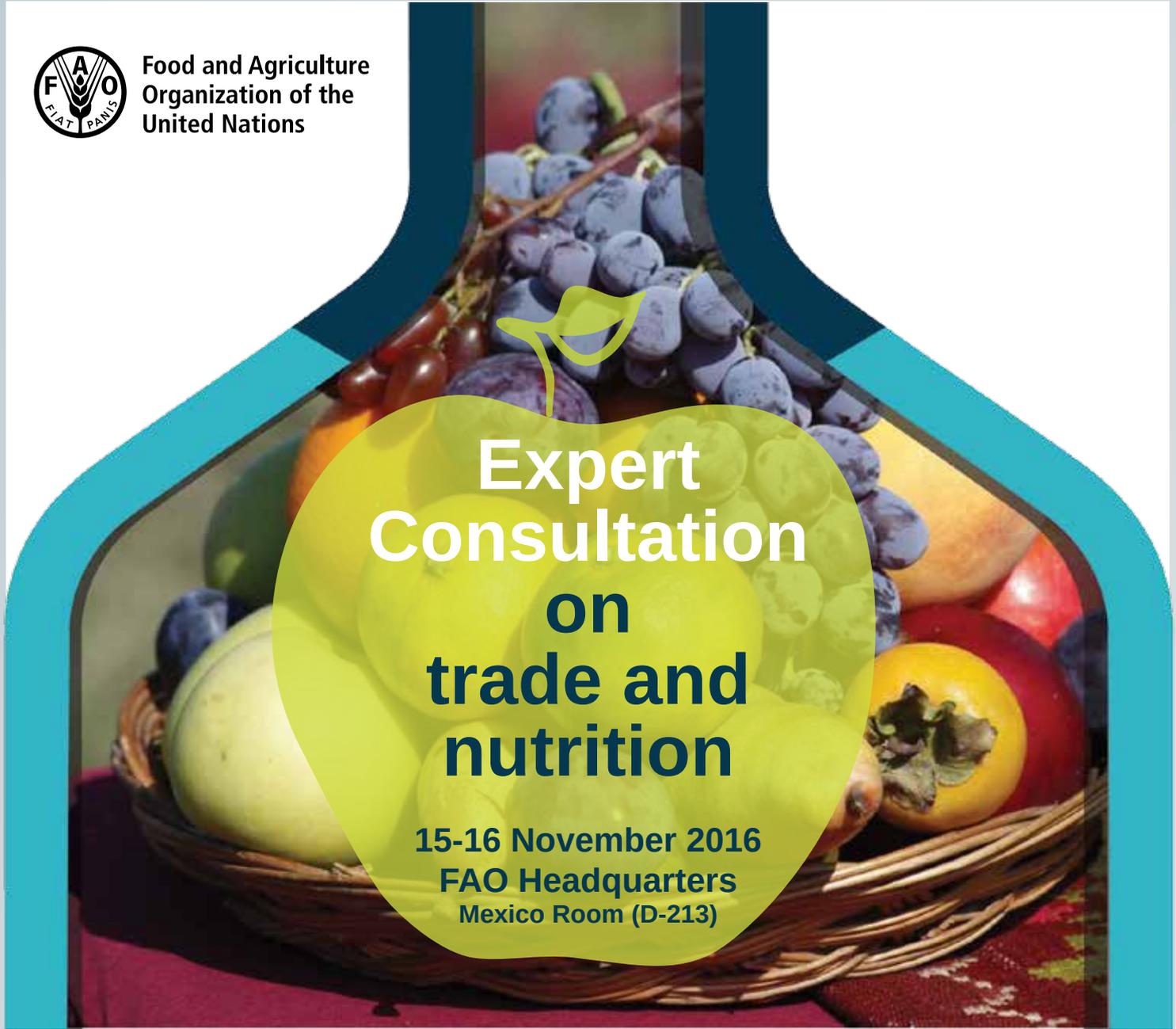




Food and Agriculture
Organization of the
United Nations



Expert Consultation on trade and nutrition

15-16 November 2016
FAO Headquarters
Mexico Room (D-213)

Summary of discussions

1. This report summarises the findings and discussions of an informal expert consultation on trade and nutrition organised by the Trade and Markets Division (EST) of FAO and held 15-16 November 2016 at FAO Headquarters in Rome. The concept note and the agenda giving details of participants and presentations¹ are attached as annexes to this report.

2. Presentations and discussion at the meeting focused on three sets of basic questions:

- i. How have diets evolved in developed and developing countries? Have diets become healthier over time? What are the prospects towards 2050?
- ii. What have been main drivers of changing diets and the “nutrition transition”? What are the impacts of globalisation, transnational companies, urbanisation and market liberalisation? How will these drivers change diets over the decades to come?
- iii. How do agricultural (domestic and trade) policies affect nutrition outcomes of the countries that implement them and their trading partners? What trade and agricultural policy options can generate co-benefits for nutrition? Should trade policies be used to pursue nutritional outcomes or be kept focused on trade policy goals?

¹ The presentations from the meeting can be found at <http://www.fao.org/economic/est/est-events-new/tradenutrition/en/>

3. This report is structured around these three sets of questions. Detailed analysis of the nutritional implications of dietary changes was not an objective of this meeting and was beyond its scope. The main concern was to review the evidence on dietary trends and what drives them and to draw policy conclusions. Nevertheless, the meeting did discuss the definition of a healthy diet as a benchmark against which to assess the desirability of those observed dietary trends.

The evolution of diets

4. The last fifty years have seen significant increases in overall calorie availability globally, accompanied by reductions in the shares of calorie intakes from cereals and roots and tubers and increases in the shares of livestock products, vegetable oils, sugar and processed foods². These shifts are common across all regions and while international differences in the composition of food consumption persist, there does appear to have been a global convergence on so-called “western diets”. Regional differences partly reflect income differences with change being more limited in high and low income countries and more pronounced in middle income countries. Projections to 2050 suggest that these trends will continue though at a declining rate.

5. Globally, per capita total calorie availability increased by 30 percent from 2193kcal in 1961 to 2903 kcal in 2014-16. In terms of calorie value, the consumption of all food types increased with the exception of starchy roots. However, a shift is apparent in the consumption pattern from staple food to fruits, vegetables, meat and vegetable oils. The share of total calories from vegetable oils increased by 5 percent, the largest increase among food types while the consumption of staple foods decreased by 7 percent (FAO Food Balance Sheets). This process of overall expansion and substitution between food groups away from staples and towards vegetable oils, livestock products and sugar has worked through at different rates across all regions, with even the least developed countries showing major increases in energy intake per capita from vegetable oil, dairy products, meat and sugar. Demand for processed foods follows a similar pattern with rapid growth, particularly among middle- and low-income countries. The apparent trend in consumption of so-called “ultra-processed foods (UPFs)” has also been upward although there is still a need for a more precise definition of UPFs beyond simply products with a high degree of processing with added sugar, salt and fat. More data are needed.

6. While Africa had an increase of 30 percent in overall calorie availability since 1961, change in its composition and hence dietary diversity has been most limited with only small increases in availability of livestock products and fruit

² It is important to note that the analyses of dietary trends are based on food balance sheets, which represent estimates of food availability. While these are useful proximate indicators to monitor general dietary changes at national and regional levels, individual food consumption data is often scarce, especially in low-income countries, making it more difficult to do more refined analyses in dietary trends. Efforts are therefore underway to enhance the collection and use of individual dietary data. (see www.fao.org/nutrition/assessment/food-consumption-database/en/)

and vegetables and continuing reliance on cereals, starchy roots and pulses.

7. Asia experienced the biggest increase in total calorie availability among all regions at 53 percent and the biggest decrease in consumption of staples in favour of increasing consumption of livestock products. Within staples, per capita consumption of rice has decreased while there has been an increase in per capita consumption of wheat and potatoes along with other temperate zone products. The shift in consumption patterns is perhaps most pronounced in East Asia.

8. Compared to other regions, South America has experienced a relatively milder drop in the percentage of calories available from staple foods. Oceania appears to have had only a modest increase in total availability in terms of calories of around 7 percent with little or no change in the proportions accounted for by staples, livestock products and sugar. Only vegetable oil consumption has shown a significant increase.

9. As might be expected, overall calorie availability in Europe and North America showed a more limited change over the last fifty years as did its composition although the substitution of livestock products and vegetable oils for staples is still apparent. Diets in the various EU member states have become more similar with rapid increases in consumption of animal products and sugar towards apparent saturation levels and the gradual disappearance of the Mediterranean Diet. In Europe more generally, there was an obvious decline in total calorie availability in the early 1990s, triggered by the economic and political upheavals in Central and Eastern Europe and the former Soviet Union. Post-transition Russia has seen a shift away from a relatively monotonous and starchy diet with high amounts of fiber towards a more varied including more fruits and vegetables but also higher contents of fat, sugar and animal proteins.

Dietary trends and health

10. The dietary trends towards more calories overall, declining consumption of staples and rising consumption of livestock products, processed foods, saturated fats, sugar and salt have been linked to health risks, obesity and non-communicable diseases (NCDs) including cardiovascular diseases, diabetes and some forms of cancer. The share of fruit and vegetables in calorie availability has generally increased but more slowly and remains less than adequate. There is therefore a justifiable fear that the trends outlined above are moving populations away from rather than towards a healthy diet. Food-related health concerns are not only an issue in high-income countries but also in low- and middle-income countries. In the European Union, diets have become increasingly unhealthy with rapid increases in saturated fats and cholesterol and high overall levels of fats as a share of dietary energy while dietary fibre intakes remain low. In Russia, the prevalence of overweight and obesity increased from 52 percent in 1996 to 60 percent in 2015 while the prevalence of diabetes increased from 3.4 percent to 9.2 percent. The share of deaths from non-communicable diseases increased from 81 percent in 2000

to 86 percent in 2015. Saudi Arabia provides an extreme case of the dietary transition. The significant increase in food availability, both energy and protein, allowed by oil revenues since the 1970s, has put aggregate food availability (DES) well above requirements for an active and healthy life. Overconsumption, further encouraged by generous subsidies and unbalanced diets emphasising meats, fats and fast foods coupled with sedentary lifestyles have led to increased prevalence of obesity and diet-related NCDs now account for 78 percent of deaths. Somewhat paradoxically, as the Africa data show, low-income populations eat more healthy foods and less unhealthy foods. At the same time, most Sub-Saharan African countries fail to achieve threshold levels of 40 percent of carbohydrate RDI, 25-30 percent of protein RDI and 20 percent of fibre RDI and projections to 2050 indicate that they will make little progress in meeting the RDIs of these key macro-nutrients.

11. There are conceptual and practical difficulties in defining a healthy diet as a benchmark against which to assess the nutritional desirability of shifts in dietary patterns. This is so because of the complexity of the issue. Nevertheless, there is sufficient consensus around broad food and nutrient intake recommendations, the most well-known being the WHO/FAO guidelines (for example, free sugars <10% of energy/day; salt < 5g/day; fat <30% energy/day) are perhaps most well known. However, in defining guidelines, there is a need to consider diets and foods rather than simple nutrient intakes. Nutritional impacts of different foods depend not only on the absolute level of intake but also on interactions and correlations between intakes of different foods and on the total energy intake. Dietary diversity is important in itself. Unhealthy diets can exist at overall insufficient levels of intake and at levels of abundance. There are also difficulties in defining what dimensions of "healthy" are relevant. Besides physical health, mental health may also be relevant and indirect health effects, for example via environmental impacts and sustainability, could also be taken into account. What is "healthy" can also be context specific. In spite of these difficulties, there is broad agreement on certain nutritional "goods" such as fruits, vegetables, legumes, nuts, whole grains, fibre, and polyunsaturated fats and nutritional "bads" such as trans-fats, processed meat, (unprocessed) red meat and sugar-sweetened beverages. Dietary recommendations have changed over time but limiting intakes of fat, sugar and salt have been fairly constant. There is therefore sufficient consensus on dietary "goods" and "bads" to make the observed shifts in food consumption patterns grounds for concern.

Drivers of changing diets

12. It is important to understand what drives the observed shifts in food consumption patterns in order to identify appropriate entry points for policy interventions and to design those interventions in the most effective and efficient way. These drivers involve changes in the entire food value chain and its environment.

13. Drivers of these changes in food consumption patterns include relative price changes, income growth,

urbanisation, value chain and infrastructure investments including roads and storage, lower transport costs, foreign direct investments in food processing and retailing, labour market and lifestyles changes, public and private food standards and regulation, advertising, agricultural support policies, trade and trade liberalisation. These act through influencing prices, preferences, access and availability of food. The most significant impacts are through preferences and availability. Assessment of the relative importance of these various drivers, especially through quantitative analysis, is hampered by difficulties in separating their effects and determining causality.

14. The effects of price changes on food demand are limited since own-price elasticities of demand are low. The effects of other drivers impacting through prices are accordingly reduced. Demand elasticities for livestock products tend to be greater in absolute value than for cereals and other staples and greater in low-income countries and among low-income consumers than in high income countries. However, even in low-income countries, demand for livestock products is still inelastic. In high-income countries food demand elasticities tend to be close to zero. Price effects also depend upon where in the value chain they originate. Farmgate prices are often only a small element of retail prices and vertical price transmission through value chains, especially international value chains, is low.

15. There seems to be broad agreement in the literature that income growth and urbanisation are the main drivers of change with the other factors facilitating those changes. Income elasticities tend to be higher for livestock products, fruit and vegetables and processed foods than for staples so demand for these products increases proportionately more with income growth. Consumption of food outside the home also increases. However, following Engel's Law, income elasticities eventually decline as income increases. This may explain why the increase in livestock product demand is greatest in the transition from low- to middle-income status but tails off at higher income levels. The Russian experience illustrates this.

16. The world's urban population now exceeds the rural population, doubling in many developing countries including China. The impact of urbanization on food consumption is compounded by accompanying socio-economic developments, such as lower physical activity and calorie expenditure, increasing female participation rates, income growth and burgeoning middle classes, which shift preferences and by developments in retailing, fast-food industries, distribution, storage and transportation which enhance availability and diversity of foods in urban markets and lead to urban-rural price differentials. The importance of income growth and urbanisation goes some way to explaining regional differences in food consumption trends. Low income growth and continuing rapid rural population growth past 2050 explain why dietary shifts have been more limited in Africa than in other regions where income growth has been strong and rural populations have already peaked. Cultural factors also constitute important drivers of diets and health. In this context the role that women play in their households and communities in different societies are key determinants in promoting healthy eating and lifestyles

for themselves and their families, in particular children. The long-term implications of diets and habits in childhood for healthy life have been widely recognized. Good nutrition during early childhood in particular is essential for healthy growth, and caregivers, who are more often women, determine access of families to adequate, safe, nutritious, diverse, healthy foods.

17. International trade in food increased significantly after 2000 across all food categories but especially in processed products. Apparent international convergence in food consumption patterns suggests that international trade and investment and the policies affecting them may have played an important role in that convergence either through facilitating it or causing it. With climate change, trade flows stand to be affected by changing production possibilities depending upon latitude. Expanding trade has increased availability of food and its affordability where prices of imports are lower, increasing consumers' real incomes. It can also have beneficial effects on quality where traded foods need to satisfy inspection and safety standards. Trade can ensure stability of food supplies, prices and quality by smoothing seasonal fluctuations in availability and the negative effects of domestic production shocks. This is ever more important in the context of climate change. Considering the significant risks of climate change to agricultural production, trade is likely to become even more significant in the future as food demand grows in regions where productivity gains will not be enough to meet demand growth. The greater variety of food supplies that trade can bring enhances consumer choice and promotes more diversified diets, especially of fruits, vegetables, meat and dairy products. Trade has made a major contribution to the observed trends in food consumption patterns by supporting increased daily energy intakes and the shift in diets away from carbohydrates towards fats and protein. Increasing consumption of livestock products has been facilitated through direct imports and through imports of livestock feeds permitting expansion of domestic production. However, at the same time trade has increased the availability and decreased the prices of processed, convenience and fast foods with large portion sizes and high energy density. Trade can change traditional consumption patterns, resulting in less healthy diets with displacement of traditional food crops by cash crops for export and increasing dependency on foreign supplies. Even nutritionally damaging products can find markets in low-income countries as the examples of fatty turkey tails and mutton flaps show, although, as mentioned above, trade also enhances the availability of nutritious products.

18. The nature of food value chains has been changed dramatically by infrastructure investments and technological improvements which have improved efficiency, increasing availability and variety of foods and lowering prices. More controversially, there have also been major structural changes involving increasing concentration especially in processing and retailing, vertical integration and foreign direct investment. The situation is more complex than a simple replacement of traditional value chains linking consumers with smallholders through traders and local markets by modern value chains involving domestic and multinational food manufacturers and supermarkets. The

two continue to co-exist and interact especially in low-income countries and modernisation has taken place at different rates. Traditional value chains still have an important role to play in providing rural areas and poor consumers with access to low priced fresh foods.

19. Multinational food processors and supermarkets and FDI have been important contributors to shifting food consumption patterns. The first decade of the 21st century saw a big expansion in FDI in food and beverages, encouraged by international investment liberalisation and signing of investment agreements. Market-seeking FDI has been a catalyst for upgrading of domestic supply systems with domestic firms having to adopt foreign methods of business coordination, purchasing and distribution, standards, product differentiation, sophisticated marketing and improved food-processing technologies in order to compete. The spread of supermarkets echoes the trend towards increasing urbanisation providing convenient access for urban populations to a variety of foods. In this, they typically work closely with the large-scale manufacturers who are able to supply the large volumes and consistent quality demanded by the supermarkets, which in turn are able to deliver a market for the manufacturers' products.

20. Modernisation of food value chains has been an important part of the evolution of diets. However, from an analytical perspective, it is difficult to determine whether observed changes in value chains are a cause of dietary change or are a response to changing consumer demands linked to general economic development, rising incomes and urbanisation. Empirical evidence is limited and attribution is problematic. Modern value chains have improved access and increased the availability of safe and quality foods and provided year round access to otherwise seasonal foods such as fruit and vegetables. However, the emphasis has been particularly on processed foods such as packaged groceries, chilled foods such as dairy products, processed meats, snack foods, fast foods and soft drinks. FDI has been cited as the key driver of ultra-processed foods. At the same time, economies of scale in large-scale processing and retailing lower the price of these processed foods relative to traditional staples and fresh fruit and vegetables. The result has been a substitution of cheaper processed for unprocessed foods, which may provide some dietary diversity and cheaper energy but entails consumption of more calories overall from energy dense foods with high levels of salt, saturated and trans fats. While such substitution may reflect shifting consumer preferences to which the supermarkets and large food manufacturers are simply responding, they have also actively shaped those preferences and hence demand through sophisticated marketing and advertising, including efforts directed specifically at children.

21. The various drivers outlined above are expected to continue to be the most relevant in the projections of food consumption to 2050 although empirical evidence on their relative importance is limited. Quantitative analysis is hampered by the limitations of the available household survey and food balance sheet data and difficulties in separating the effects of different drivers and determining causality. What empirical evidence is available suggests

that income growth and urbanisation have been the major influence on dietary patterns. While much attention has been focused on the roles of trade and trade liberalisation and FDI and supermarkets, and there are good reasons to believe that structural changes in food value chains have indeed been important, further research is needed to clearly identify their effects.

Policy impacts on food consumption

22. As with other drivers of change, prices, preferences, access and availability are also the channels through which the effects of policies and programmes aimed at the food system, its economic environment and directly at food consumers are manifested. Policy effects may be short- and/or long-term partly due to habit persistence in food consumption. Different policies impact all stages of food value chains from farm production and trade through processing, distribution and retailing to the final consumer. These include agricultural price supports, direct income payments, farm input subsidies, production and marketing quotas and controls, public R&D, import tariffs and non-tariff barriers, export subsidies, food aid, subsidies and taxes. More general economic policies such as macroeconomic policies, rural development policies and education policies can also have nutritional implications. Particular interest has focused on the possible nutritional impacts of agricultural support policies and trade policies and there have been calls for these to be “nutrition sensitive”. While so many policies might conceivably have an impact on food consumer behaviour that does not mean that these policies should be considered effective or efficient means of addressing nutritional objectives. In general, policy instruments should be assigned to those objectives where they have most effect and trade-offs between competing policy objectives need to be recognised. The use of trade policies to address nutritional goals is not an efficient assignment of policy instruments compared to other policies available that would have a greater and more direct impact on consumption patterns. Nevertheless, “nutrition sensitivity” of trade measures is important. Potential nutritional consequences of any policy measures should be considered carefully, while acknowledging that those policies in themselves may not be the most efficient tool to address nutritional goals.

23. The commonly expressed view that agricultural support, particularly agricultural price support, in high-income countries has led to worsening diets and health outcomes is probably incorrect for a number of reasons. While agricultural price support in high-income countries led to surplus food production it usually acted as a tax on consumers. Furthermore, policy reforms over many years have removed or changed the nature of that support in most OECD countries, replacing price support with income support through direct transfers sometimes tied to compliance with environmental conditions. If anything, it is the reform of support policies could have actually changed diets for the worse as the tax on consumers was reduced. In any case, policy-induced price changes at farm level are likely to have limited impact at the consumer level. Price transmission from farm to retail is typically low as a result of the costs and margins taken in processing and marketing

stages. The farm value share in retail food products has declined significantly to as little as a quarter on average and less for more highly processed products. For food eaten away from home, the farm value share can be even smaller - as little as 6 percent in the US. Furthermore, as noted in the previous section, own-price elasticities of food demand are low at consumer level. Consumers therefore do not face the same proportional price changes as farmers and respond little. Therefore, policies aimed at producers are not likely to be effective in changing consumer behaviour. An exception to this is where subsidised disposal of the surpluses generated by agricultural support in high-income countries led to lasting shifts in consumption patterns and discouraging of domestic production in recipient low-income countries.

24. The old Common Agricultural Policy (CAP) of the European Union provides a classic example of agricultural price support which imposed a net tax on food consumption not a subsidy. That tax was highest for “bad” foods such as dairy products and sugar where support was highest, although for the reasons discussed above the impact on consumption was probably limited. A series of CAP reforms over the years gradually decoupled support from production and instead coupled payments to environmental services, eliminating distortions to relative prices and reducing the implicit consumer tax element to near zero. CAP reform may work against better diets by reducing sugar, butter and beef prices. The development of US agricultural policies tells a similar story. The impacts of most US farm programs on diets are negligible because of a move to more decoupled forms of support which leave farmgate and hence retail prices little affected. The exceptions to this are measures like tariffs, marketing orders, and biofuel policies which have raised prices.

25. At least in most OECD countries, agricultural support policies are inherently not very capable of being nutrition sensitive. In low-income countries where the farm-retail price spread is less and price elasticities of demand are higher, policy impacts may be larger although support levels have historically been much lower and there is little evidence of dietary impacts. In many low-income countries agricultural policies in the past tended to tax farmers, keeping food prices low for consumers but again with few obvious nutritional benefits. Other policies aimed at increasing productivity and connecting smallholders to markets appear to have had more impact. Green revolution rice yield growth in Bangladesh has been associated with earlier introduction of complementary child feeding and child weight gain although it did little for dietary diversity. Measures to link smallholders to markets and to improve the efficiency of traditional markets lower prices, increase availability and enhance food quality and safety. Evidence from Ethiopia on the impact of rural roads showed that households with consequently improved market access had greater consumption, more food security and greater dietary diversity. Evidence from India showed improved dietary diversity as a result of public market infrastructure investments.

26. In view of the expansion of trade in food, trade policies are obviously relevant to the discussion of trends in food consumption. It has been claimed that trade liberalisation

has been linked to shifts in diets with adverse nutritional consequences as a result of relative price changes or import surges and demonstration effects encouraging adoption of “western” diets. There is little evidence to support this claim. Trade liberalisation in India in 1991 which reduced effective tariffs from around 86 percent to around 40 percent is suggested as one possible driver behind increasing consumption of livestock products. The empirical evidence for this is limited although econometric analysis of household survey data across Indian rural regions suggests that greater exposure to the 1991 liberalisation had a negative impact on cereal consumption but a positive impact on consumption of livestock products. However, while there are limited grounds for believing trade and liberalisation may have led to negative dietary change, it should not be overlooked that open, unrestricted trade plays a vital role in supporting dietary diversity and enhanced availability more generally. For fruit and vegetables and other healthy foods, there should be no question that trade should be open and unrestricted.

27. Liberalisation of trade policies of OECD countries following the Uruguay Round Agreement on Agriculture was expected to raise the level of global food prices in contrast to the price-depressing effects of previous trade policies. Modelling of the effects of even full liberalisation suggests only modest price increases. Such modelling efforts have seldom focused explicitly on consumption and diets but modest price increases together with low price elasticities of demand and limited transmission of price changes from international to domestic markets mean that liberalisation would have only a minor effect. The effect of tariff reductions therefore would be expected to be similarly limited and for broadly the same reasons as for agricultural price support although price transmission would be further reduced in the case of global to domestic markets.

28. The need for consistency with WTO rules means that use of tariffs to achieve nutritional goals is restricted within bound rates. Measures such as quantitative restrictions and trade standards can have more direct effects on food availability but need to be based on scientifically valid safety concerns, and be non-discriminatory and consistent with WTO rules and Agreements on Sanitary and Phytosanitary Standards (SPS) and Technical Barriers to Trade (TBT). Trade agreements reduce the “policy space” - the freedom, scope and instruments - to introduce health-oriented domestic food policies. While restrictions on imports of foods perceived as “unhealthy” – as in the case of fatty turkey tails – are problematic under international trade rules, restrictions on domestic sales of such products (as in the case of the Danish trans-fat regulation) may be effective and would not violate trade commitments provided they are applied indiscriminately on imported goods and domestic produce.

29. The number of countries adopting policies aimed at influencing consumer behavior directly in favour of healthier diets is growing rapidly. Such policies have the advantages of being more targeted on the policy objective and more efficient and with fewer externalities than policies aimed upstream. These policies for better nutrition can be divided into “information policies” aimed at changing the nutritional information available to consumers

and “market policies” aimed at changing relative prices and availability of foods. While use of information policies is well established and widespread, the use of market policies such as subsidies and taxes on consumption is becoming increasingly common.

30. Information policies include information campaigns *per se* to raise public awareness of nutrition issues and suggest healthy eating guidelines. Most governments run these types of campaign and there is evidence that they can be cost-effective in changing attitudes and consumption behaviour. However, in this they may need to counter the effects of heavily resourced advertising from the food industry. At least 16 countries have introduced direct regulation of food industry advertising, for example to limit junk food advertising targeting children, although it is premature to judge the success or otherwise. Food labelling to provide consumers with nutritional content information or “health warnings” is more widespread but again, as yet, the evidence on effectiveness is limited although food choices do seem to be affected. Nutrition education in schools appears to be effective in instilling nutritional awareness.

31. Market policies include regulation of content of meals served in schools and other public institutions and, in some countries, workplaces. Evidence from the UK suggests significant nutritional improvement in school meals. Some countries, including Australia, France and US have also banned vending machines and soft drink sales from schools with consequent reductions in intakes at least during school hours. Some governments have imposed mandatory limits on particular nutrients in foods or sponsor voluntary schemes. An increasing number of countries are restricting trans-fatty acids in foods following the example of the ban introduced by Denmark in 2003. The Danish ban is credited with significantly reducing deaths from cardiovascular disease compared to similar OECD countries. Voluntary schemes and public-private partnerships are seeing an exponential growth, mainly in high-income countries.

32. Relative prices of foods can be manipulated through subsidies to promote healthier choices and taxes to discourage unhealthy choices. Subsidies are intended to reduce the relative price of staples or selected healthy foods but can have an income effect as well as a substitution effect which can lead to increased consumption of non-subsidised foods. Subsidies are an expensive policy choice unless targeted at particular groups such as pregnant women or low-income households as in the case of the US Food Stamps and Supplemental Nutrition Assistance Program (SNAP). Non-targeted subsidies lead to undervaluation and waste of food and can exaggerate nutrition problems as has been observed in a number of MENA countries. The evidence is mixed on the effectiveness of consumer subsidies. The experience in the EU with subsidies for fruit and vegetables in schools and for low-income consumers has been positive. India’s Public Distribution System subsidised rice and wheat to 0.5 billion people per year. Staples consumption increased as did consumption of pulses, vegetables and oil. Food vouchers for staples in China do not appear to have had any lasting effects on nutrition.

33. Taxes are intended to discourage consumption of unhealthy foods such as fat and sugar-sweetened sodas by making them more expensive. However, given the low price elasticity of demand for food and habit persistence, taxes may have to be large to produce any significant decrease in consumption. Where the tax is imposed upstream rather than at retail the impact on consumption will be even less since price transmission is not perfect. If tax-induced relative price changes are to work, there must be a readily available healthier substitute for the taxed product – low sugar versions, for example - and a high elasticity of substitution between them. This allows the possibility of “nudging”. At the same time, low price elasticities of demand mean that tax revenues could be significant and in principle could be used to finance additional measures such as nutrition information campaigns as in the case of the 2012 soda tax in France where half of tax revenues were allocated to health promotion measures. The evidence on the effects of food taxes suggests small impacts on demand for the products concerned – fats in Denmark, sodas in Mexico, for example. Several evaluations for the US show mixed results on intakes but large tax revenues. Food taxes can be controversial and have been criticised for their regressive nature imposing a relatively higher burden on poorer consumers and for imposing an unfair burden on all consumers rather than being targeted on those individuals whose food consumption gives rise to external costs. The likely limited response to a food tax suggests that they may be ineffective as a stand alone measure but could be effective as part of a policy mix. Moreover, since long-run price elasticities of consumption tend to be higher than the short-run elasticities, making nutritionally inferior foods more expensive relative to healthier alternatives could be effective in shifting long-term dietary habits. Taxes on unhealthy foods together with adequately funded information programmes, for example, could shift consumption in favour of healthier alternatives provided these are readily available.

Conclusions

34. The last fifty years have seen significant increases in overall calorie availability globally with reductions in the shares of calorie intakes from cereals and roots and tubers and increases in the shares of livestock products, vegetable oils, sugar and processed foods. Projections to 2050 suggest that these trends will continue though at a declining rate. Africa has seen least change in dietary patterns and Asia the most. The dietary trends towards more calories overall, declining consumption of staples and rising consumption of livestock products, processed foods, saturated fats, sugar and salt have been linked to health risks, obesity and non-communicable diseases and are justifiably grounds for concern.

35. Relative price changes, income growth, urbanisation, value chain and infrastructure investments, foreign direct investment in food processing and retailing, international trade and agricultural and trade policies are cited as influences on prices, preferences, access and availability of food. The same drivers are expected to be the most relevant in the projections of food consumption patterns to 2050. Price changes, including policy-induced changes,

likely have a limited effect on food demand since own-price elasticities and vertical price transmission through value chains, especially international value chains, are both low. Income growth and urbanisation are seen as the main drivers of change. Multinational food processors and supermarkets and FDI have been a common feature of changes in food value chains but it is not clear whether these changes, including sophisticated marketing and advertising, are a cause of dietary change and specifically substitution of cheaper processed for unprocessed foods or are a response to changing consumer demands linked to general economic development, rising incomes and urbanisation. Expanding trade has increased availability of all types of food and its affordability and enhanced dietary diversity.

36. Policies and programmes aimed at the food system, its economic environment and directly at food consumers also impact on prices, preferences, access and availability at all stages of food value chains from farm production and trade through processing, distribution and retailing to the final consumer. Policy-induced price changes are likely to have limited impact due to low elasticities and price transmission. Effects of liberalisation of trade policies are likely to be minor for the same reasons. Trade measures are in any case restricted by WTO commitments. The use of trade policy to address nutritional goals is therefore not the most efficient assignment of policy instruments compared to other policy options. The use of food policy should also be judiciously considered and in combination with other measures. Information and market policies aimed at influencing consumer behavior directly in favour of healthier diets are more targeted and more efficient and are increasingly adopted. Food taxes on unhealthy foods are controversial and would have to be large to produce any significant decrease in consumption. However, taxes on unhealthy foods together with adequately funded information programmes could shift consumption in favour of healthier alternatives provided these are readily available. Improving policy coherence is essential in this respect.

37. While much is understood about trends in food consumption patterns and policy interventions to influence consumer behaviour in favour of more desirable nutritional outcomes are widespread, there is a need for more and better data and research. Long-running food balance sheet data have been widely used to describe global, regional and national trends in availability and implied trends in intakes of different foods and shifts in dietary patterns. To make more sense of these trends, identifying key drivers and especially the role of trade, and to better identify policy implications and choices, comprehensive analyses are needed to link trends in availability with corresponding trends in domestic production and imports. Food balance sheet data reveals little about the increases in consumption of processed and ultra-processed foods which are seen as a key part of dietary trends. Trade data should be obtainable at a sufficient level of product disaggregation to cast some light on this but the overall limited availability of data on processed products is a major stumbling block. Given the concern that observed dietary trends involve a tendency towards increasing consumption of less healthy foods, it is useful to consider food composition and the availability of nutrients as well as availability of the foods themselves.

The nutritional and health implications of trends in intakes of sugar, salt and fats, for example, could then be assessed against existing guidelines such as those promulgated by WHO/FAO. However, the guidelines themselves need to be developed further in terms of definitions of healthy diets that can be used as policy targets and to assess policy impacts. There is broad agreement on the list of drivers of change in food consumption patterns. Price and income effects are relatively well-understood and empirical estimates of relevant elasticities are available. However, there is still uncertainty about the strength of the effects and even the direction of causality of other drivers, notably the impacts of trade and globalization so more research is needed. There is scope for improvement on the econometric analyses to date in terms of specification, data and estimation especially with regard to estimating the impacts of trade liberalization and increasing FDI and other value chain developments. It is clear that value chain developments can at least facilitate dietary change and this includes efficiency improvements in traditional value chains. The evidence on the nutritional impacts of traditional versus

modern value chains needs to be reviewed and policy lessons drawn for improvements in traditional value chains. All these suggestions for further research and information gathering have clear policy relevance but there is a need to document actual policy interventions and study their effectiveness so as to improve the evidence base on which better policy choices can be made. Consumer policies have the advantage of being targeted and apparently effective but there is a need for more analysis of experiences to date. Food taxes, for example, are increasingly common but research is needed into the conditions and policy combinations needed for them to be successful. While agricultural support and trade policies are not efficient policy choices to target nutritional objectives, awareness of potential spillover effects of agricultural and trade policies on nutrition is clearly important. Exploring the extent to which trade barriers limit imports of foods generally agreed to be healthy like fruit and vegetables, for example, would be a constructive example of this interpretation of nutrition sensitivity.

Annex 1: Concept note

Expert Consultation on trade and nutrition 15-16 November 2016 FAO Headquarters, Rome

The relationship between trade, food security and nutrition is attracting increased attention on both the trade and the development agenda. The global eradication of hunger by 2030 is a key goal in the new 2030 Agenda for Sustainable Development and trade is one of the means of achieving this goal. In addition, the outcome documents of the Second International Conference on Nutrition (ICN2) acknowledge that trade can play an important role in achieving nutritional targets. In view of the commitments made in the Rome Declaration on Nutrition and the recommendations put forward in the Framework for Action¹, there is a need to explore how trade and trade policies can be conducive to improving nutrition.

Malnutrition represents a global challenge that encompasses three separate dimensions: undernourishment, or a lack of food energy or protein; undernutrition or micronutrient deficiencies; and over-nutrition, manifest in overweight and obesity. There is growing evidence that all three forms of malnutrition can coexist, not only in the same country but even within the same family (FAO, 2015). This co-existence is known as “the triple burden of malnutrition”, with relative weights gradually shifting from under-nutrition to over-nutrition. Indeed, the global share of undernourished people has decreased from 23.3 percent in 1990–92 to 12.9 per cent in 2015, while overweight and obesity are constantly rising. With this shift, the focus in the debate is moving from hunger and undernutrition to overweight and obesity and the public health concerns associated with them.

These shifts in the relative importance of different forms of malnutrition are also reflected in the research agenda on nutrition. While the links between trade and food security/hunger have received substantial attention in the literature, including in the recent issue of FAO’s flagship publication *The State of Agricultural Commodity Markets 2015-2016*, the linkages between trade and other forms of malnutrition are less well understood. Even less so are the links between trade and diets or trade policies and diets. There is, for instance, little empirical evidence on how changes in

trade policies and patterns affect the nutritional status of a population and how trade can affect the physical and economic access to safe and nutritious food. There is even less empirical evidence on how trade as well as domestic food and agricultural policies affect diets and nutritional outcomes.

At the same time, there are growing concerns that the transition towards an energy-dense and imbalanced diet has contributed to overweight, obesity and diet-related non-communicable diseases (NCDs). This shift in the diet often comes with higher intakes of meat, eggs and other livestock products, as well as sugar, fats and oils, often in the form of convenience and fast food. This nutrition transition is said to be driven by many factors, some of which may be rooted in agriculture. Frequently mentioned are factors such as the rapid technological progress in agriculture and food processing, innovations in food distribution systems and changes in the international trade policy regime, as well as global phenomena such as urbanization and economic growth. But trade and domestic food policies can also have an impact on countries abroad; not only can they permanently change the consumption patterns and the healthiness of diets in importing countries, they also have the potential to marginalize producers and processors in countries abroad.

The empirical evidence on how trade has actually changed the patterns of consumption is still rather limited. At the broadest level, trade can improve the availability and affordability of different foods, add to a wider choice for consumers, but also help smooth food supply and buffer domestic production shocks. How exactly trade and changes in policies can affect diets is less straightforward and less researched. Better analysis of the effects of trade and trade policies on diets and evidence from specific country cases are needed. Such analysis would provide the basis for a greater coherence between trade policy and nutrition and enable a common understanding of the opportunities and the risks of trade policy reform from a nutrition perspective. Eventually, it would help identify policy options that ensure freer trade with co-benefits for improved nutrition.

This expert meeting is intended to explore these and related issues around the relationship between trade and nutrition. It will address the role of trade in the “nutrition transition” and the extent to which trade and trade policies can be either detrimental to, or supportive of improved nutrition. It will also look at the impacts of changes in trade and domestic policies on food availability at home and in countries abroad and how these policies can change dietary patterns.

¹ ICN2 Framework for Action includes:

- Recommendation 17: Encourage governments, United Nations agencies, programmes and funds, the World Trade Organization and other international organizations to identify opportunities to achieve global food and nutrition targets, through trade and investment policies.
- Recommendation 18: Improve the availability and access of the food supply through appropriate trade agreements and policies and endeavour to ensure that such agreements and policies do not have a negative impact on the right to adequate food in other countries.
<http://www.fao.org/3/a-mm215e.pdf>

The invited experts will present their findings in these areas during prepared interventions; an open debate in each session will help consolidate and refine the results as well as identify knowledge gaps and future research. In particular, the following questions will be addressed:

- How have diets evolved in developed and developing countries? Have diets become healthier over time? What are the prospects towards 2050?
- What have been the main drivers of changing diets and the “nutrition transition”? What are the impacts of globalisation, trans-national companies, urbanisation and market liberalization? How will these drivers change diets over the decades to come?
- How do agricultural (domestic and trade) policies affect nutrition outcomes of the countries that implement them and their trading partners? What trade and agricultural policy options can generate co-benefits for nutrition? Should trade policies be used to pursue nutritional outcomes or be kept focused on trade policy goals?

Annex 2: Agenda

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TUESDAY 15 NOVEMBER

- 8:30** **OPENING AND WELCOME REMARKS**
- **Boubaker Ben-Belhassen**, Director, Trade and Markets Division (EST), FAO
 - **Kostas Stamoulis**, Assistant Director-General, Economic and Social Development Department (ES), FAO
 - **Anna Lartey**, Director, Nutrition and Food Systems Division (ESN), FAO
 - **Ekaterina Krivonos**, Economist (EST), FAO - *Objectives and structure of the consultation*
- 9:00** **SESSION 1: CONCEPTS AND TRENDS IN DIETS AND NUTRITION OUTCOMES**
Moderator: Charlotte Dufour, ESN
- **Ashkan Afshin**, Institute for Health Metrics and Evaluation (IHME) - University of Washington
What makes a healthy diet a healthy diet?
 - **David Hallam**, Former Director, EST/FAO
Trends in food consumption and drivers of change
- 10:30** Coffee break
- 11:00** **SESSION 2: DRIVERS OF CHANGE IN FOOD SYSTEMS AND NUTRITION TRANSITION**
Moderator: Josef Schmidhuber, EST, FAO
- **Will Masters**, Tufts University
Structural change in agriculture, food and nutrition
 - **W. Bruce Traill**, University of Reading
The role of FDI in food industries, transnational corporations and supermarkets in shifting diets
- 12:30** Lunch
- 14:00** **SESSION 3: PUBLIC POLICIES FOR HEALTHY DIETS: THE ROLE OF TRADE**
Moderator: David Hallam, Former Director, EST, FAO/Consultant
- **Mario Mazzocchi**, University of Bologna
Effectiveness of policies targeted at promoting healthy eating diets
 - **Bhavani Shankar**, SOAS
Influence of agricultural, trade and food policies on diets
 - **Siwa Msangi**, IFPRI
Major trends in diets and nutrition: A global perspective to 2050
- 16:00** **CLOSING DISCUSSION AND WRAP-UP OF DAY 1**

WEDNESDAY 16 NOVEMBER

9:00 SESSION 4: PRODUCTION, MARKETS AND TRADE: EFFECTS OF AGRICULTURAL POLICIES ON NUTRITIONAL OUTCOMES

Moderator: George Mermigkas, EST, FAO

- **Joseph Glauber**, IFPRI - *Impacts of US agricultural policies on obesity*
- **Josef Schmidhuber**, FAO - *CAP reform and diets*

10:30 Coffee break

11:00 SESSION 4: PRODUCTION, MARKETS AND TRADE: EFFECTS OF AGRICULTURAL POLICIES ON NUTRITIONAL OUTCOMES (CONT.)

Moderator: Ekaterina Krivonos, EST, FAO

- **Christine Burggraf**, IAMO - *Economic transformation, agricultural policies and nutritional habits in Russia*
- **Will Masters**, Tufts University - *Measuring the costs of nutritious diets: Results from Ghana*

12:30 Lunch

14:00 SESSION 4: PRODUCTION, MARKETS AND TRADE: EFFECTS OF AGRICULTURAL POLICIES ON NUTRITIONAL OUTCOMES (CONT.)

Moderator: Ekaterina Krivonos, EST, FAO

- **Panos Konandreas**, Trade Policy Plus - *Saudi Arabia's food security policy and nutrition*
- **Bart Minten**, IFPRI - *Effect of local market access on diets, consumption, and nutritional indicators in Ethiopia*
- **Cherry Law**, University of Kent - *Trade liberalisation and regional dietary patterns in rural India*

15:45 Coffee break

16:15 SESSION 5: CLOSING DISCUSSION

- *What are the key findings arising in the assessment of the role of agricultural and trade policies in nutrition outcomes?*
- *What is the scope for trade and trade policies to generate co-benefits for nutrition?*
- *Areas that need more elaboration/further research*

17:00 FINAL REMARKS AND CLOSING

Annex 3: Meeting participants

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External participants:

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Acting Assistant Professor
Global Health
Institute for Health Metrics and Evaluation (IHME),
University of Washington

Christine Burggraf

Department of Agricultural Markets
Leibniz Institute of Agricultural Development in Transition
Economies

Joseph Glauber

Senior Research Fellow
International Food Policy Research Institute (IFPRI)

David Hallam

Former Director, EST/FAO

Panos Konandreas

Trade Policy Plus

Will Masters

Professor, Friedman School of Nutrition Science & Policy,
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Mario Mazzocchi

Associate Professor of Economic Statistics
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Bart Minten

Senior Research Fellow
International Food Policy Research Institute (IFPRI)

Siwa Msangi

Senior Research Fellow
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University of London

Bruce Traill

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University of Reading

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Josef Schmidhuber

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George Mermigkas

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