

# Project Rationale & Overview:

## *Food Fortification to Reduce Micronutrient Malnutrition*



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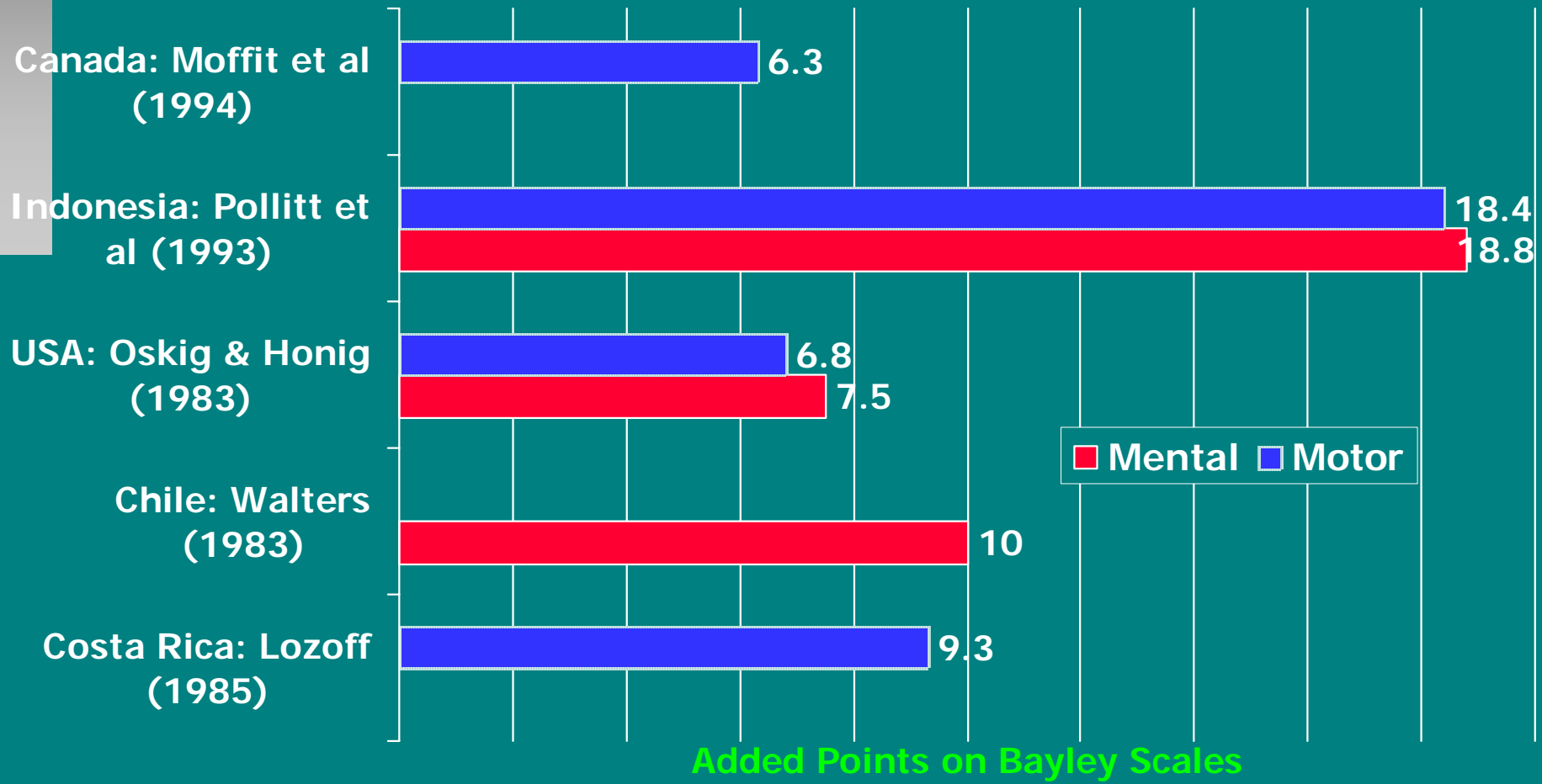


# *Success in Micronutrient Interventions*

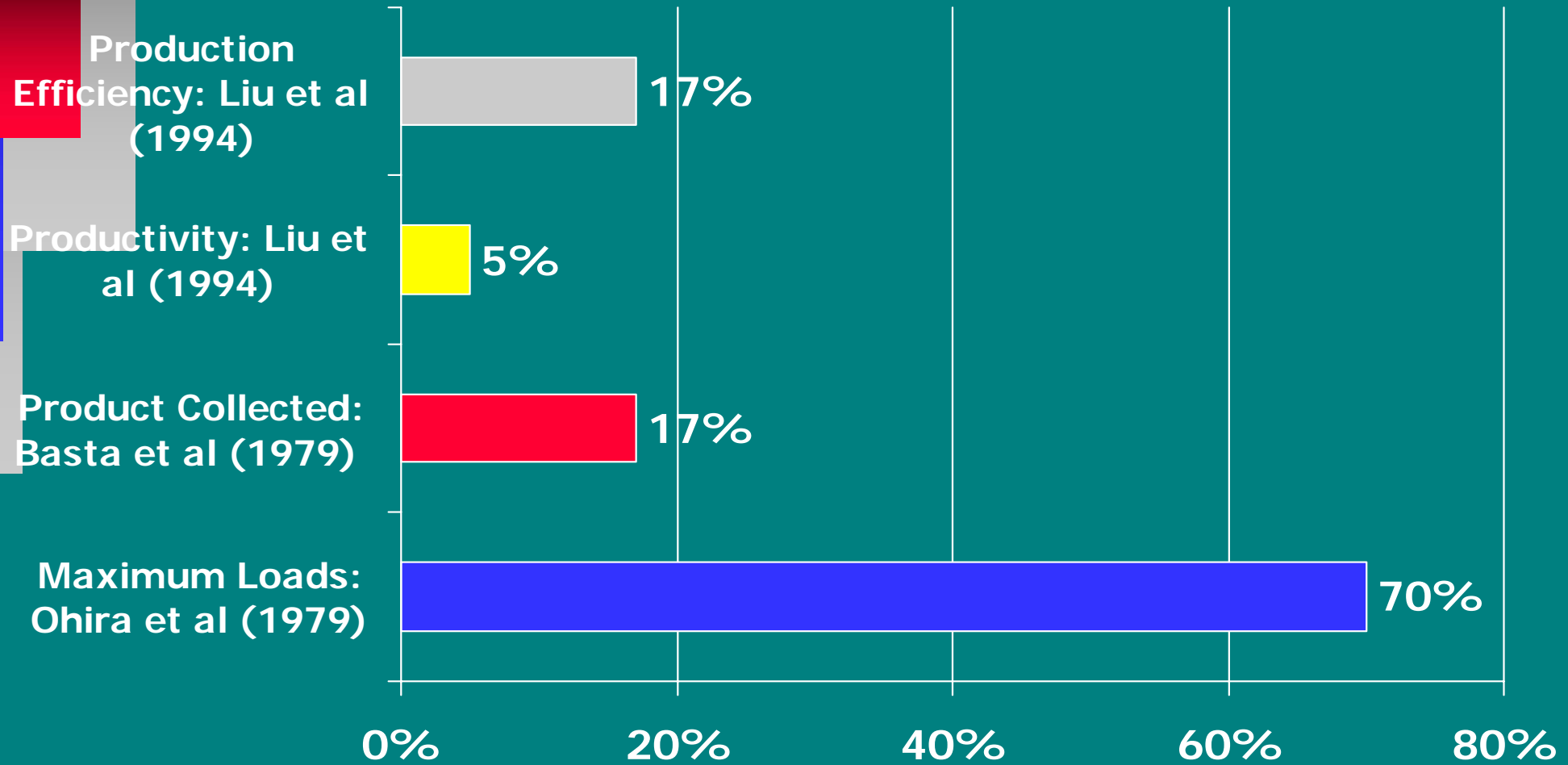
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- *Mortality & Morbidity*
- *Social & Economic Development*
- *Quality of Life*
- *Human Rights*

# *Cognitive Impact of Improved Iron Status in Children*



# *Productivity Increase with Improved Iron Status*



# *Estimates of Economic Loss from IDA (Ross & Horton)*

	Per Capita Loss	National Loss	% GDP
	USD	USD	%
Bangladesh	4.19	495,000,000	1.9
India	4.05	3,761,000,000	1.3
Pakistan	3.67	499,000,000	0.85

# *Why Fortification?*

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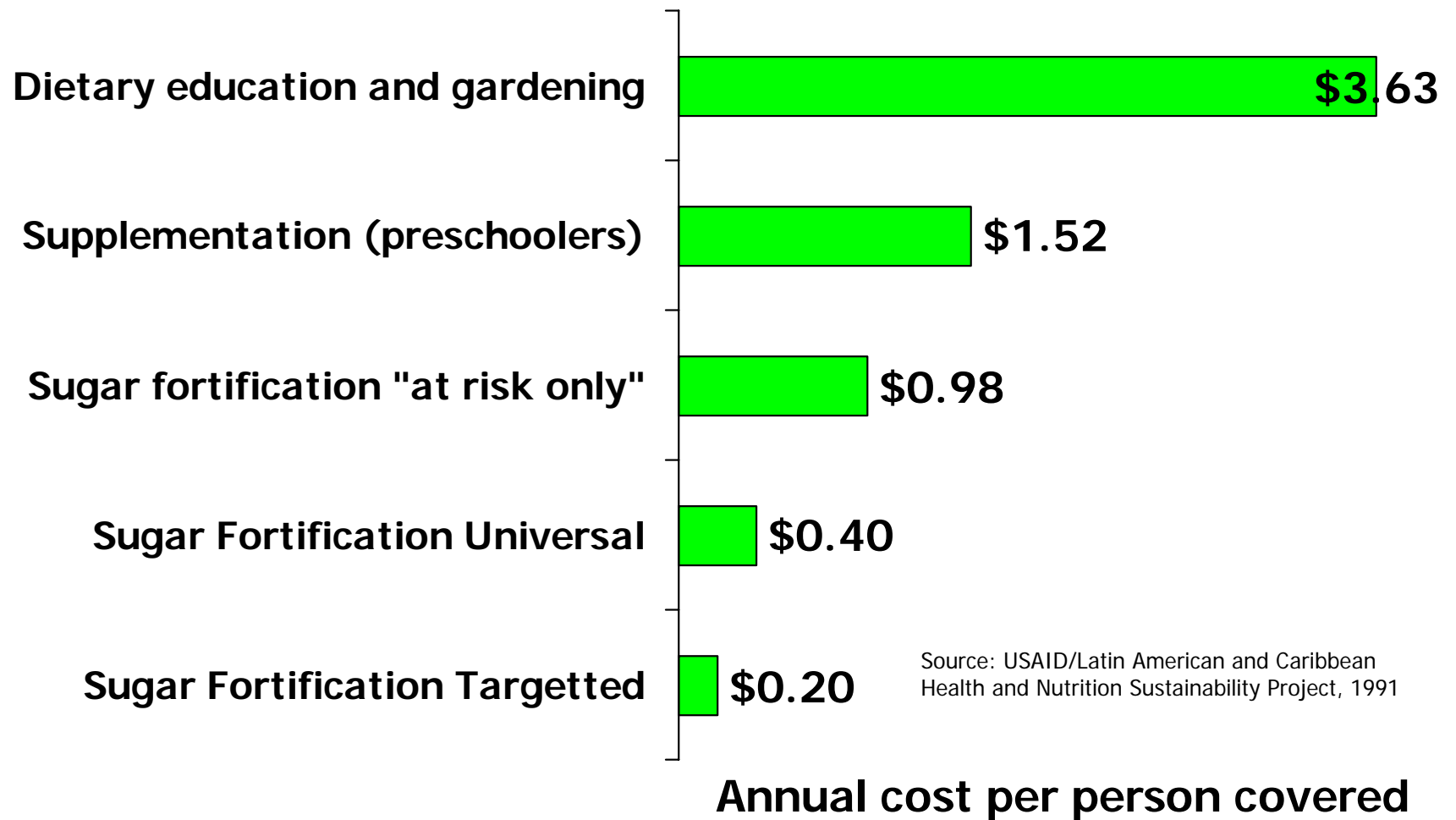
- *Strategic Advantages in Intervention Package*
- *Models for Industrial Country Impact*
- *Models for Developing Country Impact*
- *Adapting Products to Developing Countries*

# ***Strategic Advantages of Food Fortification***

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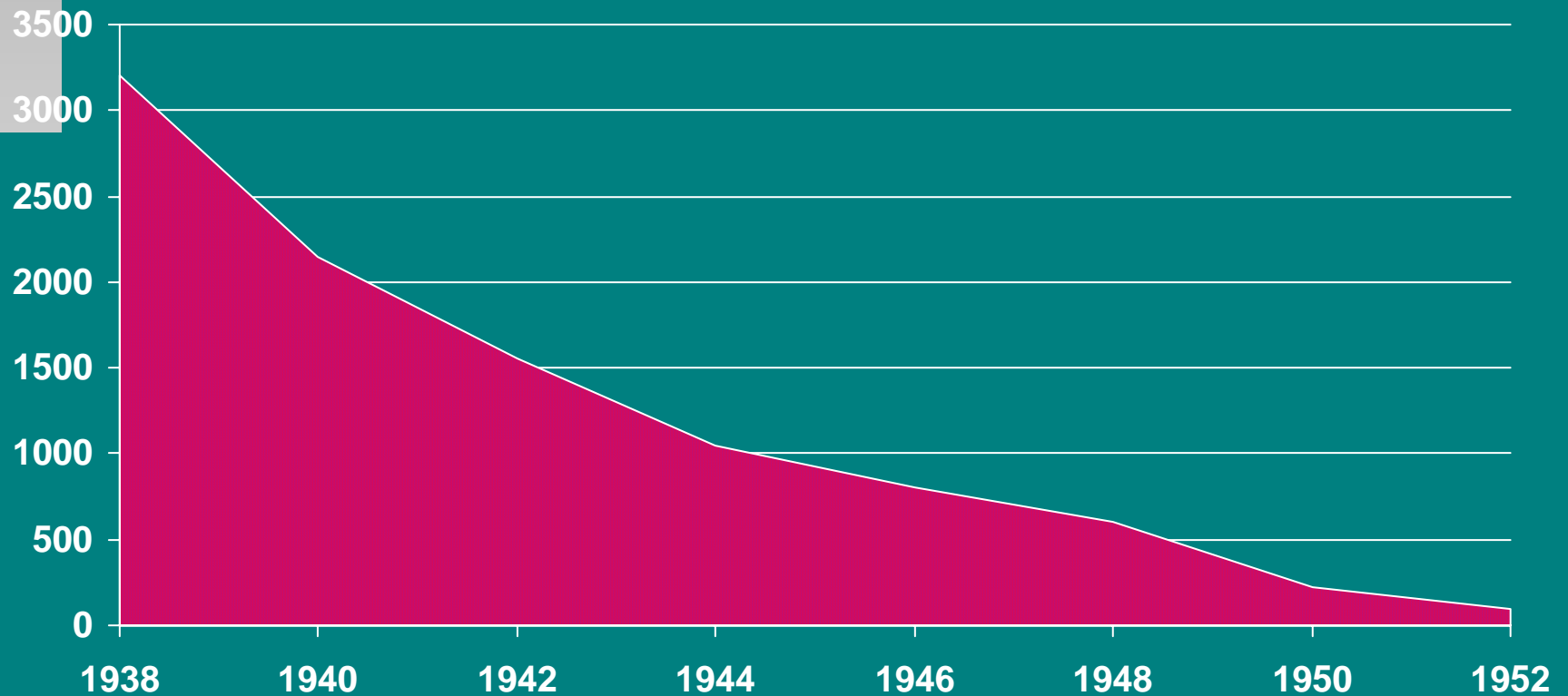
- *Consistent Delivery Maximizes Benefit*
- *Safety in Low Daily Doses*
- *Minimal Behavior Change*
- *Enhances Health & Nutrition Strategies*
- *Transfers Costs of Protecting Health to Sectors otherwise not involved*
- *Cost Effective*

# Cost-Effectiveness Analysis: Vitamin A Interventions Guatemala

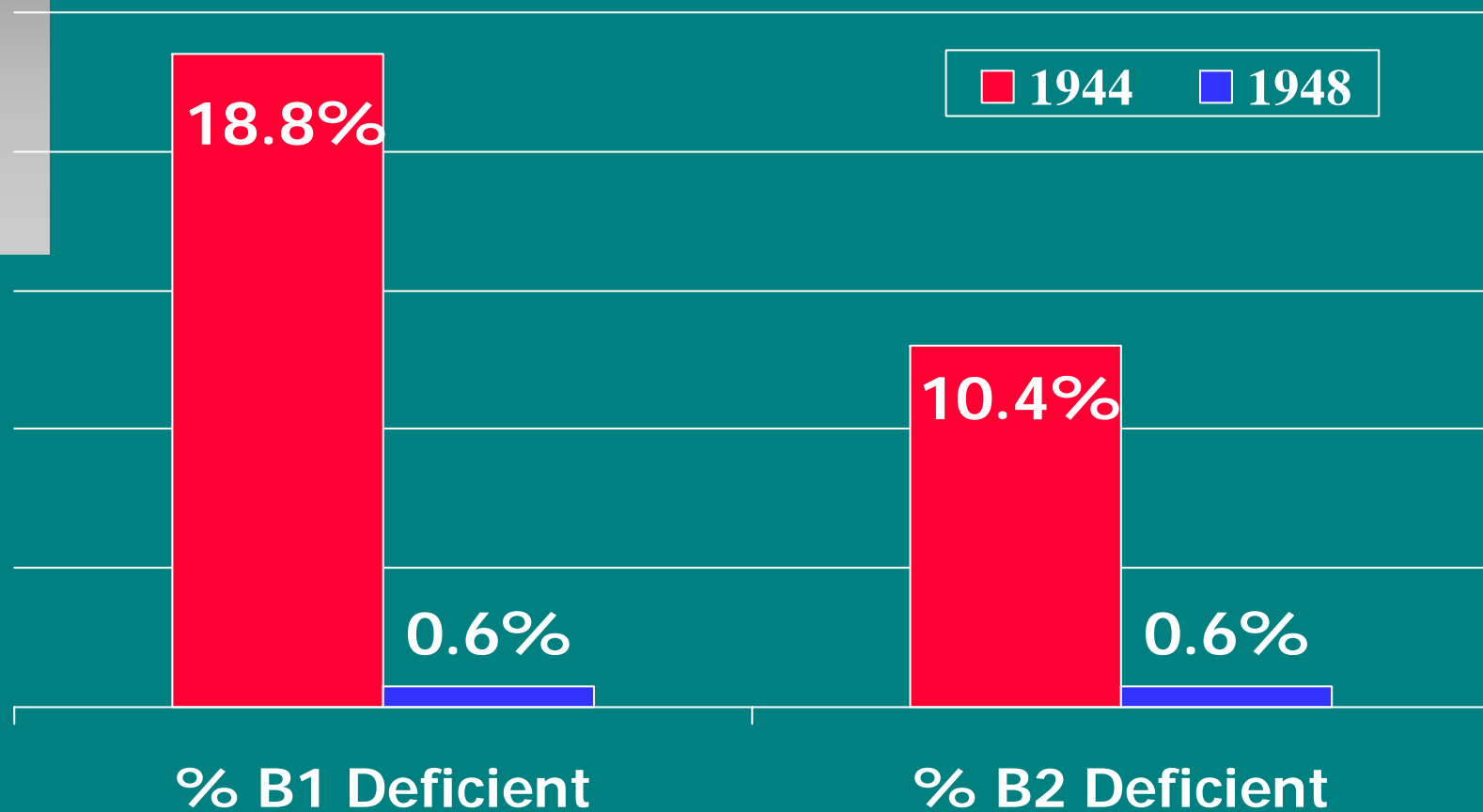


# *Industrial Country Impact Flour Fortification In USA*

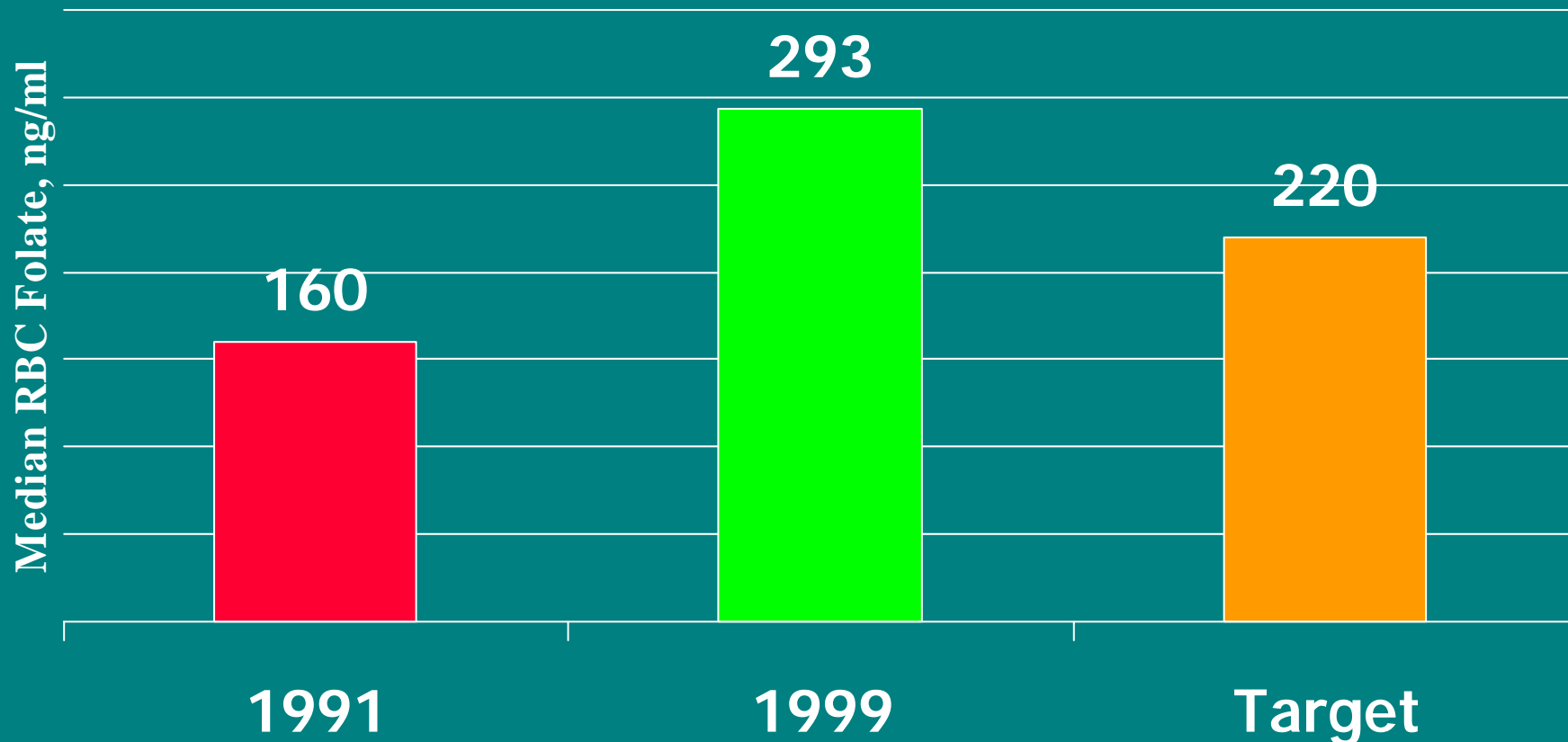
## Deaths from Niacin Deficiency



# *Industrial Country Impact Flour Fortification in Canada*

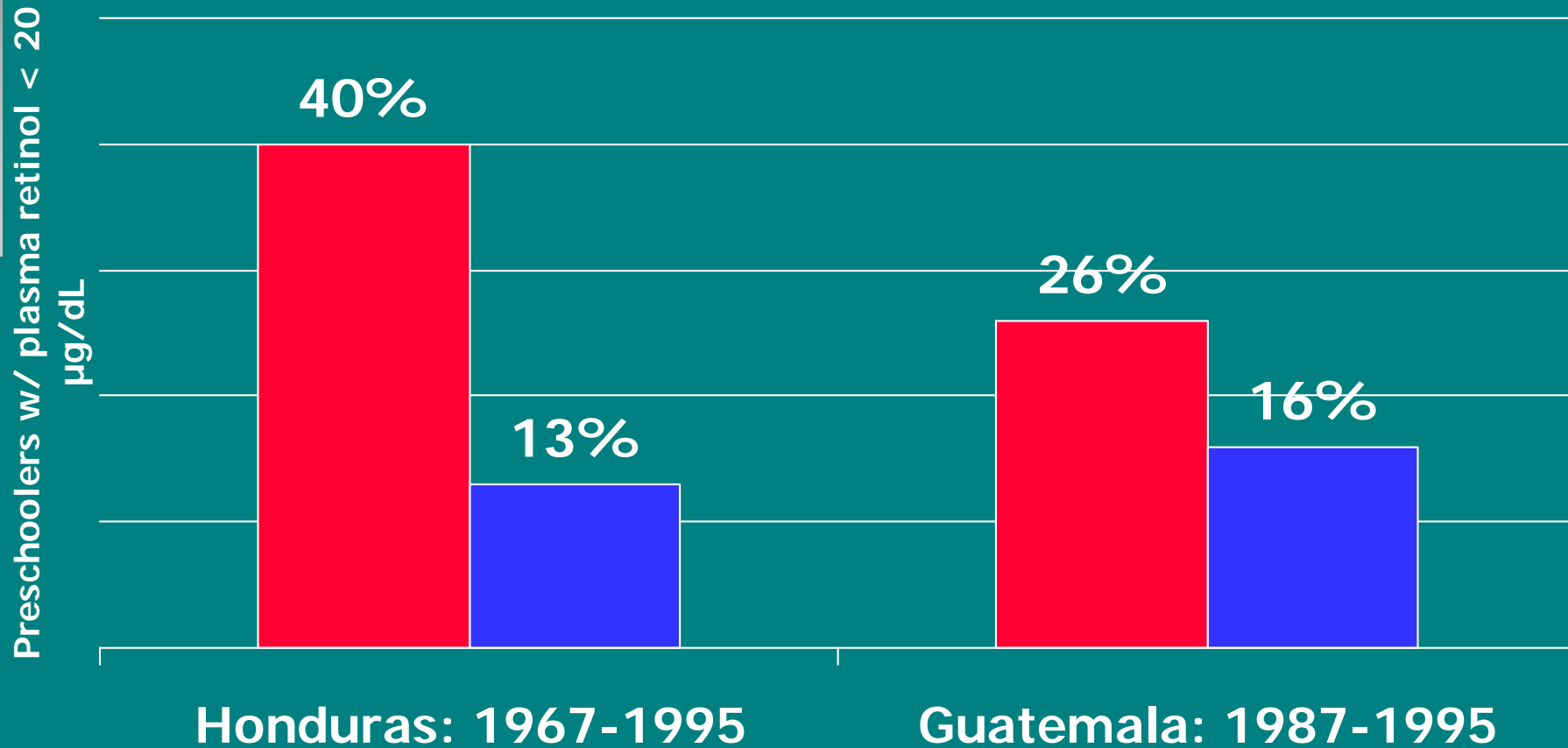


# *Industrial Country Impact Flour Fortification In USA*



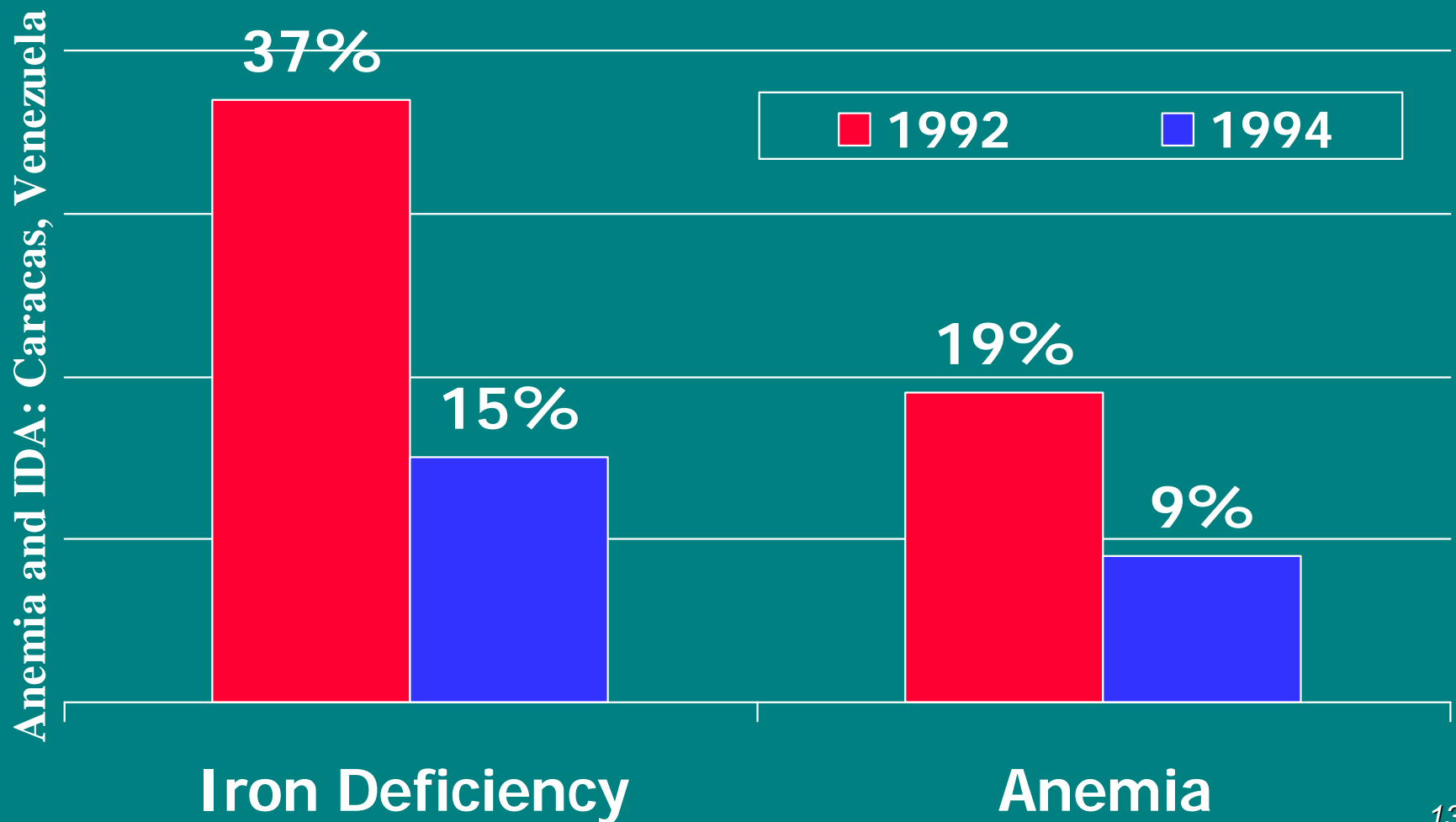
**Fortification Begins mid-1997**

# *Developing Country Impact Sugar Fortification Central America*



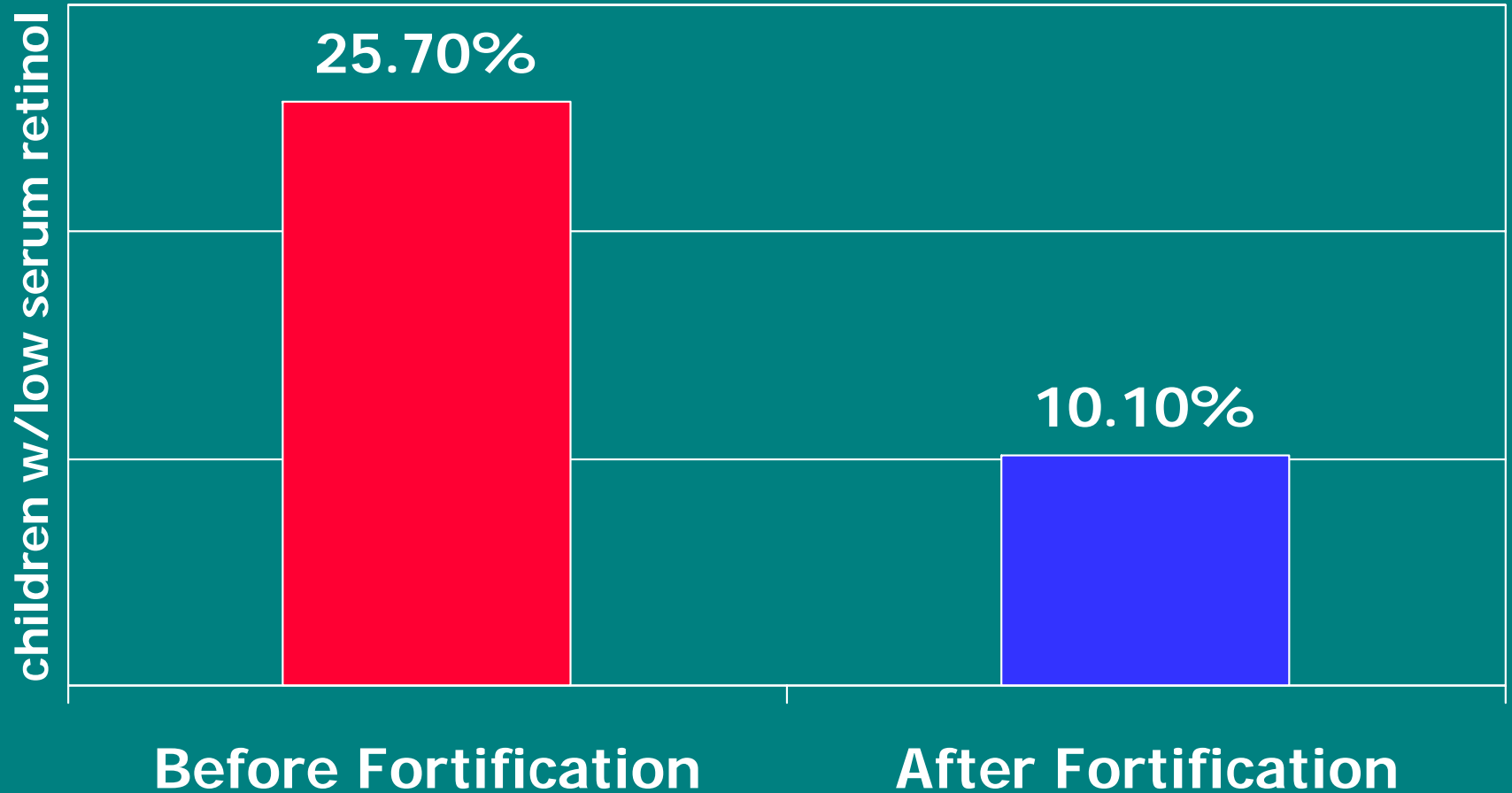
# Developing Country Impact

## Venezuela WCF & PCF Fortification



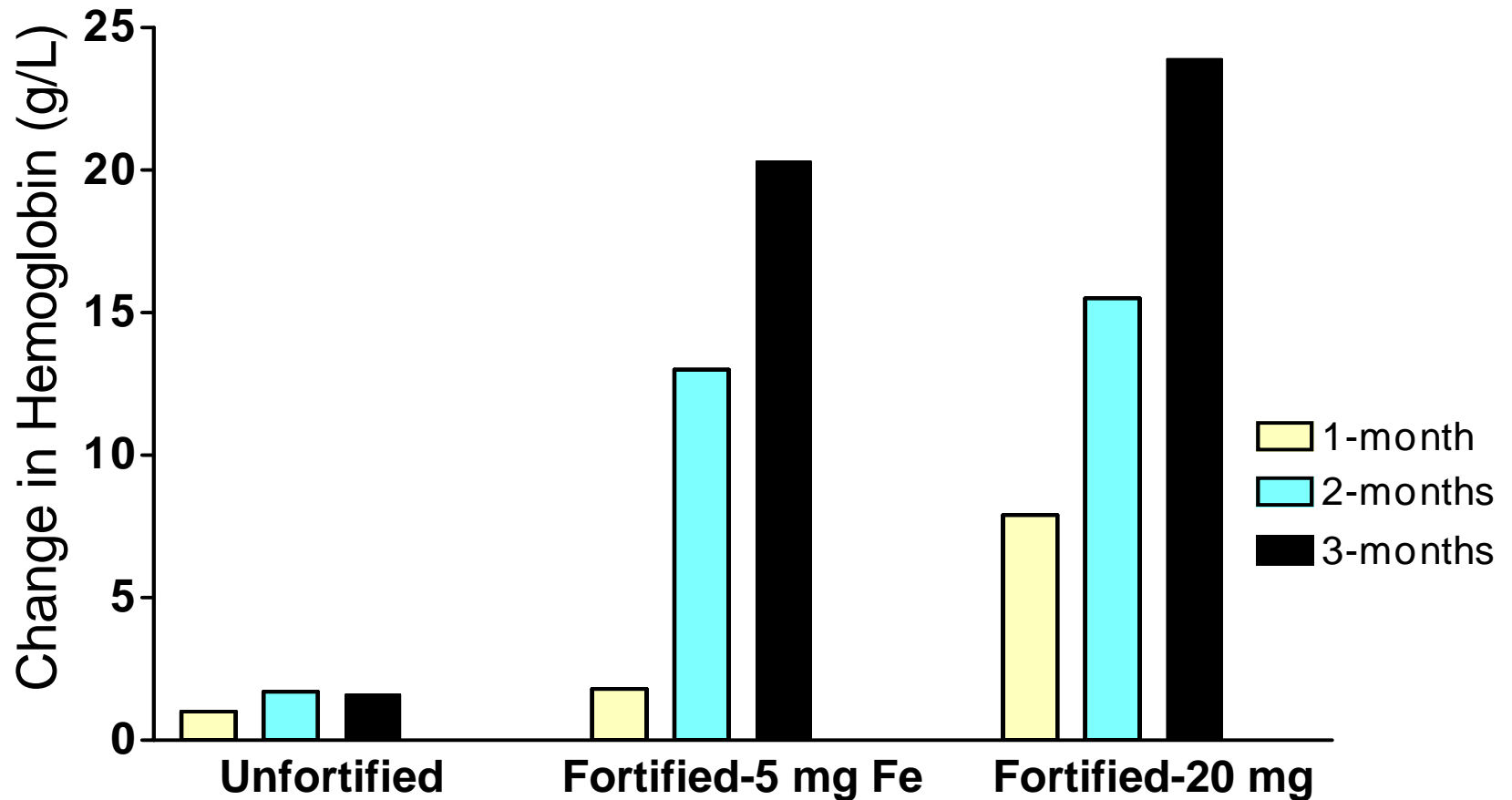
# *Adapting New Products*

## *Philippines: Shelf Stable Margarine*



# *Adapting New Products*

## *China: Iron Fortified Soy Sauce*





# *Starting Points: Regional Vision of the Manila Forum*

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- *All salt for human consumption iodized*
- *Flour fortification an integral part of MNM control strategies*
- *Fortification of cereals, oils, condiments and industrially processed complementary foods encouraged*

# *Starting Points: Manila Forum Defined National Actions*

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- *Update prevalence and health data*
- *Undertake food industry & market analysis*
- *Project impact of fortification and benefits*
- *Review and amend food laws & regulations*
- *Review and amend public policy & programs*
- *Develop systematic food control regulations*
- *Develop monitoring & nutrition surveillance systems*
- *Address financial barriers and develop incentives with cost-sharing among public and private sectors.*

# *Starting Points: Manila Forum Defined Regional Actions*

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- *Develop framework for regional trade harmonization including guidelines for fortification levels, standards, etc.*
- *Undertake regional advocacy to ASEAN, SAARC and WHO, trade/business and health organizations*
- *Assess potential for commercially viable industrial complementary foods*
- *Identify Regional Centers of Excellence to address cross-cutting issues*

# *Key National Needs: Summary of National Discussions*

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- *Review national food law in relation to mandatory standards*
- *Review policies governing food market and price controls*
- *Review food control system for capacity to systematically enforce food standards – including fortification*
- *Review population monitoring & nutrition surveillance*
- *Conduct situation analysis review of industry capacity and investment environments for food fortification*
- *Develop a social marketing activity to create a favorable policy environment and demand for fortified products*

# *Key Research Priorities: Summary of National Discussions*

- *Bioavailability of iron in various food products*
- *Fortificant stability in Asian storage/distribution conditions*
- *Efficacy trials in an Asian setting for all major food vehicles*
- *Palatability studies for Asian consumer acceptance*
- *Themes and testing of social marketing messages*
- *Impact of fiscal/tax incentives on production/consumption*
- *Feasibility of Regional production of vitamins, minerals and premix*

# *National Food Vehicle Priorities: Summary of National Discussions*

	Salt	White Flour	Atta Flour	Veg Oil	Fish/Soy Sauce	Sugar	Comp. Foods	Other Foods
Vitamin/Mineral	I, FE	FE, multi	FE, Multi	A	Iron, I	A	Multi	
China	X	X		X	X			
Indonesia	X	X		X			X	
India	X	X	X	X		X	X	chakki
Pakistan	X		X	X			X	
Thailand	X	X			X		X	UHT Milk
Vietnam	X			X	X	X	X	Noodle Sachet

# *RETA Objectives*

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- *Define & Quantify National Actions*

  - Multi Sectoral Teams*

  - Public-Private Partnerships*

  - Country Investment Plan*

- *Framework for Regional Actions:*

  - Regional Technical Work Groups*

  - Information Sharing*

  - Center of Excellence*

# *Cost of Fortification: Per Person Costs Are Low....*

<b>VEG-OIL FORITIFICATION WITH VITAMIN A</b>		
	Annual Per Person Cost	
	Oil Consumption	Cost
	KG/1999	USD
China	7.53	\$0.024
India	8.2	\$0.026
Pakistan	10.5	\$0.034
Indonesia	9	\$0.029
Thailand	5.7	\$0.018

.....*But Total National Cost  
Can Be Significant*

	Oil Consumption KG/1999	Cost USD	Oil Consumption MT/1999	Cost USD
China	7.53	\$0.024	9,578,000	\$30,649,600
India	8.2	\$0.026	8,120,027	\$25,984,086
Pakistan	10.5	\$0.034	1,440,203	\$4,608,650
Indonesia	9	\$0.029	1,884,205	\$6,029,456
Thailand	5.7	\$0.018	351,732	\$1,125,542
Vietnam	2.6	\$0.008	197,588	\$632,282

# ***Partnership Models: Who Invests & Absorbs Cost?***

## ■ ***Public Sector as Primary Investor***

- ◌ *Absorbs Cost in Public Budget*
- ◌ *Targeted Subsidies for High Risk*
- ◌ *Intra-Government Health & Producer Partnerships*

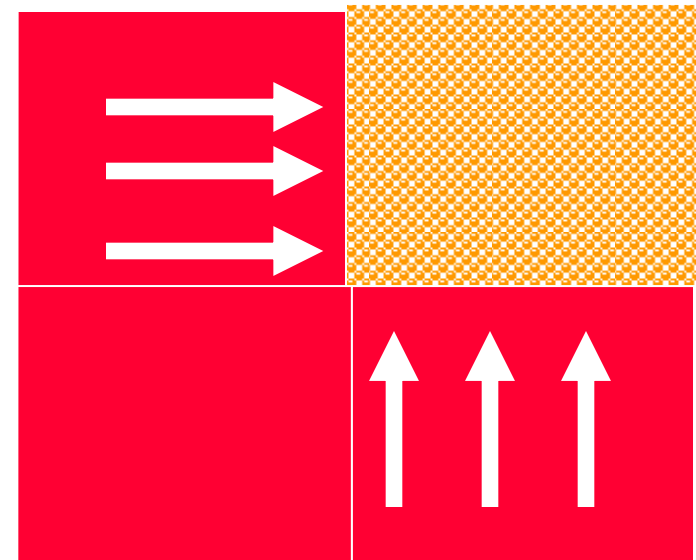
## ■ ***Public Sector as Enabler***

- ◌ *Marketplace (Producer and Consumer) Absorb Cost*
- ◌ *Regulation of Transparent “Playing Field”*
- ◌ *Strategic Assistance*
- ◌ *Public-Private Partnerships*

# *RETA Strategy: Public-Private Partnership Model*

- ***Build on National Priorities and Activities***
- ***Dual Focus of Improved Public Health and Industrial Competitiveness***
- ***Build Capacity and Attract New Investment to Food Fortification***

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