



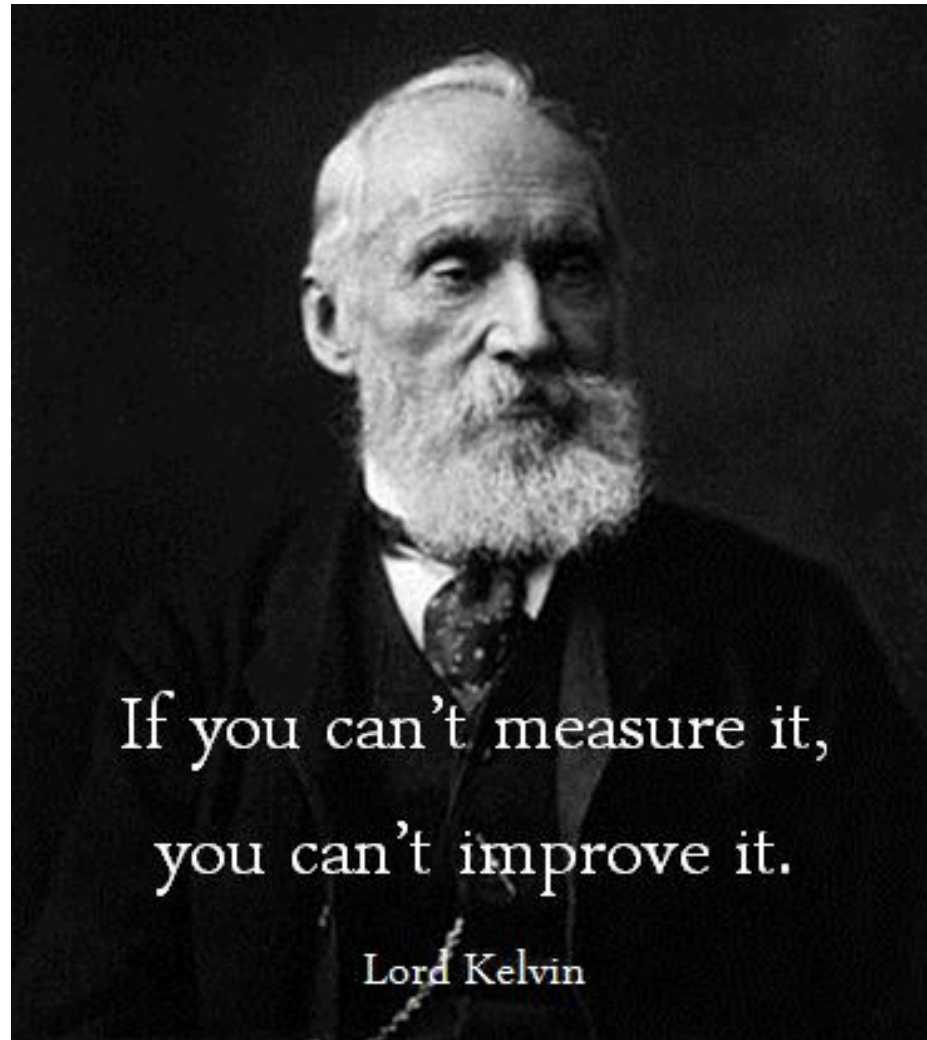
Importance of Food Consumption Data for Food Decision-Making

Dr. Élie Bouyazbeck

*3rd Global Food Regulatory Science Symposium
18th Dubai International Food Safety Conference*

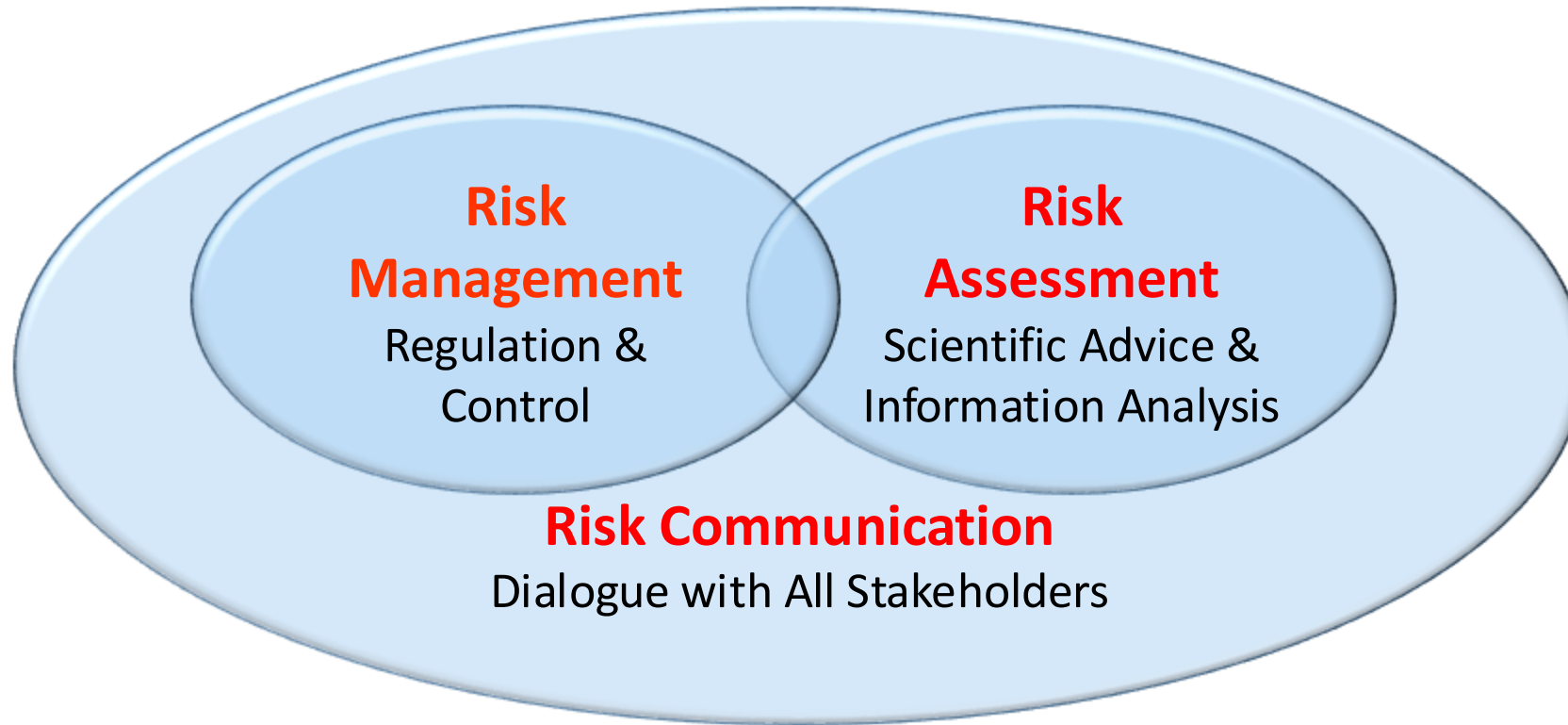
Dubai - UAE

24 October 2024



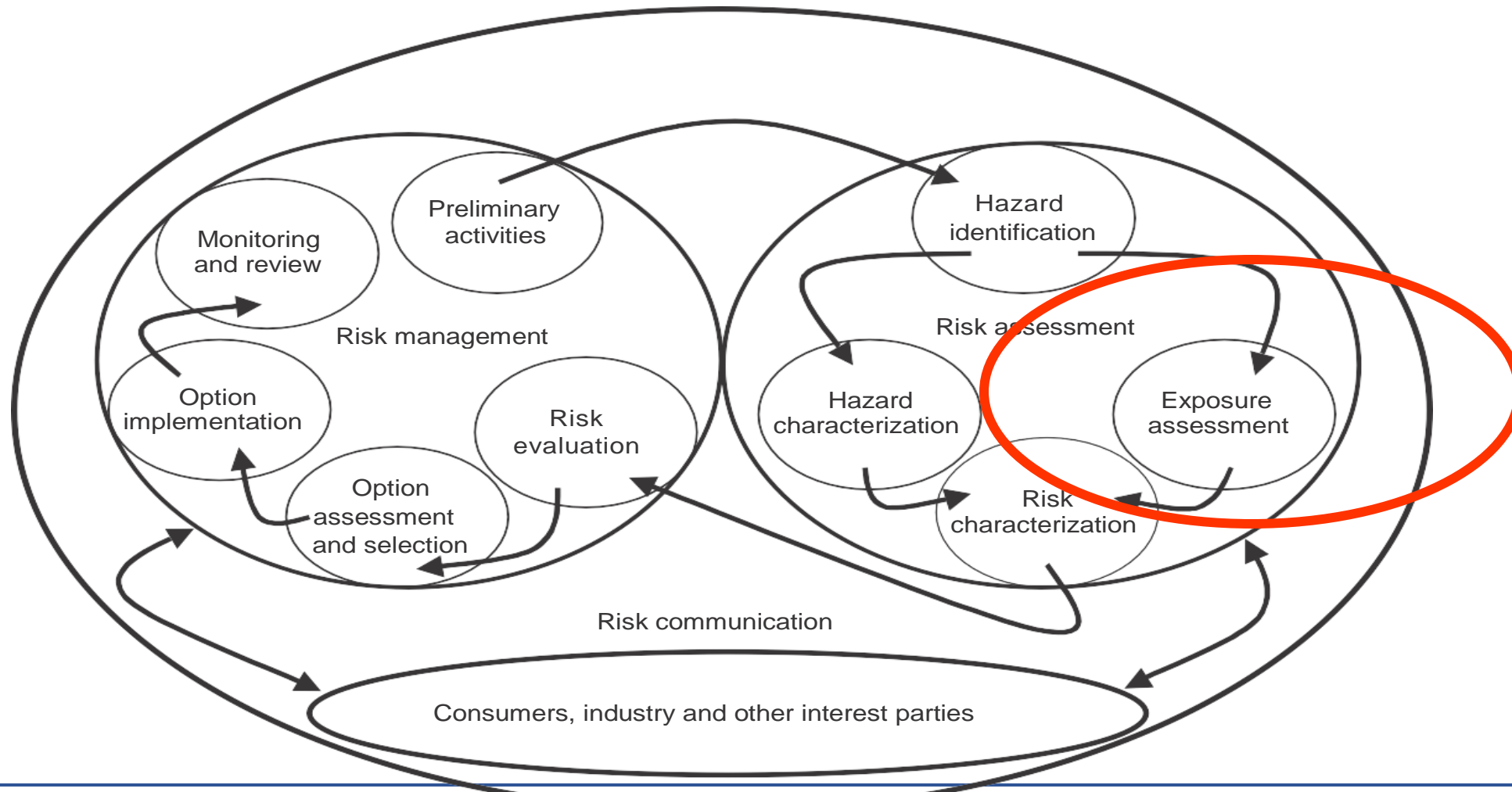
Robust Food Regulatory Decisions: Based on Risk Analysis³

Key Pillars of a Robust Food Control System



Risk Analysis → Robust Food (Regulatory) Decisions

Continued Reliance on Risk Analysis for Food (Regulatory) Decision-Making



Dietary Intakes/Dietary Exposure Assessment

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**Occurrence of
Food Chemicals**








**Food
consumption**





Dietary Intakes/Exposure Assessment

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Amount brought by each food		=	Amount Consumed (g/day)	X	Occurrence data (µg/g)	Body weight (kg)	=	Intake / Exposure (µg/kg/day)
Overall Diet		=	141,9	X	0,0093	/ 65	=	0,020
	+ 	=	198,4	X	0,0009	/ 65	=	0,003
	+ 	=	191,5	X	0,0076	/ 65	=	0,022
	+ 	=	541,4	X	0,0025	/ 65	=	0,021
	+ 	=	315,0	X	0,0007	/ 65	=	0,003
						Total	=	0,070 (µg/kg/day)

Stepwise Approach For Dietary Intakes/Dietary Exposure Assessments ⁸

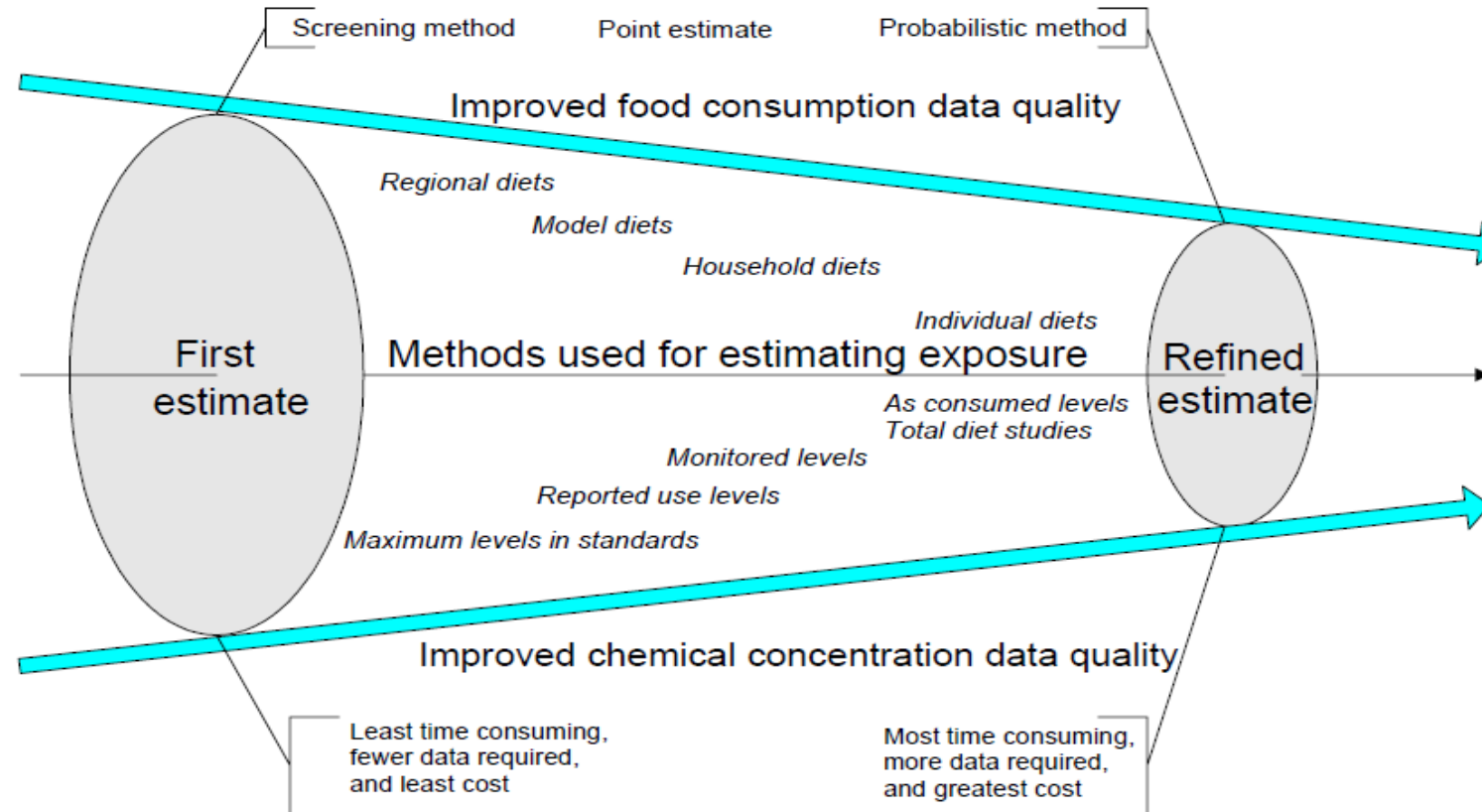


Figure 1 Stepwise approach to obtaining realistic dietary exposure assessments

Note: Data and methods selected from the right-hand side of the diagram are likely to result in a more realistic dietary exposure estimate or "refined estimate"; however, it may not be the "refined estimate" in terms of the "most appropriate" one to suit the purpose of a specific dietary modelling exercise.

Overview: Types of Food Consumption Data – Pros and Cons

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Méthods	Data	Consumption Estimates	Food Chain Level	Drawbacks
Population-based methods	<ul style="list-style-type: none"> ❑ Food Balance Sheets <ul style="list-style-type: none"> ▪ Total food available for consumption as a physical residual in the market. ▪ Total supply = total demand ❑ Time scale: year 	<ul style="list-style-type: none"> ❑ Median, mean 	<ul style="list-style-type: none"> ❑ Raw, semiprocessed products 	<ul style="list-style-type: none"> ❑ No information on distribution of consumption ❑ No information on individual exposure and subgroups at risk ❑ High level of uncertainty
Household-based methods: Always available, generated on a regular basis by national institute of statistics	<ul style="list-style-type: none"> ❑ Purchase or expenditures records <ul style="list-style-type: none"> ▪ Values and quantities of food purchased, own produced and received at household level ❑ Large sample size ❑ Time scale: weeks 	<ul style="list-style-type: none"> ❑ Mean ❑ High Percentile 	<ul style="list-style-type: none"> ❑ Raw, semiprocessed and processed products 	<ul style="list-style-type: none"> ❑ No intra-household distribution ❑ Not individual food intakes ❑ Food eaten outside home difficult to capture
Individual-based methods	<ul style="list-style-type: none"> ❑ Food record survey ❑ 24-hour recall survey ❑ Food frequency questionnaire ❑ Meal-based diet history survey ❑ Food habit questionnaire <ul style="list-style-type: none"> ➢ Small sample size ➢ Time scale: days 	<ul style="list-style-type: none"> ❑ Mean ❑ High percentile 	<ul style="list-style-type: none"> ❑ Raw, semiprocessed and processed products 	<ul style="list-style-type: none"> ❑ Expensive, time and resource consuming ❑ Susceptible of under- or over reporting

DATA SHOULD ENABLE TO

- ☐ Qualify the types of foods consumed in a given area / by a given population / sub-population
- ☐ Identify food products, ingredients, methods of preparation, **quantities**
- ☐ **Preferred approaches:** Individual Based methods (versus Household based approaches)
- ☐ **Should help capture differences in consumption patterns:**
 - Age / gender driven
 - Urban / Rural / cultural
- ☐ Efforts were made to standardize the approach e.g., the EU Menu methodology

Attempts to standardize Methodology

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The EU Menu methodology:

Recommends the use of:

- ✓ food diaries for children
- ✓ 2 x 24 hr recall for adolescents and adults :
 - using a dietary survey software tool to assist with the data entry and accompanied preferably by at least one face-to-face interview (nutritionist) to ensure comprehensive reporting by the respondent.
- ✓ Data collected should include **details on foods, beverages** and supplements consumed, **recipes**, food descriptors, portions consumed, preparation/processing method, place of consumption, time of consumption etc...

IPCS

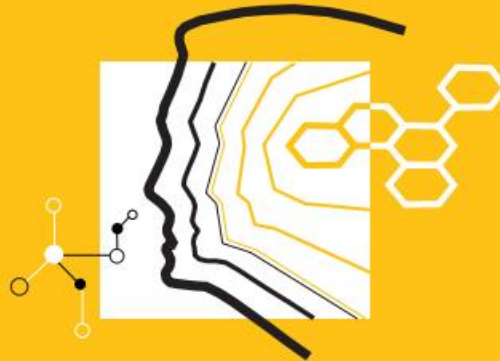
INTERNATIONAL PROGRAMME ON CHEMICAL SAFETY



Environmental Health Criteria 240

Principles and Methods
for the Risk Assessment
of Chemicals in Food

Chapter 6 DIETARY EXPOSURE ASSESSMENT OF CHEMICALS IN FOOD



A joint publication of the Food and Agriculture Organization
of the United Nations and the World Health Organization



Food and Agriculture
Organization of
the United Nations



World Health
Organization



المبادرة العربية
للدستور الغذائي

Need for Concerted Action...

Introducing the Arab Food
Consumption Initiative

Collaborative Initiative – Under Arab Codex





المبادرة العربية
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ARAB FOOD CONSUMPTION DATA INITIATIVE

Supporting Representative Exposure Assessments in the Arab Region

FIRST EXPERT MEETING

of the Arab Food Consumption Data Network

23 February 2024 • St-Regis Marsa Arabia, Doha, State of Qatar

Objectives of the Arab Food Consumption Data Initiative

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- ✓ **Create reliable repositories** for food consumption data representative of the Arab region, including country-related data, for use by food regulatory authorities and their stakeholders for exposure assessment purposes.
- ✓ **Develop agreed-upon methodologies** of food consumption data collection that can be used consistently by Arab food risk assessment authorities to implement food consumption surveys in their respective jurisdictions.
- ✓ **Develop and maintain the set of enabling tools**, including Information and Communication Technologies (ICT) that support the consistent deployment of food consumption data collection in the Arab region e.g., applications of data collection, applications for data analysis, etc.



- ✓ **Develop training material and capacity building programs** to disseminate knowledge and support the adoption of consistent / harmonized methodologies and tools supporting food consumption data collection in the Arab region.
- ✓ **Develop and maintain a network of experts** that support the sustainable management of food consumption data, for risk assessment use in the Arab region.



Initial Mapping of Arab Food Consumption Data Available ¹⁸



Initial Mapping of Arab Food Consumption Data Available ¹⁹

❑ **Saudi Arabia:**

- National Multi-stage survey SHIS – 10,000 + participants – age 15 higher (89% response rate) - Summer 2013 – Diet history Approach
- Possible other sources for local and traditional data (FFQ approach)
- Dietary intake of school children and infant – 839 participants – 0-6 years

❑ **Bahrein:** 2002 National Nutrition Survey 2300 + Individuals – 19 yrs and over – 24 Hr recall + FFQ

❑ **Oman :**Survey on frequency of consumption / qualitative study

❑ **Morocco:** National studies – frequency of consumption – qualitative studies /

❑ **Iraq:** 2011 data – 6-12 yr old – 24hr recall and FFQ – 570 individuals ?

Initial Mapping of Arab Food Consumption Data Available²⁰

- ❑ **Qatar** : Qatar Biobank – Qualitative intake for specific food items - Nutrition group in MoPH –
 - New FFQ under design – targeting Qatari Traditional foods / Qatar citizens and residents (for more than 15 years) –
 - Infant formula study – Qatar University
- ❑ **UAE** : Survey 2017 – National Survey (Ministry of Health National Health) ?
Method : FFQ
- ❑ **Lebanon**: Age 0-5 // validating for FFQ under 5 – 10-19 Yrs old Adults , Pregnant Women and elderly – Pending 6-9 Years old //
 - FFQ for time based products and for Rice and for spices and herbs
 - Milk intake
 - Children study – 2012 – 0-5 years old – 899 participants

Initial Mapping (Continued)

- ❑ **Kuwait:** Annual Surveillance System – FFQs – based on adequacy of intake – older methodology
 - National Nutrition Survey – 2003 – National Kuwait Survey
 - Unpublished data – hospital recruitment / targeted recruitment
- ❑ **Palestine:** West Bank – First Palestinian National Health and Nutrition Survey – 2000 – 3602 participants – adults – 24 Hr recall –
 - West Bank – 2014 – Health Behaviour in School Aged children 1900 participants 11 16 Years old – 24 hr recall and validated a FFQ –
 - Daily Dietary Intake
 - Gaza Survey Representative the population – Adults – 24 Hr recall – 2 non-consecutive days - 3000 participants. 2021
- ❑ **Jordan:** 24 hour recall – Food consumption Survey – Household (not individual) 2000 participants - 2021 – FFQ and 24 hour recall (adults only)

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