Sultanate of Oman
السلطان هيثم بن طارق
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Foreword

Acknowledgements

The National Nutrition Strategy and Framework for Action for the Sultanate of Oman is the outcome of a meticulous technical process led by the Nutrition Department in the Ministry of Health in Oman and supported by the collaborative efforts of various actors worthy of acknowledgment.

First and foremost, I would like to thank H.E. Dr. Ahmed bin Mohammed Al Saidi, Minister of Health for his continues gracious support to nutrition. I extend my thanks to H.E. Dr. Mohammed bin Saif Al Hosni, Undersecretary of Health Affairs for his encouragement to accomplish this work. I also express my appreciation to Dr Said al Lamki, Director General of Primary Health Care for the overarching guidance and support provided throughout the strategy development process. I also acknowledge the efforts of the nutrition team in the Ministry of Health, with special recognition for the contributions of Mr Saleh Alshammakhi, medical statistician who has conscientiously seen the process through to its final stages and endorsement.

The completion of this undertaking would not have been possible without the technical contribution and assistance provided from WHO Regional and Country Offices. I would like to express my sincere thanks to Dr Karen McColl, WHO consultant who developed the strategy document, and the overarching guidance provided by Dr Ayoub Al Jawaldeh, Regional Advisor for Nutrition in the WHO Regional Office for the Eastern Mediterranean. My gratitude extends to Dr Lamia Mahmoud, public health specialist in WHO office Oman who contributed in reviewing and editing the document with valuable inputs. I acknowledge the guidance and invaluable advice provided by Dr Samia Al Ghannami, previous Nutrition Director who led the development of the Strategic Study for the National Nutrition Strategy that was conducted in 2014 and upon which this newly endorse strategy is built.

I also extend my thanks to all sectors, ministries and partners who have shared their inputs and constructive guidance for the betterment and comprehensiveness of the document, ensuring a collaborative spirit and response to the nutrition challenges faced by Oman. We look forward to our joint implementation of the Nutrition Strategy and celebrating its achievements and accomplishments.

Dr Salima Ali Al Maamary
Director of Nutrition department
Ministry of Health, Oman
Abbreviations

BF    Breast Feeding
BFHI  Baby-Friendly Hospital Initiative
BMI   Body Mass Index
CF    Complementary Feeding
DM    Diabetes Mellitus
GCC   Gulf Cooperation Council
GSO   Gulf Standards Organization
HFSS  High in fat sugars and/or salt
KPI   Knowledge, Attitude, Practice
MAF   Ministry of Agriculture and fisheries
MoH   Ministry of Health
MoE   Ministry of Education
MUAC  Mid-upper arm circumference
NCD   non-communicable disease
NCP   Nutrition Care Process
NMIS  Network Management Information System
ONNS  Oman National Nutrition Survey
ppb   Parts per billion
ppm   Parts per million
RBP   Retinol Binding Protein
SBP   Systolic blood pressure
WHA   World Health Assembly
WHO   World Health Organization
Executive summary

The Sultanate of Oman has made considerable progress in reducing the prevalence of various forms of undernutrition in the past four decades. Despite this progress, the rates of stunting (11.4%) and wasting (9.3%) in Oman remain stubbornly high, particularly for a wealthy country with a high level of human development. This was shown in Oman National Nutrition Survey (ONNS) conducted in 2017 among children under five and women of reproductive age. At the same time, the prevalence of overweight and obesity is high among adults — with two-thirds (66.2%) of adults overweight or obese — and is increasing among young children. Notably, nearly 60% of women of reproductive age are overweight or obese and this increases with age. Prevalence of anaemia among pre-school children has declined significantly since 2009. Nonetheless anaemia among young children and adult women still constitutes a moderate public health problem in Oman, although this is not always clearly related to iron deficiency.

The ONNS report highlighted many specific gaps in young child feeding in Oman, which are opportunities for additional interventions. There is a clear need to improve breastfeeding practices, particularly to increase exclusive breastfeeding, as well as complementary feeding in the 12 – 23-month age group and to prevent further increases in childhood overweight and obesity. In addition, specific efforts may be warranted to tackle vitamin A deficiency in certain governorates where high prevalence is of concern.

Oman has been commended for its significant progress on the health-related Millennium Development Goals and its efforts to improve food security and nutrition in recent decades. Food security has been prioritized in national health policy and by boosting agricultural productivity, the availability of and access to food was increased. The government has implemented various programmes to combat malnutrition; these address infant and young child feeding; school feeding, and various fortification and supplementation initiatives. Strategic interventions include the development of dietary guidelines, the Omani Code for Marketing of Breast-milk Substitutes and efforts towards implementing food labelling regulations.

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1 Reference WHO award to Oman
2 Oman Vision 2040
Building on Oman’s record of success in reducing the burden of undernutrition, the new nutrition strategy for the period 2020-2030 aims to address all forms of malnutrition in the Sultanate. The Strategy provides a framework to support the Ministry of Health and other stakeholders across government and wider society, in their efforts to achieve the Sultanate’s 2040 vision of becoming a regional model of health and wellbeing.

The vision of Oman’s national strategy on nutrition for the coming 10 years is well aligned to WHO’s Regional Nutrition Strategy, envisioning that “Oman has strengthened action on nutrition to achieve food security, end all forms of malnutrition and improve nutrition throughout the life course by 2030”. The strategy objective is to ensure universal access to healthy and sustainable diets, and implement effective nutrition actions, targeting a life course approach for mothers, infants, children, adolescents and older people in all circumstances including emergency situations. The strategy also outlines the specific objectives to be achieved, in addition to underlying principles and strategic approached that include multisectoral action and addressing the social determinants that impact health outcomes. The Strategy, and its Framework for Action, set out a whole-of-government and whole-of-society approach for tackling the persistent problems of stunting and wasting as well as the growing problems of overweight, obesity and diet-related NCDs.

The wide-ranging Framework for Action — reflecting the six key areas of action of the Strategy for nutrition for the WHO Eastern Mediterranean Region, 2020 – 2030 and the UN Decade of Action on Nutrition — highlights a series of new policies, measures and interventions to reinforce those actions which are already underway. The areas of action include and address resilient food systems, health system strengthening, social protection, improved trade policies, healthy environments, and robust nutrition governance. By implementing this strategy, it is hoped that Oman can ensure universal access to healthy and sustainable diets and effective nutrition actions to improve nutrition throughout the life course.

Introduction

The Sultanate of Oman has made considerable progress in reducing the prevalence of various forms of undernutrition in the past four decades, against the backdrop of very rapid socio-economic development. Nonetheless, prevalence of some forms of undernutrition remain stubbornly high, with 11.4% of children under 5 years affected by stunting (chronic malnutrition) and 9.3% affected by wasting (acute malnutrition), as shown in the National Nutrition Survey conducted in 2017. Moreover, like other countries in the Eastern Mediterranean Region, Oman is experiencing the nutrition transition whereby other forms of malnutrition, including overweight, obesity and diet-related noncommunicable diseases (NCDs), are becoming increasingly important. NCDs are now responsible for more than three-quarters of deaths in Oman\(^3\), and poor diets are a key contributor.\(^4\) Together, these multiple forms of malnutrition take a heavy toll on the health, well-being and sustainable development of the Sultanate.

In order to address the gaps in nutrition data, better formulate the 5-year health plan, and contribute to the evaluation of the 8\(^{th}\) Five Year Health Development Plan 2011-2015, a national nutrition assessment was conducted in 2017. The Oman National Nutrition Survey (ONNS) 2017\(^5\) provided an assessment of undernutrition, overweight, obesity and micronutrient deficiencies, as well as risk factors relating to diet and physical activity, in preschool children and women. The report of this national nutrition assessment made a series of recommendations to improve the nutrition situation in the Sultanate.

Global momentum to address malnutrition has increased significantly in the last decade. Like other countries, since 2012, action to improve nutrition in Oman has been aligned with international efforts towards achievement of global targets on nutrition and diet-related NCDs to, by 2025:

- Reduce by 40% the number of children under 5 who are stunted
- Reduce by 50% anaemia in women of reproductive age
- Reduce by 30% low birth weight
- Ensure no increase in childhood overweight
- Increase the rate of exclusive breastfeeding in the first 6 months up to at least 50%
- Reduce and maintain childhood wasting to less than 5%
- Reduce overall mortality from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases by 25%


- Reduce mean population intake of salt/sodium by 30%
- Reduce the prevalence of raised blood pressure by 25%
- Halt the rise in diabetes and obesity

Reaching these targets will contribute to achievement of the Sustainable Development Goals, established in 2015, to end all forms of malnutrition (Target 2.2) and to reduce premature mortality from NCDs (Target 3.4). Improvements in nutrition will also act as an enabler for progress towards other Sustainable Development Goals.

Recent efforts to address malnutrition have emphasized the importance of transforming food systems so that they supply healthy diets, sustainably produced, for all. This approach is integral to the United Nations Decade of Action on Nutrition, 2016-2025.

To drive progress towards these global goals and implementation of the Decade of Action on Nutrition at the Regional level, a new Strategy on Nutrition for the Eastern Mediterranean Region 2020—2030 was endorsed by states of the Region in October 2019 and launched in Muscat, Oman in December 2019.

In order to take forward the recommendations of the national nutrition survey report and those of the strategic study on nutrition in Oman conducted in 2014 and a 2019 report on the food systems approach in Oman, as well as implementing the new regional strategy on nutrition, this document proposes a national nutrition strategy and framework for action for the period 2020-2030.

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6 As defined by the High Level Panel of Experts (HLPE) on Food Security and Nutrition, a food system gathers all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the output of these activities, including socio-economic and environmental outcomes.

7 Strategy on nutrition for the Eastern Mediterranean Region. WHO Regional Office for the Eastern Mediterranean, 2019


9 Promoting a Sustainable Food System, Healthy Diets and Improved Food and Nutrition Security in Oman. Report Reference
The nutrition situation in the Sultanate of Oman

The nutrition situation — including a breakdown by gender, age group, governorate, household income and mother’s education — was most recently described in the report of the Oman National Nutrition Survey (ONNS) conducted in 2017 among Omani nationals, with a focus on children under five and women of reproductive age.\(^9\) The ONNS sample was a sub-sample of the STEPWISE survey conducted in 2017. Additionally, the STEPWISE survey provided information on prevalence of NCDs and their risk factors.\(^10\) The STEPWISE survey sample included Omani and expatriates residing in Oman, while the ONNS sub-sample included only Omani households. The nutrition context has also been explored in detail in a Strategic Study 2014 – 2050,\(^11\) as well as for development of a comprehensive food systems project in the Sultanate.\(^12\)

Country context
Oman has a population of 4.7 million (2.7 million Omani nationals and 1.9 million expatriates), an increase of 95% in 20 years.\(^13\) The capital, Muscat, has a population of over 1.4 million people.\(^14\) Since 2011, the country has been divided into 11 administrative governorates.

Over the past four decades, Oman has undergone rapid economic development. Life expectancy has also increased from 51 years in 1970 to 76.6 years in 2015.\(^15\) The country is ranked as 47 out of 188 countries on the Human Development Index\(^16\) and was reported to be the country with the highest progress in the world between 1970 and 2016.\(^17\)

Around 60% of the food consumed in Oman is imported, including rice and wheat (the preferred staples), sugar, vegetable oil, vegetables and highly processed foods. Food self-sufficiency has been a concern in the country, as has the poor availability of locally-grown, nutrient-rich foods. Oman Vision 2040 was developed through a participatory process to set the strategic direction and national priorities for coming decades.\(^18\) It highlights the goal of achieving food and water security based on renewable resources and advanced technologies. This economic progress had been accompanied by a marked change in the nutrition situation.

Nutrition in infants and young children (under 5)
The prevalence of underweight in children had dropped from 24.4% in 1991 to 8.6% in 2009.\(^19\) Despite this earlier progress, however, the ONNS highlighted a lack of any further progress over the last decade, with prevalence increasing slightly from the 2009 level to 11.2%.

\(^{11}\) Sultanate of Oman, Ministry of Health. Oman STEPS survey 2017: Factsheet Omani and Non-Omani 18+.
\(^{13}\) Promoting a Sustainable Food System, Healthy Diets and Improved Food and Nutrition Security in Oman. Report Reference
\(^{15}\) National Centre for Statistics and Information, Sultanate of Oman, March 2020. https://www.ncsi.gov.om/Pages/NCSI.aspx
\(^{19}\) Oman Vision 2040: Moving forward with confidence. (Draft, 11 September 2019)
in 2017. Prevalence does not vary between children of different ages, governorate of residence, household wealth or mother’s educational status.

Child stunting also remains a stubborn challenge, with little change from a prevalence of 10.6% in 1999\textsuperscript{22} to 11.4% in the 2017 ONNS and is highest in children 12 – 23 months of age. This means that stunting is a public health problem of medium concern, according to WHO thresholds.\textsuperscript{23} Although stunting is slightly less common in the wealthiest household, there are no statistically significant differences by household wealth or mother’s educational level. Prevalence is much higher, however, in children of short mothers than children of taller mothers, reflected in a higher prevalence of moderate stunting (there is little difference in severe stunting), highlighting the intergenerational cycle of malnutrition in Oman.

Furthermore, 9.3% of children under 5 in the country are wasted (too thin for their height), which is high for a wealthy country with a high level of human development. Prevalence is highest in children less than 6 months of age (15.5%), followed by 6-11 months of age (10.7%). There are no statistically significant differences between governorates, household wealth or mother’s educational level. Wasting also remains, therefore, a medium-level public health concern, according to WHO thresholds.\textsuperscript{24}

In 2018, annual health statistics showed that 11.6% of the children under 5 had low birth weight. UNICEF data for 2008-2012 on low birth weight estimated the prevalence among newborns as 9.6%.\textsuperscript{25}

Prevalence of overweight or obesity in young children increased from 2.4% to 4.2% between 2009 and 2017, but remains relatively low at the national level, with 4.2% of children under 5 years overweight or obese (low level of public health concern). Overweight and obesity are significantly more prevalent among children living in Muscat and Dhofar, children from wealthier households and children of mothers who have completed secondary school or have higher education. In school-age children, the prevalence of overweight almost doubled and the prevalence of obesity almost quadrupled between 1990 and 2016.\textsuperscript{26}

The prevalence of anaemia in children remains a moderate public health problem, affecting 23.8% of children under 5 in 2017. Prevalence has declined substantially in all governorates except Al-Sharqya South. Iron deficiency in children, however, is relatively rare (10.2%), so a large proportion of the anaemia in this age group may be associated with other contributory factors, including inherited haemoglobinopathies. The ONNS concluded, therefore, that iron deficiency is not a major contributing factor in most cases of anaemia in young children.

National prevalence of vitamin A deficiency is estimated at 9.5%\textsuperscript{27} (a mild public health problem). Prevalence is much higher, however, among infants of 6-11 months of age (23.5%) than other age groups among the under 5s, and at 18.9% for 6-59 months in Al-Sharqyah.

\textsuperscript{23} De Onis, 2018
\textsuperscript{24} De Onis, 2018
\textsuperscript{25} https://www.unicef.org/infobycountry/oman_statistics.html
\textsuperscript{27} Defined as plasma retinol binding protein adjusted for inflammation <0.73μmol/L.
South it would be classified as a moderate public health problem and in Al-Wusta as severe (31.9%).

Prevalence of vitamin D deficiency is 10.6%, according to the ONNS. There are no statistically significant differences by age group, household wealth or mother’s educational level, but prevalence does vary between governorates. There appears to be no statistically significant difference in vitamin D status between children with different levels of sun exposure.

While the rate of early initiation of breastfeeding is high (82.0 %), only 23.2 % of infants under 6 months are exclusively breastfed, far from the global target of 50%, by 2025, and the regional target for 2030 of 70%. Even among infants under 4 months, less than a third (31.9%) are exclusively breastfed. The exclusive breastfeeding rate is especially low in Dhofar and Al-Sharqyah South governorates, and among infants in the wealthiest households. The rate of continued breastfeeding at 1 year, in contrast, is relatively high, at 80.0%. Continued breastfeeding at 2 years is 47.3%, and these levels have not really changed since 2009. The median duration of breastfeeding among children less than 24 months is more than 21 months. The most commonly consumed liquids other than breast milk for infants under 6 months were plain water (55.3% in past 24 hours) and infant formula (52.6%), followed by thin porridge (15.5%) and other liquids (14.4%).

The other infant and young child feeding indicators also suggest that there is room for progress. The appropriately timed introduction of solid foods had improved since 1990 and the vast majority of infants (95%) had been introduced to complementary foods between 6 and 8 months. Furthermore, the diets of 81% met the criteria for minimum dietary diversity, with 90% having eaten an iron-rich food in the past 24 hours. However, minimum meal frequency has declined since 2009 and fewer than half (47.0%) of those aged 6-23 months had a minimum acceptable diet — this varied between governorates, ranging from 3.7% in Al Wusta to 64.9% in Al-Sharqyah North. Furthermore, nationally more than half of the children between 6 and 23 months had been bottle-fed (53%) or eaten sugary foods (51.5%) in the previous 24 hours, and less than half (48.9%) of those not being breastfed were receiving adequate milk feeds (a situation that has declined appreciably since 2009).

Young children, 24-59 months of age, do not consume fruits and vegetables as often as recommended in the national dietary guidelines (3-4 servings per day) — 21.2% and 19.7% have fruit and vegetables, respectively, less than once a day. Over half of children in this age group consume French fries or chips (52.9%), sweetened fruit juice (51%) or coffee or tea with sugar (77.5%) once or more daily. Consumption of fast food in this age group is not common. Almost half (46.9%) of these children have sunflower oil added to their food regularly, while addition of olive oil, ghee, corn oil and palm seed oil is also quite common.

In relation to screen time, physical activity and sleep patterns, overall, children under 5 watch less than two hours of television or video per day, get, on average, more than 10 hours of sleep on both weekdays and weekends and play outdoors for more than 30 minutes on almost five days per week. Few children in this age group participate in organized physical activities. Just under two thirds (64.3%) never or rarely watch television while eating, but 23.4% do watch television for one meal per day and more than a quarter (27.9%) have a television or computer in their bedroom.
### Table 1 Summary of nutrition indicators for children under 5, 2009 and 2017

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2009 survey (N=9826)</th>
<th>ONNS 2017 (N=3248)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prevalence</td>
<td>% 95% CI</td>
</tr>
<tr>
<td><strong>Anthropometric indices</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stunting</td>
<td>9.8%</td>
<td>(7.3, 13.2)</td>
</tr>
<tr>
<td>Wasting</td>
<td>7.1%</td>
<td>(5.8, 8.6)</td>
</tr>
<tr>
<td>Overweight and obesity</td>
<td>2.3%</td>
<td>(1.6, 3.4)</td>
</tr>
<tr>
<td>Underweight</td>
<td>8.6%</td>
<td>(6.5, 11.3)</td>
</tr>
<tr>
<td><strong>Micronutrient status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anemia</td>
<td>60.6%</td>
<td>(45.7, 73.9)</td>
</tr>
<tr>
<td><strong>Feeding behaviours</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children less than 24 months of age with early initiation of breastfeeding</td>
<td>82.6%</td>
<td>(78.6, 86.1)</td>
</tr>
<tr>
<td>Children less than 6 months of age with exclusive breastfeeding</td>
<td>16.0%</td>
<td>(8.9, 27.3)</td>
</tr>
<tr>
<td>Continued breastfeeding at 1 year</td>
<td>78.9%</td>
<td>(70.0, 85.8)</td>
</tr>
<tr>
<td>Infants 6-8 months of age who receive sold, semi-solid or soft foods in past 24 hours</td>
<td>84.1%</td>
<td>(70.8, 92.0)</td>
</tr>
<tr>
<td>Children 6-23 months of age with minimum dietary diversity</td>
<td>66.6%</td>
<td>(57.8, 74.3)</td>
</tr>
<tr>
<td>Children 6-23 months of age with minimum meal frequency</td>
<td>82.6%</td>
<td>(71.4, 90.0)</td>
</tr>
<tr>
<td>Children 6-23 months of age with minimum acceptable diet</td>
<td>56.9%</td>
<td>(47.2, 66.0)</td>
</tr>
<tr>
<td>Ate iron-rich or iron-fortified food in past 24 hours</td>
<td>80.1%</td>
<td>(69.3, 87.8)</td>
</tr>
<tr>
<td>Children less than 24 months of age who were ever breastfed</td>
<td>99.6%</td>
<td>(98.1, 99.9)</td>
</tr>
<tr>
<td>Continued breastfeeding at 2 years</td>
<td>43.9%</td>
<td>(27.5, 61.7)</td>
</tr>
<tr>
<td>Children less than 24 months of age with age-appropriate breastfeeding</td>
<td>8.8%</td>
<td>(6.7, 11.3)</td>
</tr>
<tr>
<td>Infants 0-5 months of age who are predominantly breastfed</td>
<td>93.8%</td>
<td>(88.5, 96.7)</td>
</tr>
<tr>
<td>Children 0-23 months who were bottle fed in past 24 hours</td>
<td>41.1%</td>
<td>(31.7, 51.3)</td>
</tr>
<tr>
<td>Adequate milk feeding (non-breastfed children 6-23 months who receive at least two milk feeds in past 24 hours)</td>
<td>79.6%</td>
<td>(68.8, 87.3)</td>
</tr>
</tbody>
</table>


**Nutrition in women of reproductive age**

Overall, among Omani women aged between 15 and 49 years, 2.3% and 1.6% are moderately and severely undernourished, respectively. Prevalence is highest among younger women,
with 3.4% of 15 to 19-year-old women and 3.6% of 20 to 24 year-old-women severely underweight and 6.6% and 3.3%, respectively, affected by moderate undernutrition.

Overweight and obesity have steadily increased in Oman and are now very common among Omani women. The Oman STEPWISE survey in 2017 found that 69.3% of women aged 18 years or above (Omani and expatriate residing in Oman) were overweight or obese. Of these, 39.3% were obese. Among Omani women of reproductive age, 25.6% were overweight and 33.6% obese in the 2017 ONNS survey. Prevalence increases with age, with more than 75% of women 35-49 years of age either overweight or obese. There are also differences between governorates — prevalence of overweight and obesity combined ranges from 47.5% in Al Dhakhlya to 74.2% in Dhofar — but there is no strong correlation with household wealth. There is, however, a statistically significant increase in the proportion of women with increased waist circumference and with high waist-hip ratio with increasing household wealth.

The ONNS found that more than a quarter (27.8%) of non-pregnant women of reproductive age are anaemic, and prevalence is highest among adolescents (28.8%). The prevalence of iron deficiency (24.8%) may contribute up to half of the anaemia in women (13.3% prevalence of iron deficiency anaemia). Vitamin A deficiency was found in less than 1% of non-pregnant women of reproductive age. Folate deficiency, however, is present in 11.6% of Omani women of reproductive age, is higher in young women who are most likely to become pregnant and varies between governorates. Deficiency in vitamin B12 is also present in 8.9% of women. In relation to vitamin D, 16.2% are considered to be deficient and 41.5% to have vitamin D insufficiency.

On average, most non-pregnant women 15-49 years have diverse diets (meeting FAO’s minimum dietary diversity for women indicator). Women eat fruits and vegetables relatively frequently, but only 8.9% are eating fruit more than twice a day and 9.2% vegetables more than twice a day. Starchy staples and dairy products are also commonly consumed, with 52% of women consuming starchy foods three or more times a day and 79.8% consuming dairy products at least once a day). Beans and other pulses are not eaten on a daily basis by 87%. Highly-processed meat and cereal products, drinks with added sugar and sports/energy drinks are not frequently consumed (over 90% consuming less than once a day in all cases). Fruit juices (100%) and sweetened fruit juice were consumed by 13.6% and 24.4% at least once a day. Nearly a third (29.2%) of women consume French fries or chips at least once a day. Regular eating at fast food restaurants is common for a relatively small proportion of women (daily or more often for 7.7%). Over a third (37.3%) of women consume sugary foods at least once a day and 79% consume coffee or tea with sugar at least once a day. Adolescent women aged 15-19 years consume a smaller number of food groups, on average, and are less likely to have a diet meeting the minimum dietary diversity criteria. According to the Oman STEPS survey in 2017, on average adult women aged 18 years or above (including Omani and overseas nationals) consume 2.4 servings of fruit and 2.6 servings of vegetables per day. More than half of women (57.3%) consume less than five servings of fruit and/or vegetables

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28 Body Mass Index (BMI) <16.0
29 Moderate undernutrition/underweight defined as BMI 16.0-16.9
30 Overweight = BMI 25.0-29.9; Obese = BMI 30+
31 Data from the ONNS, 2017.
daily. More than a quarter (27.9%) always or often add salt to their food before eating or while eating.

In relation to physical activity, the Oman STEPS survey found that 48.5% of adult women in Oman have insufficient physical activity (defined as less than 150 minutes of moderate-intensity activity per week or equivalent) and 89.7% do not engage in vigorous physical activity.\(^\text{33}\) According to the ONNS data on Omani women of reproductive age, they watch, on average, 1.6 hours of television a day, play video games for 1.7 hours and sleep for more than eight hours per night.\(^\text{34}\) Most (72.6%) never or rarely watch television while eating, while a third have a television in the bedroom. Only 38.1% take place in organized physical activity in a typical week and only 6.2% of the small proportion (16%) of women who work outside the home for money are involved in vigorous activity for their work (the work of 40.3% of women working outside the home involved moderate activity). Very few women (7.8%) walk or bike to work, school or to do errands, and the average sitting time is over 7 hours per day.

**Pregnant women**
The dietary diversity of pregnant women is similar to those of non-pregnant women of reproductive age — 90.3% had diverse diets — but pregnant women are much more likely to have taken iron or folic acid supplements in the previous 6 months (more than two-thirds had taken an iron and/or folic acid supplement).

Few pregnant women (5%) were underweight as measured by mid-upper arm circumference (MUAC).

The overall prevalence of anaemia in pregnant women (29.3%) is comparable to non-pregnant women but was very high in pregnant adolescents (80.9%). The prevalence of anaemia increases markedly from the first trimester to the second, but then remains stable for the third trimester. In the 2017 study there were no pregnant women with severe anaemia (i.e. haemoglobin < 7.0 g/dL).

**Dietary risk factors and diet-related NCDs among adults**
Among the population as a whole, NCDs are responsible for more than three-quarters (80%) of the deaths in Oman. Prevalence of NCD risk factors is also high. According to the 2017 STEPS survey, more than two-thirds (66.2%) of the adult population (Omani and overseas nationals) were overweight or obese (with 30.7% obese).\(^\text{35}\) In addition, 35.5% of the adult population (Omani and overseas nationals) has raised total cholesterol or is on medication for raised cholesterol, 33.3% have raised blood pressure (SBP>140 and/or DBP >90 mmHG) or are currently on medication for raised blood pressure, and 27.5% have raised fasting blood glucose (>6.1 mmol/L) or are currently on medication for raised blood glucose.\(^\text{36}\) Prevalence of diabetes increased from 8.3% to 11.6% in 2000 and WHO predicted an increase of 190%
between 2005 and 2025.\textsuperscript{37} It has been estimated (based on national and regional surveys conducted between 1991 and 2010) that between 10 and 20% of Omani adults have type 2 diabetes.\textsuperscript{38}

Dietary data suggest that there are high intakes of energy-dense, micronutrient-poor foods, and low levels of nutrient-rich foods, such as fruits and vegetables. The STEPS survey conducted in 2017 found that more than half (60.7%) of the adult population in Oman, for example, eats fewer than five portions of fruit and/or vegetables per day.\textsuperscript{39} Intakes of polyunsaturated fatty acids and sea food omega-3 fatty acids are also reported to be low.\textsuperscript{40} Consumption of sugar-sweetened beverages, in contrast, is high at 120 g per day.\textsuperscript{41}

According to the STEPS survey in 2017, average daily salt intake was 8.5 g for adults (Omanis and expatriates).\textsuperscript{42} This is higher for men (9.5%) than women (7.4%). Almost a quarter (24.1%) report always or often adding salt or salty sauce to their food before eating or while eating.\textsuperscript{43} Best estimates of sodium intake — based on modelling of survey data — suggest average intakes of 3.78 g per day,\textsuperscript{44} up from 3.37 g in 1990, and almost double the WHO recommended upper limit of 2 g per day.\textsuperscript{45} Available data suggest that saturated fat intakes represent 10% of energy and trans fatty acids at 1.8% of energy intake, on average, are also high. Current subsidies — on palm oil, sugar, rice and wheat — are not aligned with policies to promote healthy diets.

Low intakes of fruits, vegetables and seafood omega-3 fatty acids and high intakes of sodium, trans fats and sugar-sweetened beverages have been reported to be the biggest contributors to cardiometabolic deaths in Oman.\textsuperscript{46} Such factors may also be contributing to undernutrition, low levels of dietary diversity and micronutrient deficiencies.

The nutrition transition in Oman has also seen a shift to more sedentary lifestyles. Over a third (38.6%) of the adult population is insufficiently physically active according to the 2017 STEPS survey (this rises to 41.6% among Omani nationals). Prevalence of physical inactivity is higher among adult women (48.5%) than men (29.6%) (Omani nationals and overseas national combined). More than three-quarters of the population (77%) does not engage in any vigorous activity.

\textsuperscript{38}Al-Lawati JA, Panduranga P, Al-Shaikh HA; Morsi M; Mohsin N; Khandekar RB; Al-Lawati HJ; Bayoumi R. Epidemiology of Diabetes Mellitus in Oman: Results from two decades of research. Sultan Qaboos Univ Med J 2015;15:e226-233.
\textsuperscript{39}Sultanate of Oman, Ministry of Health. Oman STEPS survey 2017: Factsheet Omani and Non-Omani 18+.
\textsuperscript{42}Sultanate of Oman, Ministry of Health. Oman STEPS survey 2017: Factsheet Omani and Non-Omani 18+.
\textsuperscript{43}Sultanate of Oman, Ministry of Health. Oman STEPS survey 2017: Factsheet Omani and Non-Omani 18+.
\textsuperscript{45}Guidelines for sodium and potassium intakes. WHO. Ref.
Conclusions

The major dietary and nutritional indicators are summarized in Table 2. In summary, stunting (11.4%) and wasting (9.3%) in Oman remain stubbornly high. In addition, the ONNS estimates that nearly 60% of non-pregnant women 15-49 years of age are overweight or obese and that it is a growing problem for children under 5 years of age. The prevalence rates of anemia in Omani children and women are similar and denote a moderate public health problem in both groups according to the WHO thresholds. The prevalence of anemia in children less than 5 years of age has decreased significantly since 2009. Nationally, vitamin A deficiency is almost non-existent in women and considered a mild public health problem in children. Vitamin D deficiency in children and women is low compared to other countries in the region. The prevalence of exclusive breastfeeding is very poor in children less than 6 months of age and there is a need to improve the complementary feeding for children less than 2 years of age.

Table 2. Summary of major dietary and nutritional indicators (including NCD risk factors) in Oman

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Result</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infants and young children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early initiation of breastfeeding (&lt;24 months)</td>
<td>82.0%</td>
<td>ONNS, 2017</td>
</tr>
<tr>
<td>Exclusive breastfeeding (&lt;6 months)</td>
<td>23.2%</td>
<td></td>
</tr>
<tr>
<td>Stunting (&lt;5 years)</td>
<td>11.4%</td>
<td></td>
</tr>
<tr>
<td>Wasting (&lt;5 years)</td>
<td>9.3%</td>
<td></td>
</tr>
<tr>
<td>Overweight or obese (&lt;5 years)</td>
<td>4.2%</td>
<td></td>
</tr>
<tr>
<td>Underweight (&lt;5 years)</td>
<td>11.2%</td>
<td></td>
</tr>
<tr>
<td>Anemia (6-59 months)</td>
<td>23.8%</td>
<td></td>
</tr>
<tr>
<td>Iron deficiency (6-59 months)</td>
<td>10.2%</td>
<td></td>
</tr>
<tr>
<td>Iron deficiency anemia (6-59 months)</td>
<td>2.9%</td>
<td></td>
</tr>
<tr>
<td>Women of reproductive age (non-pregnant, Omani nationals)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underweight (low BMI)</td>
<td>9.1%</td>
<td>ONNS, 2017</td>
</tr>
<tr>
<td>Overweight or obese</td>
<td>59.2%</td>
<td></td>
</tr>
<tr>
<td>Anemia</td>
<td>27.8%</td>
<td></td>
</tr>
<tr>
<td>Iron deficiency</td>
<td>24.8%</td>
<td></td>
</tr>
<tr>
<td>Iron deficiency anemia</td>
<td>13.3%</td>
<td></td>
</tr>
<tr>
<td>Vitamin A deficiency</td>
<td>0.2%</td>
<td></td>
</tr>
<tr>
<td>Folate deficiency</td>
<td>11.6%</td>
<td></td>
</tr>
<tr>
<td>Vitamin D deficiency (insufficiency)</td>
<td>16.2% (41.5%)</td>
<td></td>
</tr>
<tr>
<td>Pregnant women</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meets minimum dietary diversity</td>
<td>90.3%</td>
<td>ONNS, 2017</td>
</tr>
<tr>
<td>Undernutrition (low MUAC)</td>
<td>5.0%</td>
<td></td>
</tr>
<tr>
<td>Anaemia</td>
<td>29.3%</td>
<td></td>
</tr>
<tr>
<td>Adult men (18+, Omani and overseas nationals)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overweight (BMI&gt;25 - &lt;30 kg/m²)</td>
<td>40.1%</td>
<td>STEPS survey, 2017</td>
</tr>
<tr>
<td>Obese (BMI &gt;30 kg/m²)</td>
<td>23.2%</td>
<td></td>
</tr>
<tr>
<td>Adult women (18+, Omani and overseas nationals)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overweight (BMI&gt;25 - &lt;30 kg/m²)</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Obese (BMI &gt;30 kg/m²)</td>
<td>39.3%</td>
<td></td>
</tr>
</tbody>
</table>

A number of recommendations were made as a result of the findings of the nutrition survey in 2017 (which was particularly focused on women and children):
• Reduce the prevalence of overweight and obesity in adult women.
• Reduce the prevalence of folate and vitamin B12 deficiency in women of reproductive age.
• Reduce the prevalence of stunting and wasting in young children.
• Reduce vitamin D deficiencies in women of reproductive age and children.
• Measure fortification compliance of flour, bread and oil.
• Prevent further increase in the prevalence of overweight and obesity in children.

Furthermore, the findings of the STEPWISE survey relating to prevalence of NCDs and their risk factors reinforce the need to step up efforts to prevent overweight and obesity among the population as a whole. There is also an urgent need to address diet-related risk factors associated with NCDs, such as diabetes, cardiovascular disease and cancer, which place a heavy burden on the health of the Sultanate’s population. Promotion of healthy diets and efforts to reduce intakes of salt/sodium, unhealthy fats (trans and saturated fatty acids) and free sugars while increasing consumption of fruits and vegetables are needed.

Given the multiple burdens of malnutrition facing Oman, and that malnutrition is transferred from one generation to the next, there is a need for a life-course approach to improve nutrition for people in the Sultanate now and for future generations. Furthermore, a broad multisectoral approach, involving the whole of society, is required and holistic approach and transformation of Oman’s food systems, so that they can provide healthy, sustainable diets for all, has also recently been highlighted.47

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47 Ref Food Systems Report
Action taken to improve nutrition in Oman

Oman has been commended for its significant progress on the health-related Millennium Development Goals and its efforts to improve food security and nutrition in recent decades.\(^{48}\) Food security has been included as one of the priorities of the national agenda, and, by boosting agricultural productivity, the availability of and access to food was increased. Food security has been prioritized in national health policy.\(^{49}\) The government has implemented various programmes to combat malnutrition.

Food-based dietary guidelines
The Omani Guide to Healthy Eating, published in 2009, provides dietary guidelines for children over 2 years, adolescents, adults and older people. It is aimed at health professionals, as well as teachers and other educators.

Infant and young child nutrition programmes
Promotion of optimal infant and young child feeding has been integral to the Ministry of Health’s efforts, including through the 5-year health plan 2011-2015 and the Infant and Young Child Feeding Policy and Strategy 2009-2013.

A variety of policies have been implemented to promote, support and protect breastfeeding. The marketing of infant formula and other breast-milk substitutes is covered by the Omani Code for Marketing of Breast-milk Substitutes, although monitoring and enforcement of the Code need to be strengthened. To support breastfeeding in health facilities, the Baby-Friendly Hospital Initiative (BFHI) was initiated in the early 1990s, and the Nutrition Department is undertaking efforts to revitalize the initiative, including preparation of national assessors and developing plans to include primary, secondary and non-governmental health institutions. Hospitals in the country are preparing for assessment. Employment law provides for 50 days of fully-paid maternity leave for women.

A study on barriers to exclusive breastfeeding, appropriate complementary feeding frequency for children 6-23 months and taking iron supplements between the fourth and ninth month of pregnancy was conducted in March 2019 by the Ministry of Health with support from UNICEF. The study recommended five programme approaches:

1. Integrating the results of the study into any national behaviour change campaign
2. Conducting further research of reaching men (to increase support for breastfeeding)
3. Accrediting and expanding the Baby Friendly Hospital Initiative
4. Piloting the Care Group Approach in two governorates (using community-based volunteer health educators to promote behaviour change)
5. Inclusion of Infant and Young Child Feeding in the Early Childhood Development Work

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\(^{48}\) Reference WHO award to Oman
\(^{49}\) Oman Vision 2040
School food
Food served in school canteens is guided by mandatory nutrition standards, while soft drinks and foods high in fat, sugars and/or salt (HFSS) are not permitted in schools. School feeding programmes have been implemented in some governorates and some pilot projects involving school gardens are underway.

Reducing intake of saturated fats, sugars, salt and trans fats
A salt reduction strategy was initiated in 2014 and in addition to voluntary efforts by bakeries to reduce salt by 10% and later 20%. In December 2019 a new Omani standard for bread was issued, establishing maximum levels for salt in bread. In relation to trans fats, the Gulf Standards Organization (GSO) standard for Gulf Cooperation Council (GCC) countries has been introduced but is not mandatory. The Ministry of Commerce is now working on plans to ban the use, importation and marketing of trans fats. Reformulation efforts have also targeted reductions in sugar content and levels of fat in ice cream. Taxes have been introduced on soft drinks (50%), energy drinks (100%) and fast food (5%) as of June 2019.

Marketing of foods high in fat, sugar or salt (HFSS foods)
A rapid assessment of marketing of HFSS foods to children was conducted in 2015, and a draft policy to regulate such marketing is under consideration.

Food labelling regulations
Under Omani law, food labels on pre-packaged foods must carry nutrient declarations covering carbohydrates, fats, protein, fibre and energy. Simplified front-of-pack nutrition labelling, such as the traffic lights labels under consideration by the GSO, have not been implemented.

Screening and surveillance
Health facilities carry out nutrition screening as part of well-child checks, and Oman’s schools routinely collect nutrition and health surveillance data on school-children. In addition, there is an NCD surveillance programme for adults over 40 years.

Fortification
Fortification programmes in Oman, designed to improve micronutrient status, have been introduced and appear to be well implemented, although data on micronutrient levels of foods and consumption of fortified foods are scarce.

Mandatory wheat flour fortification with iron and folate has been in place since 1996 (and plans are in place to extend this to include vitamin D and vitamin B12). It is now estimated to cover more than 75% of Oman’s population and has been associated with a reduction in spina bifida rates\textsuperscript{50} and reduced prevalence of iron deficiency among women living in households in which more fortified flour was consumed.\textsuperscript{51} Data from the latest nutrition survey suggest that average consumption of wheat flour (whether purchased as flour or as bread) is 97 g per day.

\textsuperscript{50} Alasfoor D, Mohammed EJ EMK. Spina bifida and birth outcome before and after fortification of flour with iron and folic acid in Oman. East Mediterr Heal J 2010;16:533-538
Fortification of edible oil and margarine with vitamins A is mandatory. The ONNS found that 95% households had cooking oil labelled as fortified at the time of the survey. Salt iodization is implemented in Oman, and, according to the 2017 nutrition survey, almost three-quarters of women (72%) report always using iodized salt.

Proposed modifications to the fortification programme have been submitted for approval, including adding vitamins D and B12 to flour and vitamins A and D to dairy products.

**Supplementation programmes**
Vitamin A supplements are given to children and women after pregnancy. Pregnant women are provided with iron and folic acid supplements when they attend their antenatal care clinic. However, only 67% of pregnant women take iron supplements nationally.

**Multisectoral planning for nutrition: Partners for Public Nutrition**
In 2014, as part of the preparation of a *Strategic Study on Nutrition 2014-2050*, a multisectoral workshop, Partners for Public Nutrition, was held in Muscat to identify the potential roles for different stakeholders in Oman. The workshop also sought to identify the specific benefits for each of these stakeholders (win-win approach) from their contribution to implementation of a nutrition strategy.

**Food system project**
As part of a holistic approach, a project has been developed to improve the nutrition and food security situation in Oman using a food system approach. Fruits, vegetables and seafood were identified as primary target food groups, for which consumption is to be increased. A mapping of the food supply recommended that the total amount of fruits and vegetables available for consumption should approximately double, while the intake of omega-3 fatty acids needs to quadruple. Consultation with a wide variety of stakeholders in December 2017 helped identify the challenges — such as heavy dependence on imported food, shortages of water and arable land and a short growing season caused by high temperatures — as well as the opportunities and potential interventions within the food system.

The project identifies specific entry points within the food system — including in relation to the food supply, food environment and consumer behaviour — to potentially influence consumption of fruits, vegetables, fish and foods high in fat, sugar or salt. Elements of the planned project include:

- Diversification and increasing the production of vegetables and fish using innovative and sustainable production techniques (integrated farm model, school gardens project, home garden programme);
- Improving storage, processing and distribution to minimize waste and maintain product quality.
- Improving food environments by (a) linking production of vegetables and fish to the school feeding programme and school food procurement, (b) linking fruit production to school feeding and procurement, (c) linking the production of fruits, vegetables and fish to public institutions’ food procurement, (d) promoting fruits, vegetables and fish as healthy local products and (e) enhancing product placement of these foods.
- Implementing policies to reduce intakes of foods high in fat, sugar and salt:
o Develop nutritional standards and define benchmarks for reformulation (salt, sugar, saturated fat and total fat)
o Establish proper monitoring and enforcement mechanisms for existing and new standards (including implementation of the existing GSO trans fatty acid standard for processed foods)
o Expand taxation to all sugar-sweetened beverages (at 100%) and increase tax on fast food to at least 50%
o Remove subsidies
o Regulate the marketing of HFSS foods and beverages to children
o Adopt consumer-friendly labelling systems (e.g. the traffic light labelling system, currently under consideration by the Gulf Standards Organization).

- Raising awareness of the importance of fruits, vegetables and fish as part of healthy diets, and healthy diets in general (household, school, community, media).

Given the wide-reaching scope of the project, a national multisectoral committee is proposed to ensure effective coordination. The project is also in line with Oman Vision 2040, which highlights agriculture as being potentially important for the sustainable diversification of the economy.
Vision and objectives of the nutrition strategy 2020 – 2030

Vision
The overall detailed vision for Oman’s future in the coming decades is set out in Oman Vision 2040, and this includes “a healthy society, free of health risks and hazards, where ‘health is the responsibility of all’”.

Specifically in relation to food security and nutrition, a vision for 2050 has been proposed:

An equitable, environmentally sustainable and increasingly self-sufficient Oman, with a population physically fit and well-nourished at all ages committed to an active lifestyle and balanced diet that secures women’s nutrition throughout the life-cycle, making it a regional model of health and well being.

More specifically, to guide the implementation of the national strategy on nutrition over the next 10 years — and in line with the agreed Regional Nutrition Strategy — the following vision is proposed:

Oman has strengthened action on nutrition to achieve food security, end all forms of malnutrition and improve nutrition throughout the life course by 2030.

The overall and specific objectives are set out in Box 1. Annex I presents a series of targets for these objectives.

Box 1. Overall and specific objectives, 2020 - 2030

Overall objective
The overall objective of the strategy over the next 10 years is to ensure universal access to healthy and sustainable diets, and implement effective nutrition actions, in order to:
- improve nutrition throughout the life course for mothers, infants, children, adolescents and older people, and
- prevent undernutrition, overweight, obesity and diet-related NCDs
- support and protect nutrition in emergency situations.

Specific objectives
The specific objectives for the Oman national nutrition strategy 2020 – 2030 are to:
- Reduce, by 2030, the number of children under-5 who are stunted to < 6% (Baseline 2017: 11.4%)
- Reduce and maintain childhood wasting, by 2030, to less than 3% (Baseline 2017: 9.3%)
- Reduce, by 2030, the prevalence of overweight in children under 5 years to not more than 3% (Baseline 2017: 4.2%)
- Reduce, by 2030, low birth weight to not more than 6.5% (Baseline 2018: 11.6% (UNICEF))
Proposed National Nutrition Strategy 2020-2030 for the Sultanate of Oman

Box 2. Underlying principles and strategic approaches

The nutrition strategy is underlined by some important principles enshrined in the following key approaches:

- **A life-course approach:** Given that some forms of malnutrition are clearly transferred across generations in Oman, it is vital that the strategy is underpinned by a life-course approach. It focuses on the critical points to improve nutrition, including the nutritional health of women before, during and after pregnancy, optimal nutrition during early life, adoption of healthy eating patterns throughout childhood and adolescence, as well as good nutrition for healthy ageing.

Some longer-term goals for nutrition, to be achieved by 2050, were set out in the 2014 Strategic Study. These include:

1. Reduce the prevalence of overweight and obesity to < 5% of the population through exercise and a balanced diet of fresh vegetables and fruits.
2. Reduce levels of stunting and low birth weight to < 3% of the population through improvement of all women’s health and nutrition before, during and after pregnancy.
3. Raise exclusive breastfeeding rates at 6 months to >90% to improve nutritional and cognitive potential of children.
4. Reduce anemia and all micronutrient deficiencies through consumption of appropriate micronutrient rich foods.
5. Increase diet of non-obesogenic fresh fruits and vegetables by reducing importation of cardiotoxic processed, high-density foods to <30% of all intake through cooperative agreements with regional suppliers, and increased regulation and import tariffs on non-healthful foods.
6. Increase local food self-sufficiency and dietary diversity through organically grown vegetables and fruits by introducing high-tech (i.e., nutrient and water efficient) rural and urban gardens in 80% of all households.

The objectives for 2020-2030 set out in this strategy, and the framework for action in Annex II will contribute to achievement of the longer-term 2050 goals set out above.
- Integrated multisectoral and multistakeholder action: Continuing Oman’s efforts to involve a wide-range of Ministries, official bodies, academia and other stakeholders in improving nutrition, the strategy embodies a multisectoral approach involving the whole of society.

- Addressing determinants of health: The data show that some forms of malnutrition in Oman vary between governorates and by level of household income. Recognizing the social, economic and environmental determinants of different forms of malnutrition, the Strategy pays careful attention to the needs of the most vulnerable groups and poverty reduction is also integral to the proposed food systems approach.

- Anchored in a child rights approach: As a party to the Convention on the Rights of the Child, Oman’s efforts to improve infant and young child nutrition seek to contribute to realization of children’s rights.
Key areas for action

In line with the UN Decade of Action on Nutrition and the regional strategy on nutrition, the framework for action (Annex II) for achieving these objectives is focused around six key areas of action:

- **Sustainable, resilient food systems for healthy diets:** It is recognized that reform of Oman’s food systems is needed to ensure that nutritious, safe, affordable and sustainable diets are available for everyone. This is an essential area of action for reducing the persistent rates of stunting and wasting, as well as prevention of overweight and obesity. Important elements include strengthening and diversifying local food supply chains, reducing food loss and waste and policy measures to reduce intakes of highly-processed foods containing trans fats or high in saturated fats, sugars and salt. In addition, food safety is critical for food security and strong regulatory frameworks and food control systems need to underpin the food systems.

- **Aligned health systems providing universal coverage of essential nutrition actions:** Strong and resilient health systems, which provide access to essential nutrition actions for all those in need, without discrimination, are important for delivering good nutrition. Oman’s health system is guided by the national Health Vision 2050 and the system is recognized as being efficient. Actions which directly or indirectly contribute to improved nutrition include, for example, support for breastfeeding, nutrition counselling, management of acute malnutrition, micronutrient supplementation, growth monitoring and screening, diet therapy for obesity, treatment and control of infectious diseases and reproductive health services. Outside the health system there are also opportunities for important nutrition-related interventions, such as provision of supplements and periodic deworming of school-age children.

- **Social protection and nutrition education:** Measures to protect the most vulnerable members of society — through, for example, social insurance — are important, and such measures should support nutrition objectives. Education to improve understanding of healthy diets and nutrition — including through, for example, the Omani Guide to Healthy Eating and mass media campaigns — is an important element of any nutrition strategy, although such efforts need to be accompanied by changes to food environments to bring about behaviour change. In addition, improvements to Oman’s regulation of labelling, claims and marketing is needed to ensure that consumers have clear information about the nutritional quality of foods and that children are protected from marketing for HFSS foods.

- **Trade and investment for improved nutrition:** As a country heavily dependent on food imports, trade is an important factor influencing food security and nutrition in Oman. While efforts are underway to increase and diversify local production of healthy, nutritious foods, there may also be a role for trade policies in improving the food supply. The strong economic case for government investment in improving

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54 Oman country profile, 2015. WHO.
nutrition is clear and offers the opportunity of a healthy return on investment for individuals, society and the Omani economy.

- **Safe and supportive environments for nutrition at all ages**: Oman has an established track record of efforts to create healthy food environments in, for example, schools, measures to protect, promote and supporting breastfeeding and fortification and supplementation initiatives to prevent micronutrient deficiencies. Such efforts need now to be reinforced, and further action to increase exclusive breastfeeding rates, prevent overweight and obesity, reduce children’s exposure to marketing for unhealthy foods and further reduce micronutrient deficiencies.

- **Strengthened nutrition governance and accountability**: Improving nutrition requires multisectoral and multistakeholder efforts, involving the whole of government and the whole of society. Strong government leadership and robust nutrition governance — based on multisectoral collaboration and coordination — are at the heart of this nutrition strategy. Another important element is strong nutrition information systems to generate reliable data and statistics to inform nutrition policy and interventions.

Annex II shows a framework for action for implementation of the new nutrition strategy across these six key areas for action. It summarizes the current situation and ongoing actions, and proposes specific new actions as well as indicating the main stakeholders responsible for implementation. The initial phase of implementation of the Strategy will require development of a step-by-step plan of action in each of these areas.

**Monitoring and evaluation**

It will be important to monitor and evaluate implementation of this strategy. Progress towards the SMART targets outlined in Annex II, relating to the specific objectives, will be the primary indicators to monitor.

In addition, the preliminary phase of implementation will include definition of specific indicators, and baseline, relating to the six key areas of action, as set out in the Framework for Action.
### Annex I: Specific objectives: indicators, baseline and targets

<table>
<thead>
<tr>
<th>Specific objectives: By 2030, to</th>
<th>Indicator</th>
<th>Current status (year)</th>
<th>Additional or Interim targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Reduce, by 2030, the number of children under-5 who are stunted to &lt; 6%</td>
<td>Percentage of children 0–59 months who have height-for-age two standard deviations or more below the WHO child growth standards median (moderate stunting = &lt;-2 and &lt;-3 SD, severe stunting = below -3 SD)</td>
<td>11.4 % (2017, ONNS)</td>
<td>Reduce prevalence of stunting to &lt;3% by 2050 (Strategic study)</td>
</tr>
<tr>
<td>- Reduce and maintain childhood wasting, by 2030, to less than 3%</td>
<td>Percentage of children 0–59 months have height-for-age two standard deviations or more below the WHO Child growth standards median</td>
<td>9.3% (2017, ONNS)</td>
<td>Reduce prevalence of wasting to less than 5%</td>
</tr>
<tr>
<td>- Reduce, by 2030, the prevalence of overweight in children under 5 years to not more than 3%</td>
<td>Percentage of children 0–59 months with weight-for-height two standard deviations or more above the WHO child growth standards median</td>
<td>4.2% (2017, ONNS)</td>
<td>Reduce prevalence of overweight to less than 3%</td>
</tr>
<tr>
<td>- Reduce, by 2030, low birth weight to not more than 6.5%</td>
<td>Percentage of live births under 2500 g at birth</td>
<td>11.6% (Annual Health statistics 2018)</td>
<td>Reduce prevalence of low birth weight to &lt;3% by 2050 (Strategic study)</td>
</tr>
<tr>
<td>- Reduce, by 2030, anaemia in women of reproductive age by 30% from its baseline to not more than 20%</td>
<td>Percentage of women 15-49 years with a haemoglobin concentration of &lt;120 g/L for non-pregnant women and lactating women and less than 110g/L for pregnant women (adjusted for altitude and smoking)</td>
<td>27.8% (2017, ONNS)</td>
<td>Reduce prevalence of anaemia in women of reproductive age to less than 20%</td>
</tr>
<tr>
<td>- Improve, by 2030, the rate of exclusive breastfeeding in the first six months up to at least 50%</td>
<td>Percentage of infants 0–5 months who are exclusively breastfed on breast milk</td>
<td>Baseline 2017: 23.2% &lt; 6 months of age</td>
<td>Increase the rate of exclusive breastfeeding in the first six months to 50%</td>
</tr>
</tbody>
</table>
## Proposed National Nutrition Strategy 2020-2030 for the Sultanate of Oman

<table>
<thead>
<tr>
<th>Objective</th>
<th>Key Indicator</th>
<th>Baseline 2017</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Halt the rise in diabetes and obesity in adults by 2030</strong></td>
<td><strong>Key indicator:</strong> Age-standardized prevalence of overweight and obesity in persons aged 18+ defined as body mass index of &gt;25. Age-standardized prevalence of raised blood glucose/diabetes among persons aged 18+ years (defined as fasting plasma glucose concentration ≥ 7.0 mmol/l (126 mg/dl), on medication for raised blood glucose or with a history of diagnosis for diabetes).</td>
<td>Baseline 2017: Overweight and obesity in adults: 66.2%; Diabetes prevalence: 14.5%</td>
<td>Reduce the prevalence of overweight and diabetes for adults to less than 60% and 12%, respectively.</td>
</tr>
<tr>
<td><strong>Halt the rise in overweight in school-age children and adolescents 5-18 years old by 2030</strong></td>
<td><strong>Prevalence of overweight in school-age children and adolescents is defined as the percentage of children aged 5-19 years with sex-specific BMI-for-age above +1 SD from the WHO 2007 reference median.</strong></td>
<td>Baseline to be determined</td>
<td>Reduce the prevalence of overweight and obesity to &lt;5% of the population by 2050 (Strategic study)</td>
</tr>
<tr>
<td><strong>Reduce mean population intake of salt/sodium by 30% by 2030</strong></td>
<td><strong>Age-standardized mean population intake of salt (sodium chloride)</strong></td>
<td>Baseline: 8.5 g per day, 2017</td>
<td></td>
</tr>
<tr>
<td><strong>Virtually eliminate industrially-produced trans fats from the food supply by 2023</strong></td>
<td><strong>Specific measure to ban or virtually eliminate industrial trans fatty acids in place</strong></td>
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<tr>
<th>Area of intervention</th>
<th>Current status and actions</th>
<th>Proposed action</th>
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<tbody>
<tr>
<td><strong>Key area of Action: Sustainable, resilient food systems for healthy diets</strong></td>
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</table>
| Reform food systems | ✓ Food systems project has been developed to work towards resilient sustainable domestic food production to increase supply of nutritious foods, increase awareness and demand of these foods, accompanied by a supportive policy framework | - Implementation of the food systems project to increase local food self-sufficiency and dietary diversity (with a particular focus on increasing availability/consumption of fruits, vegetables and fish and reducing consumption of HFSS foods) (*Ministries of Agriculture, Municipalities and Water Resources, Commerce, Consumer Protection, Education*)  
- WHO/FAO/UNICEF to continue to provide technical support to the MOH, the coordinator of the food system project and support key stakeholders to initiate the project implementation and provide the technical tools needed. |
| Reduce food loss and waste | ✓ No food waste reduction programme in place — on average, households waste about a third of all food | - Reduce food waste relating to fresh fruit, vegetables and fish by improving post-harvest management, storage and distribution by implementing the planned food systems project |
| Reduce intake of saturated fats, sugars, salt and trans fats | ✓ **Reformulation/Standards:** Mandatory maximum level of salt in bread (1%); Reformulation programme to reduce trans fats (GSO standard for GCC countries is not yet mandatory); Voluntary sugar reduction programme;  
✓ **Taxes:** 50% on soft drinks in place; 100% tax on energy drinks; 5% tax on fast foods  
✓ **Subsidies:** There are currently subsidies on palm oil, sugar, rice and wheat | - Release and implement a Ministerial Decree to ban use, importation and marketing of trans fat  
- Implement the existing GSO trans fats standard to ban the use of industrially-produced trans fats in locally produced and imported foods on a **mandatory basis** (*MoH/ Ministry of Commerce and Industry/Department of Standards*)  
- Implement monitoring of trans fat levels in locally produced and imported food (*MoH and Consumer Protection Authority*)  
- Develop standards related to the levels of salt, fat, saturated fat and sugar in processed foods, targeting foods that are main contributors (*MoH/ Min of Commerce and Industry/Department of Standards*)  
✓ Encourage, through a government-led programme, reformulation of processed foods to limit the levels of salt, saturated fats and sugars, including by developing incentive programmes and defining benchmark levels (*MoH, Ministry of Commerce and Industry*) e.g Reformulation to reduce fat levels in ice creams  
- Monitor levels of salt, saturated fat and sugars in food products to assess the impact of reformulation programme (*Public Authority for Consumer Protection*) |
### Key area of action: Aligned health systems providing universal coverage of key nutrition actions

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<tr>
<th>Improve food safety and address antimicrobial resistance</th>
<th>Planned food systems project includes a component on improving post-harvest management, storage and distribution of fresh produce</th>
<th>Implement the planned food systems project</th>
</tr>
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<tbody>
<tr>
<td><strong>Build strong and resilient health systems</strong></td>
<td><em>Oman Vision 2040</em> sets out plan for an inclusive and equitable healthcare system</td>
<td>- Enforce good manufacturing practices for storage, conservation, transport, processing and packaging (<em>MoH/MAF/Regional Municipalities and Water Resources</em>)</td>
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<tr>
<td><strong>Reduce stunting and wasting among children under 5</strong></td>
<td>✓ See ongoing efforts under promoting, supporting and protecting breastfeeding</td>
<td>- Conduct an in-depth assessment of causes of stunting and wasting, examining antenatal factors, dietary habits, morbidity, risk factors and child care practices (among normal weight, stunted and wasted children). (<em>MoH</em>)</td>
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<td>✓ Previous strategies on infant and young child feeding have been implemented</td>
<td>- Focus health and nutrition programmes primarily on pre-pregnant, prenatal and lactating women (<em>MoH</em>)</td>
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<td>✓ Infant and young child feeding is included in the Integrated Early Child Development Work by Unicef</td>
<td>- Adopt policies and mobilize resources to improve coverage of treatment for wasting, using the community-based management of acute malnutrition approach (<em>MoH</em>)</td>
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<tr>
<th>Proposed National Nutrition Strategy 2020-2030 for the Sultanate of Oman</th>
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</table>
| **Integrate health service policies and programmes**  
✓ **Integration of essential screening and treatments of malnutrition through the primary healthcare system**  
✓ **Omani Special initiative on NCD prevention and control (includes screening >40 years) since 2006**  
✓ **Nutrition counselling for pregnant women and mothers (including healthy weight gain and prevention of obesity/overweight).**  
- Ensuring provision of standard equipment  
- Improving monitoring  
- Capacity building for health service policies and programmes |
| **Expand nutrition interventions related to health services**  
✓ **MN Supplementation:** Vitamin A suppl. for under 2s (at 9 and 18 months) and post-partum women; Iron/folic acid for pregnant women since 1990  
- To reach pre-pregnant women, collaborate with other ministries who reach adolescent girls and women in the community  
- Implement measures to increase compliance of pregnant ladies to take iron tablet |
| **Key area for action: Social protection and nutrition education**  
**Improve nutrition education and information for behaviour change**  
✓ **Food-based dietary guidelines:** Omani Guide to Healthy Eating launched in 2009 covers children >2, adolescents, adults and older people.  
✓ **Nutrition labelling:** Mandatory nutrient declaration (carbohydrates, fats, protein, fibre, energy) for pre-packaged foods (GSO 9/13)  
✓ **Nutrition education in schools:** Some nutrition topics are included in school curricula  
- Review Oman Guide to Healthy Eating to incorporate sustainability messages (MoH)  
- Adopt simplified front-of-pack labelling (e.g. traffic lights under consideration by GSO)  
- Conduct national media campaigns to increase consumption of healthy diets (*Ministry of Information, Public Authority for Consumer Protection/MoH and as part of food systems project*)  
- Conduct national media campaigns to raise awareness of the new front-of-pack labelling scheme, once implemented (*Ministry of Information, Public Authority for Consumer Protection/MoH and as part of food systems project*)  
- Expand learning on nutrition within school curricula (*Ministry of Education*) |
| **Improve nutrition capacity**  
- **Nutrition education for health workers, teachers etc:** The Omani Guide to Healthy Eating is aimed at  
- Complete an assessment of capacity in public nutrition at four levels (individual, community, workplace, organization, system) |
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<tr>
<th>Safe and supportive environment for nutrition at all ages</th>
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</table>
| **Food environments for healthy diets** | ✓ **Food in schools**: Guidelines for school canteens issued by Ministry of Education and the Nutrition Department, updated in 2013, and ban on soft drinks and HFSS foods in schools  
✓ **Marketing to children**: Rapid assessment conducted in 2015-2016 and a draft policy on regulating marketing of foods and non-alcoholic beverages to children is under consideration. | - Implement the food systems project to link producers of fruits, vegetables and fish to school feeding programmes, school canteen procurement and school gardens (MAF, MoE, Ministry of Social Development)  
- Establish a comprehensive regulatory framework relating to marketing of HFSS foods and beverages to children, using the WHO EMRO nutrient profile model to define foods for which marketing should be restricted (Public Authority for Consumer Protection/MoH/Ministry of Legal Affairs/Ministry of Information)  
- Establish systematic monitoring of marketing of HFSS foods to children and of implementation of marketing restrictions and their impact (Public Authority for Consumer Protection)  
- Introduce nutrition standards for food in public institutions, including prohibiting sugar-sweetened beverages and HFSS foods (e.g., hospitals, child care facilities, ...) |

| Increase social protection | - **Social safety net**: Oman Vision 2040 sets the objectives of a society enjoying insurance coverage through an effective, sustainable and fair social safety network and integrated social protection targeting the most vulnerable groups | - Ensure that social protection policies are well aligned with nutrition strategy and objectives.  
- Ensure that the subsidies on food shift from unhealthy foods, such as sugar and palm oil, to healthy products such fruits and vegetables and fish. |

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<tr>
<th>Key area for action: Trade and investment for improved nutrition</th>
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<td><strong>Enhanced trade and investment in improved nutrition</strong></td>
<td>- Under NCD higher committee, a detailed funding requirement for all public nutrition interventions is being developed</td>
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<p>| Explore options in international trade for nutrition | - Food systems project seeks to increase domestic production of vegetables and fish | - Conduct a situation analysis to determine the sources of fats/oils, sugars and salt in the diet and explore the options for using standards, legal instruments and trade policy to improve the national and/or local food supply |</p>
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<tr>
<td><strong>Food in other public institutions:</strong> Introduction of nutrition standards for food in other public institutions is under consideration.</td>
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<td>✓</td>
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<td>Protect, promote and support breastfeeding</td>
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<td>Reduce overweight and obesity</td>
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<td>Reduce anaemia in women of reproductive age and other actions relating to micronutrient status</td>
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**Supplementation**: Iron/folic acid supplementation for (pregnant) women since 1990  
- Review the findings of the study analysing barriers that prevent pregnant women taking iron/folic acid supplements and implement the recommendations \((\text{MoH})\)

**Improve water, sanitation and hygiene**  
- Government working to expand coverage of piped water and adequate sanitation to all households

**Key area for action 6: Strengthened governance and accountability for nutrition**

**Strengthen/develop governance and coordination mechanisms**  
- A multi-sectoral national taskforce for nutrition is in place with Director-level membership from different Ministries.  
- Establish a National Board for Nutrition (\(\text{MoH}\) leadership), with higher level membership which enforce adoption of political commitment’s for healthy food provision from all stakeholder . It also facilitate conducting research in nutrition .

**Updated national strategy and action plan**  
- National taskforce Committee prepared a Multisectoral National Nutrition action plan.  
- Facilitate the implementation of Nutrition action plan.  
- Provide the financial and logistic support for nutrition interventions

**Adopt health-in-all policies approach/Multisectoral**  
- A multisectoral national taskforce for nutrition is in place;  
- A multi-sectoral NCD committee (with a sub-committee on NCD risk factors) advises on measures to facilitate healthier diets and lifestyles  
- Ensure to integrate nutrition objectives in all related programmes and with all relevance stakeholder .

**Food and nutrition surveillance and M&E of policy implementation/impact**  
- National Nutrition Survey completed in 2017  
- Analysis of barriers to exclusive breastfeeding, complementary feeding and supplementation published in 2019  
- Establishment of a virtual GCC-wide Public Nutrition Database Library that includes (i) cross-regional nutrition status of all populations, (ii) descriptions of ongoing programmes and policies aimed at improving similar public nutrition problems across the region, (iii) available resources for sharing between countries that will impact on implementation of programmes  
- Establish a national (and/or regional) research strategy  
- Improve NMIS through digitized record keeping and anthropometric measurements  
- Conduct a 24-hour urinary sodium assessment to establish a baseline for average sodium intakes  
- KAP study (\(\text{MoH}\))

**Food composition data bases**  
- Develop a national food composition database, according to WHO guidance