

Use of Iodized Salt in Processed Foods

World Salt Symposium

Salt Lake City

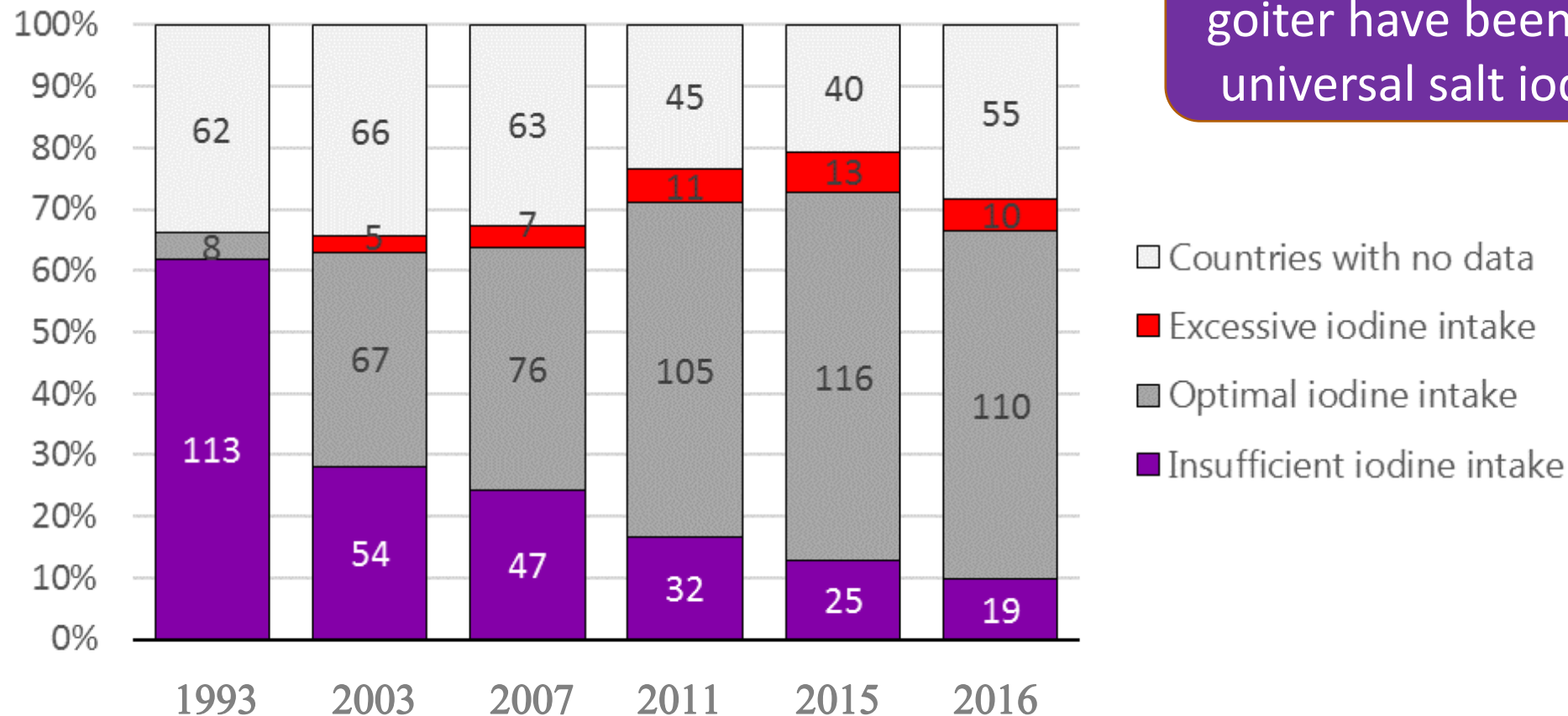
June 20, 2018



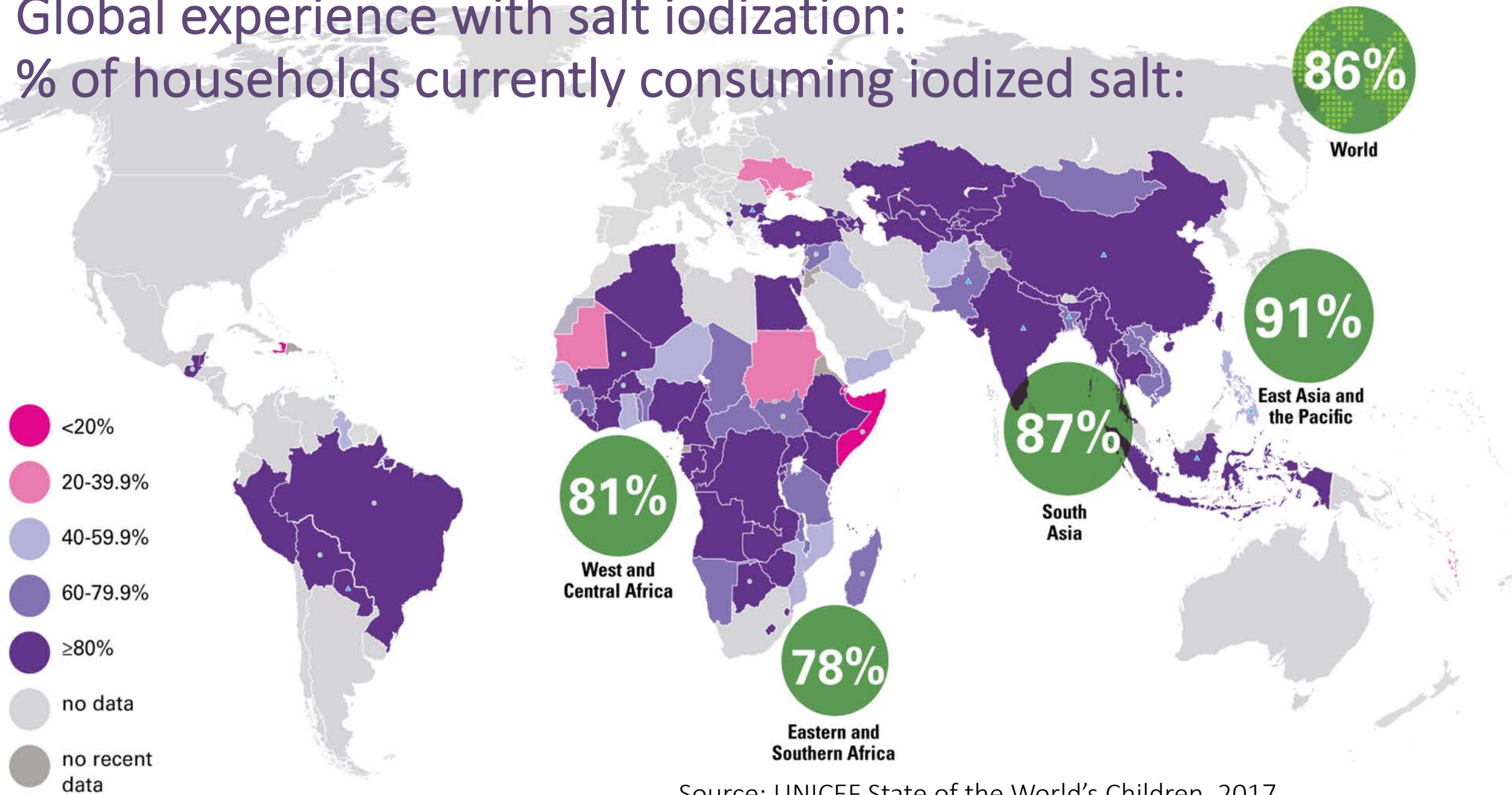
Overview

- Success of salt iodization
- Global trends in processed food use
- Evidence for the contribution of processed food to iodine status
- IGN's role in understanding these trends
- Providing guidance on assessing the contribution of processed foods to iodine intake

Global reduction in number of countries with insufficient iodine intake, 1993 - 2016

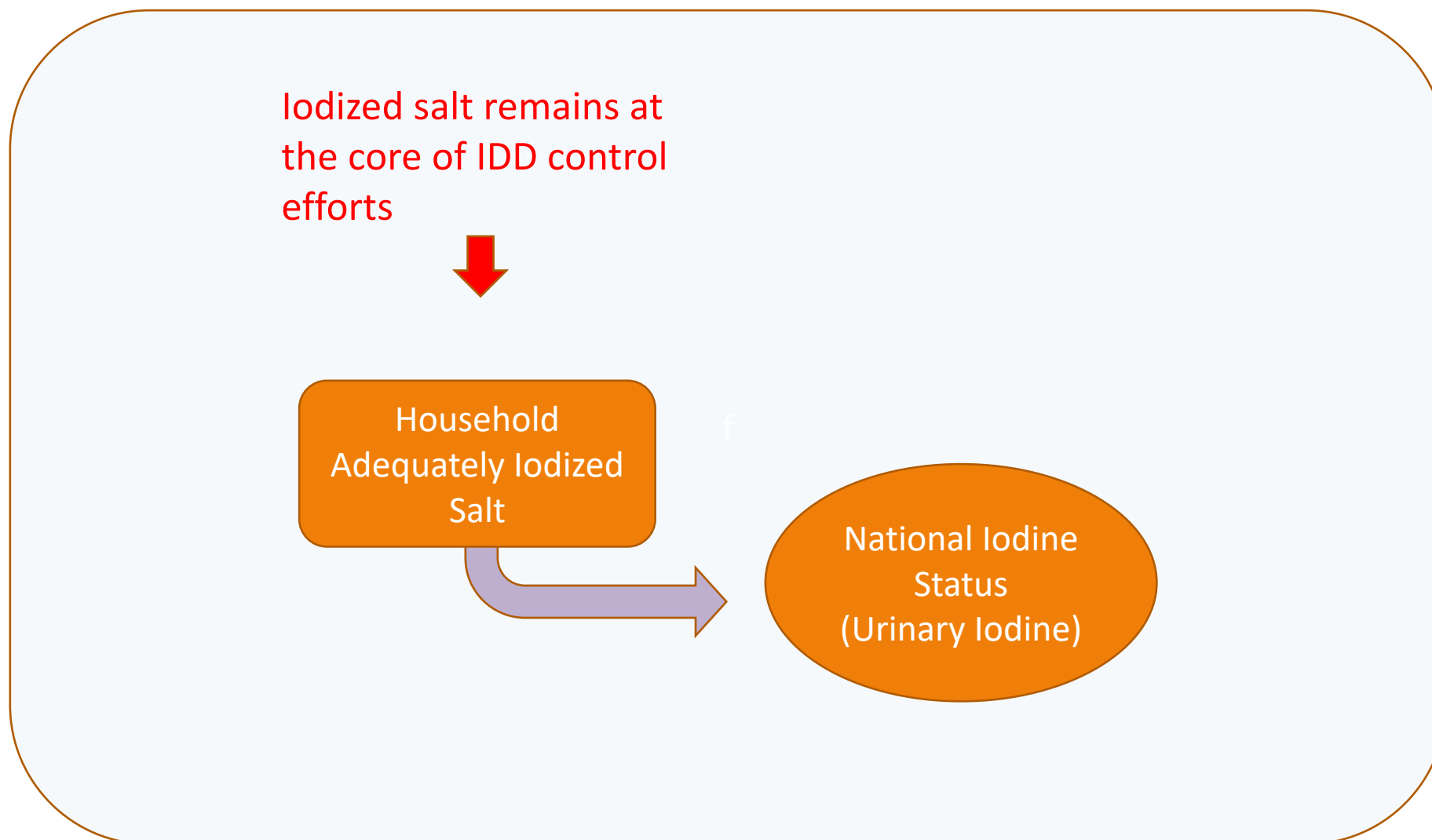


Global experience with salt iodization: % of households currently consuming iodized salt:

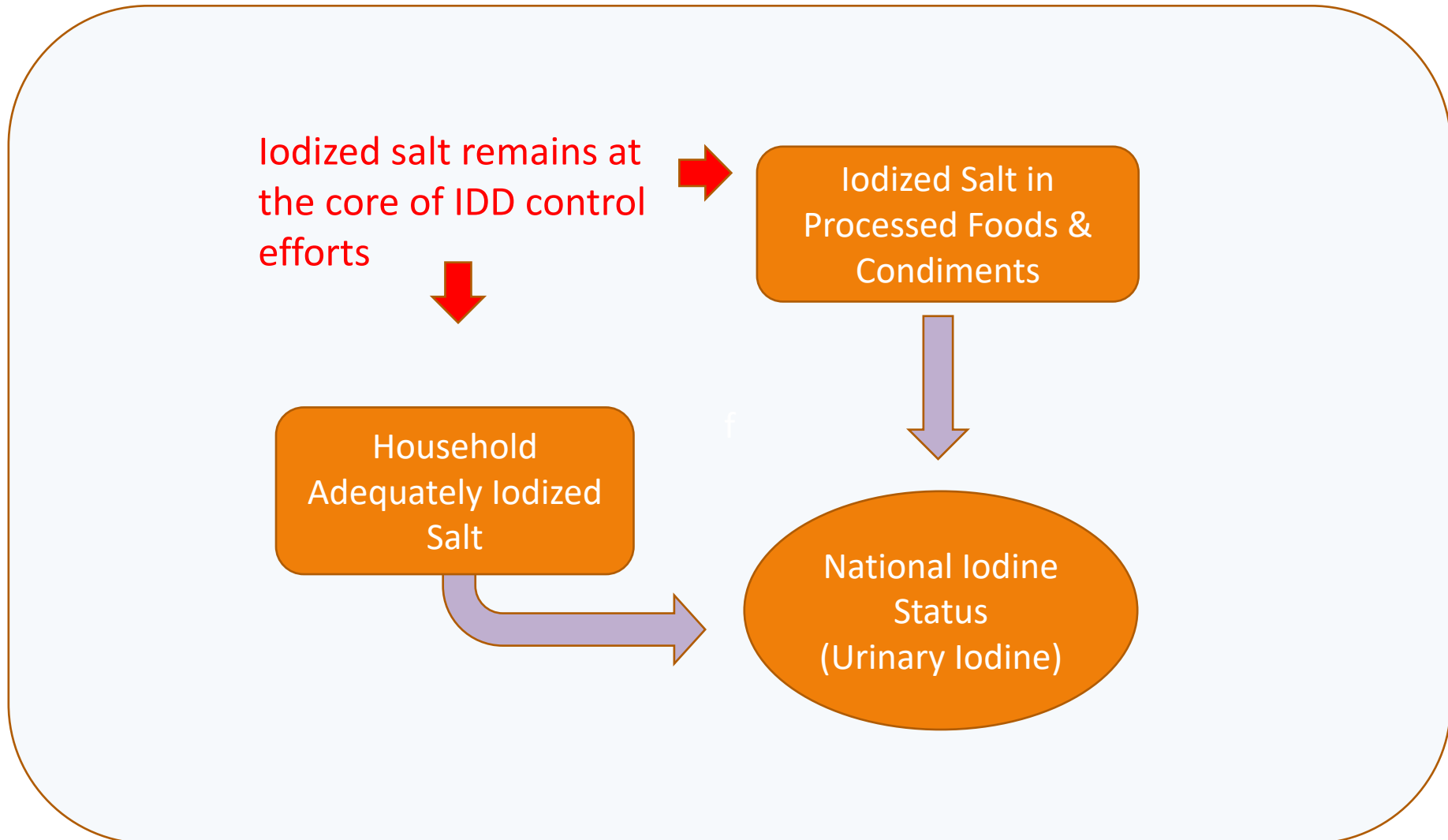


Source: UNICEF State of the World's Children, 2017

“Traditional” salt iodization programs



Universal salt iodization programs



GUIDELINE: Fortification of food-grade
salt with iodine for the
prevention and control of
iodine deficiency disorders



WHO Guideline: Fortification
of food-grade salt with iodine
for the prevention and control
of iodine deficiency disorders

Definition

Processed food:

“any raw agricultural products that has been subjected to cleaning, washing, milling, chopping, cutting, heating, blanching, pasteurizing, cooking, freezing, canning, drying, mixing, packaging, dehydrating or other procedures that modify the food from its natural state.”



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IGN Focus:

- We focus on widely distributed processed foods with high salt content and/or high levels of consumption:
 - Bread
 - Salty condiments – bouillon/seasoning, soya sauce, fish sauce
 - Convenience foods – instant noodles
 - Preserved foods – processed meat/fish, pickles
- These foods are contributing significantly to salt intake, and hence have the potential to contribute to iodine intake

Regional Trends in Processed Food Consumption

- “North America is the largest market for processed food due to increased snacking trend”
- “Europe has high demand for high quality and nutritious food. The strict government regulations is the major challenge in this market”
- “Processed food market is fast growing in Asia pacific region due to increase in population and increase in consumer buying power. The consumer spending in India on processed food is expected to grow to US\$ 3.6 trillion by 2020”
- “In Latin America, urbanization and modernization is creating a demand for processed food”
- “Low market penetration is the major restraint in Africa”

Market predictions

“2017 Global Processed Food & Beverage Industry Outlook:

- ...total global expenditure on processed food and beverage products by final consumers will grow to **\$4.675 trillion in 2017”**

Contribution of processed foods to sodium/salt intake

- Most sodium is consumed through processed foods, rather than table salt, in industrialized countries: 71%, 95% and 71% in Japan, United Kingdom and the United States respectively
- In the UK, the largest contributors to sodium purchases were table salt (23%), processed meat (18%), bread and bakery products (13%), dairy products (12%), and sauces and spreads (11%).
- In contrast, table salt continues to be the main source of sodium in China, with processed foods and condiments contributing only 18.7%

Sources:

Andersen et al. Dietary Sources of Sodium in China, Japan, the United Kingdom, and the United States, Women and Men Aged 40 to 59 Years: The INTERMAP Study. *J Am Diet Assoc.* 2010 May ; 110(5): 736–745. doi:10.1016/j.jada.2010.02.007.

Mhurchu et al. Sodium content of processed foods in the United Kingdom: analysis of 44,000 foods purchased by 21,000 households. *Am J Clin Nutr.* 2011;93:594–600.

Du et al. Understanding the patterns and trends of sodium intake, potassium intake, and sodium to potassium ratio and their effect on hypertension in China. *Am J Clin Nutr* 2014;99:334–43

Estimates of actual or potential iodine intake from processed foods

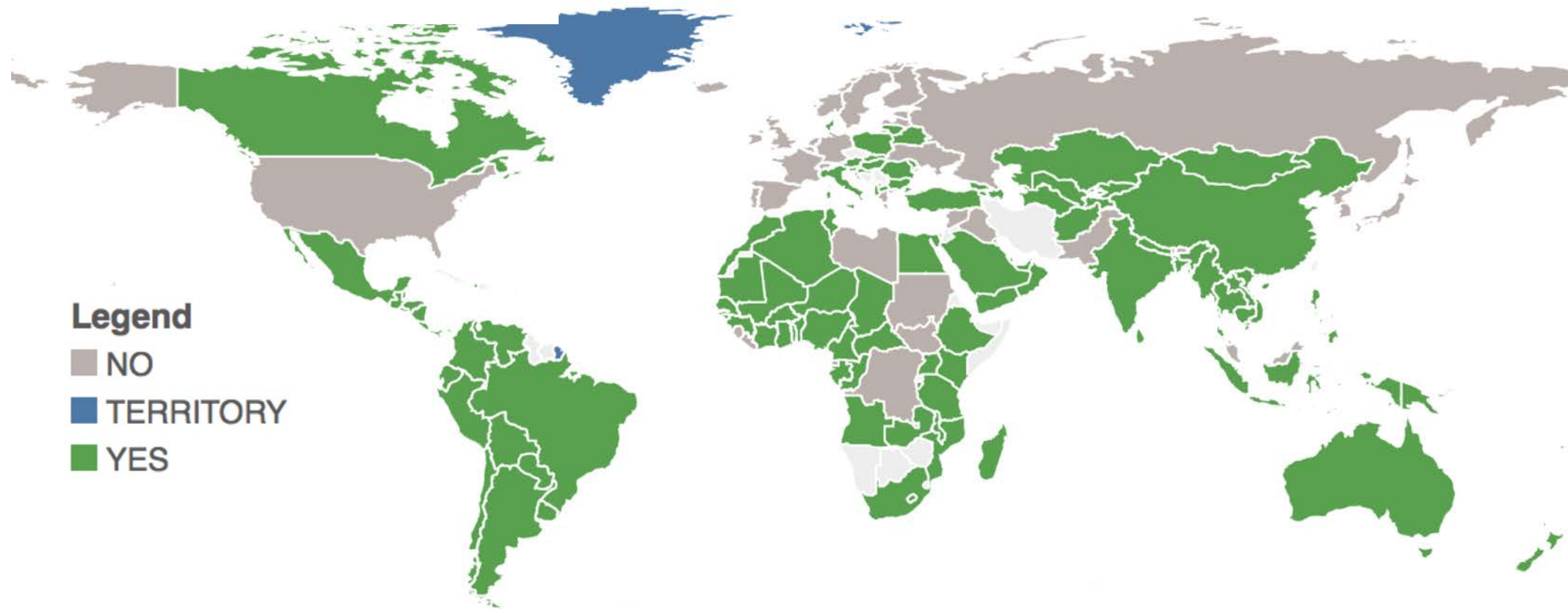
Country	Food	% adult RNI
Egypt	Baladi bread	50%
Indonesia	Instant noodles	6%
	Stock	4%
	Soy sauce	1%
	Bread, chili sauce & biscuits	<1% each
Philippines	Bread	8-10%
	Instant noodles	7-9%
	Canned fish	8-18%
	Soy sauce	8%
Ukraine	Bread	32%
Russian Federation	Bread	37%

Australia has achieved adequate iodine intake due to mandatory iodization of bread salt



- Legislated for mandatory iodization of bread salt in 2009
- Mean iodine level of bread: <2ug/100g ► 53-70ug/100g
- Mean iodine intakes:
 - Women 16-44 years: 98ug/day ► 149ug/day
 - Children 2-3 years: 127ug/day ► 164ug/day
- Proportion of population with iodine intakes below Estimated Average Requirement (EAR):
 - Non-pregnant women 16-44 years: 60% ► 9%
 - Pregnant women 16-44 years: 100% ► 65%
 - Children aged 2-3 years: 9% ► <1%

108 countries with mandatory legislation for salt iodization



Legislation for use of iodized salt in processed food

- Of the 108 with mandatory salt iodization legislation, 96 include salt used in processed foods
- In Australia, Belarus, Lithuania, New Zealand while use of iodized salt in processed foods, particularly bread, is mandatory, it is voluntary for household salt
- Countries with mandatory salt iodization that does not include salt for processed foods include: Argentina, Canada, Bangladesh, India, Italy, Kenya

Effect of iodized salt on processed foods

- Recent literature review identified 36 studies looking at impacts upon 38 types of foods



Effect of iodized salt on processed foods

- **No or very limited impact on these foods**, with all found to be acceptable to consumers
- Retention of iodine varied:
 - zero (canned green beans)
 - 100% (sweet biscuits and breakfast cereal)
 - high (>60%) in a large variety of foods including fermented fish, fish sauce made in the shade, some bread, processed meats and fish and some pickles.

IGN Role

- Facilitated selected studies in several countries to explain discrepancies between measures of iodine status and % of households using iodized salt
- Reviewed different methods to estimate salt content for widely distributed processed foods
- Helping redefine Universal Salt Iodization as including processed foods

Programme Guidance on the Use of Iodised Salt in Processed Foods

- Designed for program managers to assess contribution of processed food to iodine intake
- Divided into 6 modules
- Provides step by step approach for analysis
- Suggests specific steps to improve understanding and move toward true 'universal salt iodization'

Guidance Modules

1. Overview and rationale
2. Completing a situation analysis
3. Improving legislation
4. Methods to assess the contribution
5. Enabling factors
6. Potential challenges

Module 4: Methods to assess the contribution of processed foods

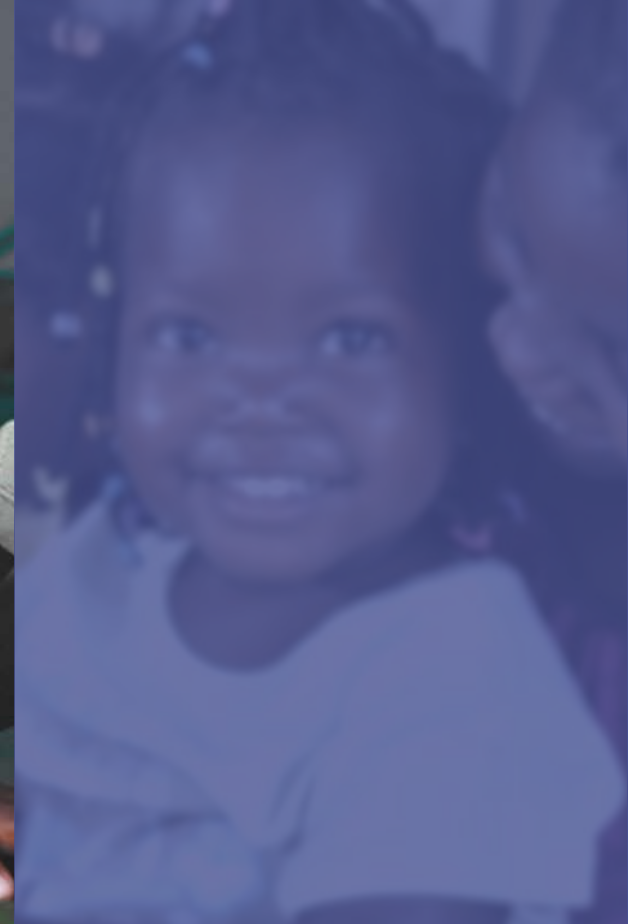
- Guides identification of key salt-containing processed foods
- Guides estimation of salt content and contribution to daily intake
- Helps estimate the proportion of salt used that is iodized
- Models the contribution or potential contribution to iodine intake

Conclusion

- Salt iodization is perhaps one of the most successful public health interventions of the past decades
- Household use of iodized salt has gone from 20% globally to over 75% currently, and has been the focus of salt iodization efforts
- Yet the contribution of processed foods is not known, and critical for countries struggling to meet iodine status goals
- Use of iodized salt in processed foods has the potential to:
 - Contribute to adequate iodine status in remaining deficient countries
 - Ensure achievements in iodine status are maintained as consumption of processed foods increases



**Thank
you!**



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