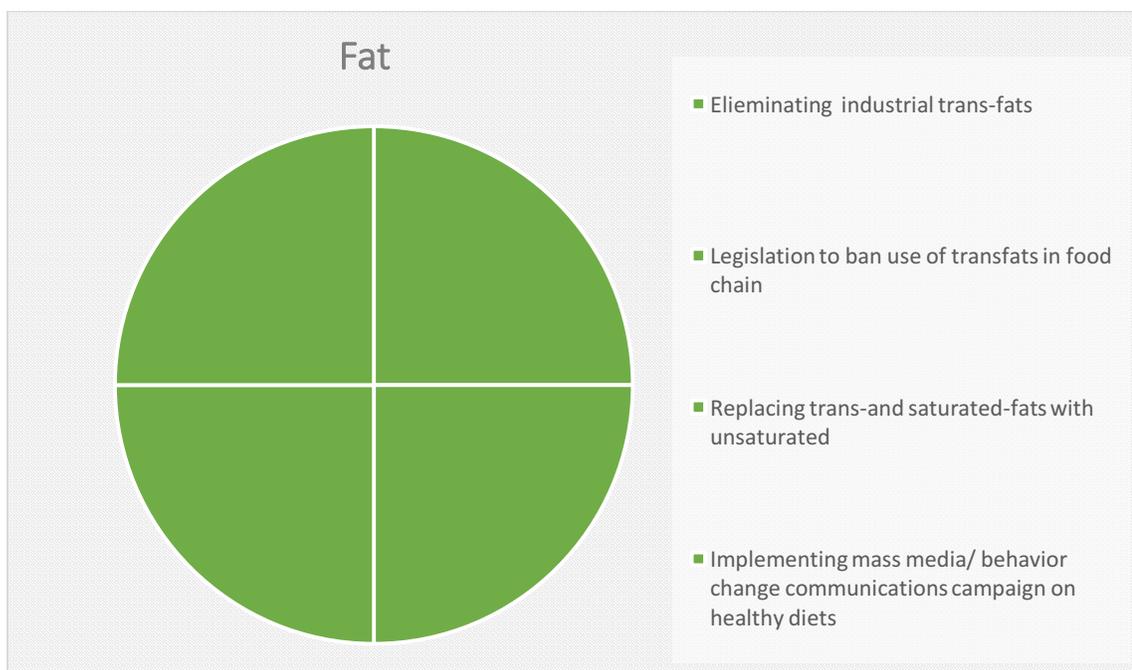


Figure 5: The Trans-fat policies status in Iran based on Best Buys recommendations

Discussion

Compared to the selected countries in this study, the status of best buys- related policy content is generally advance in Iran. Our analysis revealed that 20 policies are in green, while only one policy is amber and there is no policy in red. In 2016, the WHO officially selected Iran as a fast track country, whose governance mechanism to combat NCDs was recognized along with few other countries, premier and advanced at the global level, (17) and the first in the Eastern Mediterranean region. (18).

There are various reasons behind this progress. First, the highest level of political support led Iran to develop National Action Plan for Prevention and Control of NCDs in 2015, aligned with WHO global targets as well as national priorities and evidence derived from national and subnational burden of diseases study (19). The plan was approved by the SCHFS, Iran’s multisectoral mechanism to ensure “health in all policies” approach, and announced by the President in February 2016. Consequently, the Ministry of Health and Medical Education (MOHME) established the Iranian non-communicable diseases committee (INCDC), led by the minister and membered by pioneer stakeholders, to make

relevant policies, monitor the implementation, and scale up interventions to reduce premature death attributed to the NCDs by 30% until 2030. The INCDC has nine sub-committees according to various aspects of prevention and controls of NCDs and their risk factors and national targets (17,19).

Second, the INCDC advocated the dissemination of the national plan across the country, through direct dialogue with the governors and related high officials across all 31 provinces in Iran. In addition, all medical universities were mandated to define their provincial action plan for prevention and control on NCDs, in line with the national plan and the global best practices. The sub-committee for monitoring within the INCDC was tasked to monitor the smooth implementation of the plans nationwide and provide food for improving their implementation.

Third, the INCDC approved a tailored WHO strategy for early screening of NCDs' risk factors and its low-cost treatment (PEN: Package of Essential Non-communicable Diseases interventions), so-called IRaPEN. IRaPEN included interventions to increase access to affordable medicines; guidance on practicing healthy habits, e.g. regular exercise and a healthy diet to control blood sugar, and active risk score assessment of cardiovascular diseases (17). The implementation of IRaPEN began in four pilot cities, and gradually expanded to the whole country. The ongoing health transformation plan (HTP) to reach universal health coverage (UHC), facilitated the implementation of the national action plan and enhanced political and public support to fulfill its goals in Iran. In particular, HTP led more than 95% of citizens to enjoy basic health insurance, which increased the affordability of the needed services for NCDs.

Fourth, the MOHME has successfully managed to increase access to essential medicines for NCDs and distribute them through the public health and secondary care facilities across the country (17).

Fifth, in line with the Sixth National Development Plan, in 2017, Iran's Minister of Health and Medical Education officially communicated with the WHO the Iran's commitment to

allocate extra € 450 million (US\$ 480 million) annual fund for prevention and control of NCDs, during the next five years. Further, the Food and Drug Administration (FDA) affiliated with the MOHME, initiated a series of interventions to bring down the commercial risk factors of NCDs, i.e. reformulating food products, traffic light labeling for sugar, salt and fat on all shelves products, and restricting the import of palm oil or food products containing it, all of which contributed to a health-enabling environment for making healthier foods more available (17).

Sixth, in 2016, the MOHME established the Deputy for Social Affairs, whose responsibility is ensuring community participation, increasing public awareness, and materializing multisectoral collaboration for health. This newly-established governance mechanism has contributed to industrial interventions to reduce the burden of NCDs in Iran.

Per capita consumption of salt was 12 gram/day (20) in Iran, two times more than the recommended global amount.

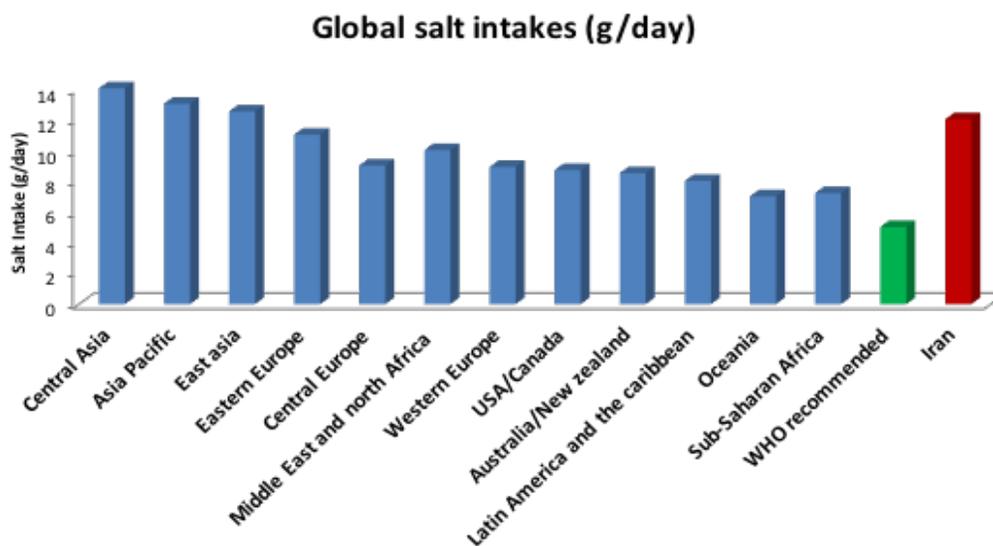


Figure 6: Global salt intakes before starting the plan (g/day)

A recent 24-hour recall measure to estimate dietary intake showed that 53.6% of salt was used in a discretionary way at home, while bread was the biggest contributor to salt intake, providing 12% of the total intake. Cheese (5.3%) and yoghurt drinks (4.7%) were the next

most important sources. There are 70,000 bakeries in the country, presenting a major challenge in ensuring that adequate health inspections of all bakeries are in place to verify salt reduction measures. The average consumption of bread is 320 g/day, but intake varies markedly between the cities and rural areas, and the salt content of bread varies markedly, from 1.8%–2.3% in flour (20).

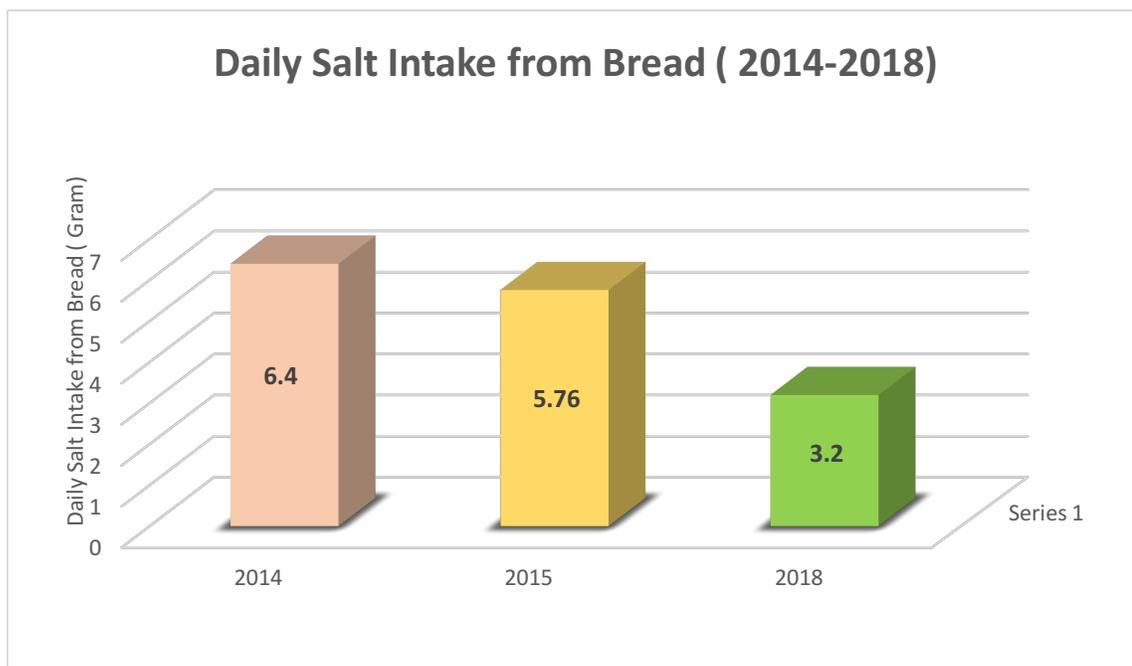


Figure 7: Daily salt intake from bread 2014-2018 in Iran

Various regulatory measures were developed to reduce salt intake through a revision of food standards and specifications, making Iran as the only country in the Eastern Mediterranean region of WHO implementing such regulatory measures (21). For instance, the national salt reduction plan has mandated the MOHME, in collaboration with other stakeholders, to conduct surveys to measure salt, sugar and oil consumption patterns among population; collaborate with the National Standards Organization in developing relevant food standards; expand nutritional labelling through working with the food industry as a key partner; and enhance the capacity of health workers and technical staff across the 31 provinces to materialize the aims of the plan (21), all of which has reduced salt consumption. A recent study shows that the mean of salt intake among Iranian population was 9.52 g/day, presenting almost 3 g/day reduction after implementing the plan (22).

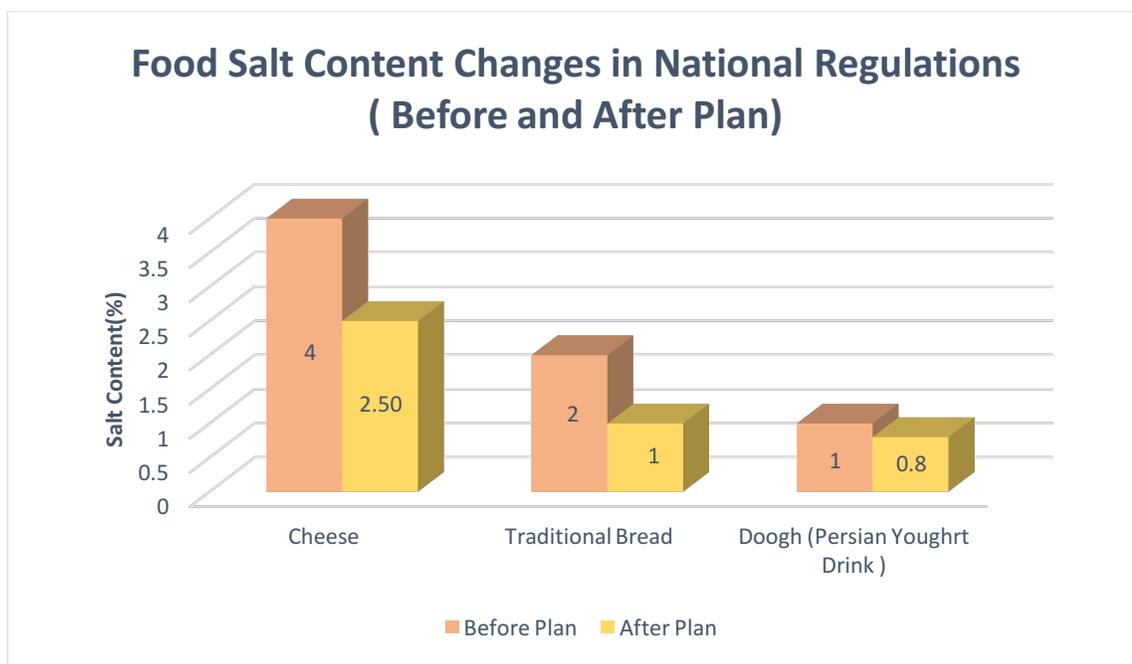


Figure 8: Food salt content changes in national regulation, before and after plan in Iran

Regarding trans-fat consumption, a national survey found that over 12% of calories consumed came from partially hydrogenated vegetable oils, the main source of trans-fats in Iran. Trans-fats contained more than a third of the fatty acids in those oils or almost 5% of daily calorie consumption, double the trans-fat intake in the United States of America in 2007 (23). To tackle the problem, in 2014, the SCHFS approved the standard revisions for trans-fatty acids to reduce to less than 2% and saturated fatty acid to reduce to less than 25%, in all fats and oils used in Iran. Further, Iran is the only country in the WHO Eastern Mediterranean region that has developed regulatory measures through revision of food standards and specifications, aiming to reduce industrialized trans-fatty acids in oil and margarine. In order to reduce saturated fatty acid intake, the Ministry of Trade was mandated to reduce the amount of imported palm oil, which reduced from 70% to 30% in 2014 (24).

FDA's recent data shows that current trans-fat acid consumption is 1.5 g/day, an equivalent to 0.7 percent of total daily energy and saturated fatty acid consumption is 19g/day equivalent to 8.6 percent of total daily energy, indicating Iran has achieved its goals about trans-fat and saturated fat acid (25).

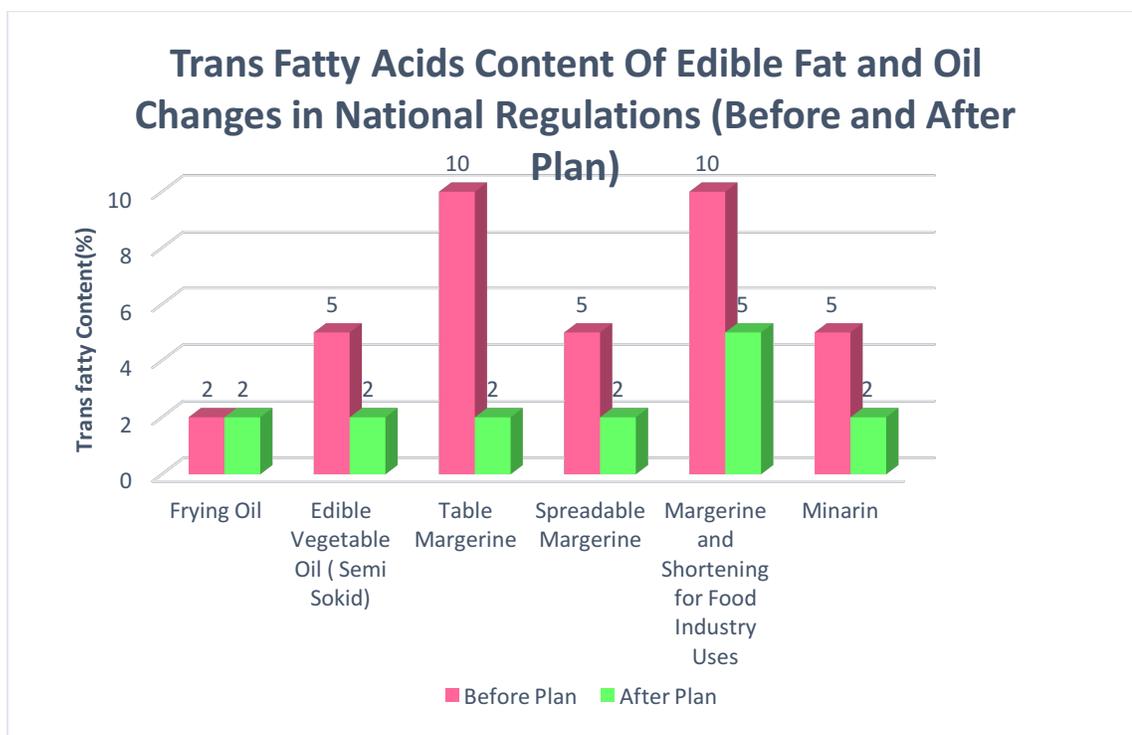


Figure 9: Trans Fatty Acids Content in Iran

Conclusion

This study network of seven LMICs allowed us to learn from each other, share positive examples of governance for NCD control, review the role of systems of government in governing NCD risks and explore the common challenges faced by participating countries. In addition to technical solutions to combat NCDs, feasible and meaningful policy solutions, which are aligned with the political economy of each context, are crucial to be created. Policy learning from national, regional and global experiences is essential to manage the political economy of the main determinants of NCDs.

Our policy analysis presents that Iran has formulated NCDs roadmap based on Best Buys recommendations, where required policies for reducing sugar, fat and salt are in place (green). Nevertheless, some policies are more aspirational commitments than concrete measures, rendering the need for more actions, particularly structural interventions to address food reformulation, taxation and marketing. NCDs are complex and

multidimensional phenomenon, tackling which requires adoption of successful global experiences and tailoring best practices to be implemented at the local level.

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