

# Review of school milk programs in developing Asia

Roehlano M Briones  
Consultant, FAO

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# Introduction

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- Aims and scope - provide guidance for establishing school milk programs; demonstrate successful sustainable models
- Rationale for government intervention
  - Address child undernutrition, improve learning outcomes
  - Nutritional benefits of milk → introduce milk in or as school feeding program → often with government subsidy
  - Support local dairy industry

# Story arc

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- Background
- School milk programmes in developing Asia
- Assessment
- Implications

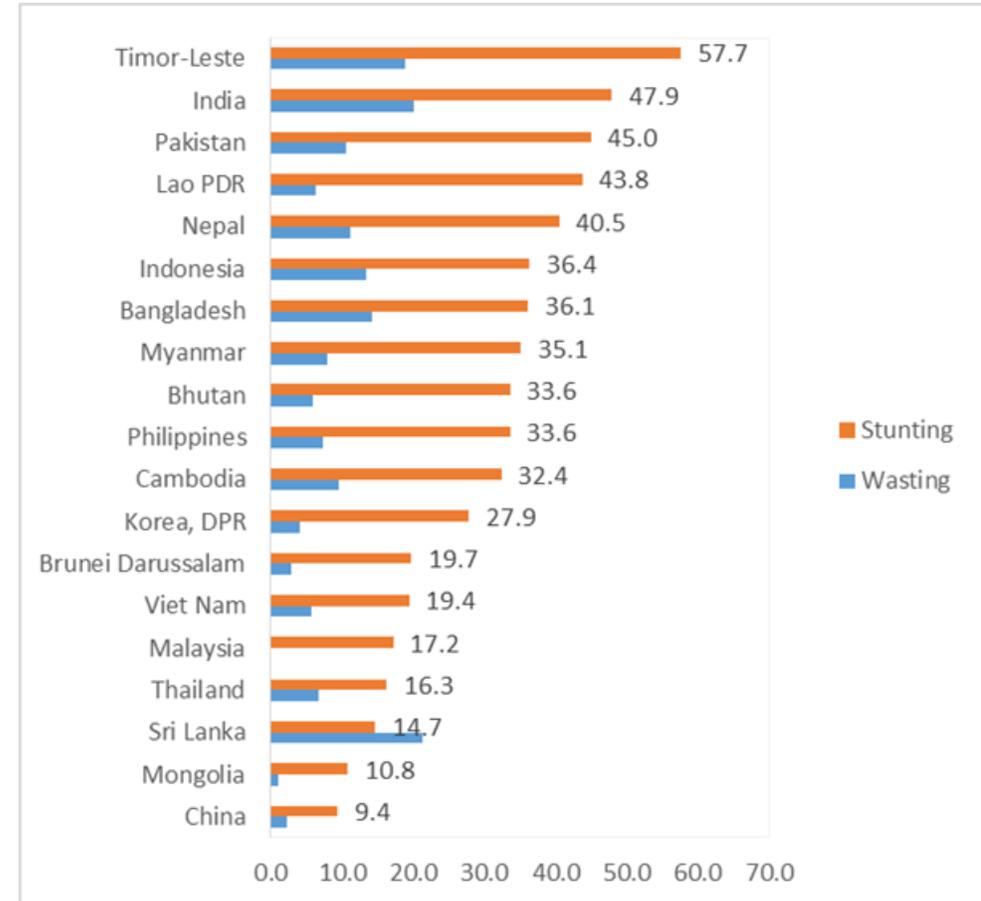
# Background

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# The main problem

Child undernutrition – still high in most of developing Asia

prevalence of stunting and wasting, aged 0-5, most recent period



# Milk supply and demand

With few exceptions, per capita availability of milk in developing Asia is far below that in wealthy countries in the West, though it has recently been increasing.

	2000	2005	2010	2013	Change (%)
Pakistan	151.5	158.4	175.0	183.1	1.5
Mongolia	146.2	130.1	108.3	139.8	-0.3
India	61.7	65.6	80.2	84.5	2.5
Japan	81.7	78.0	72.6	72.1	-1.0
Nepal	40.0	43.6	48.2	52.1	2.1
Afghanistan	41.1	36.9	31.8	31.9	-1.9
Sri Lanka	32.6	28.9	36.1	35.0	0.5
China, PR	8.5	22.7	30.6	32.7	10.9
Myanmar	14.5	21.3	30.4	31.5	6.2
Thailand	23.1	25.6	26.3	29.4	1.9
Korea, Rep.	28.0	27.0	22.7	29.1	0.3
Malaysia	50.5	44.5	35.1	25.3	-5.2
Bangladesh	14.5	17.7	21.0	21.9	3.2
Vietnam	8.2	11.2	14.3	16.4	5.5
Philippines	22.0	13.0	14.6	15.7	-2.6
Indonesia	7.6	9.5	12.9	14.8	5.3
Timor-Leste	11.1	3.6	8.1	11.0	-0.1
DPRK	3.7	6.0	4.1	3.8	0.1
Cambodia	2.9	4.7	2.6	3.5	1.3
Lao PDR	3.1	4.0	2.9	2.9	-0.6
<b>Average</b>	<b>37.4</b>	<b>37.6</b>	<b>39.3</b>	<b>42.3</b>	<b>0.9</b>

# Milk supply and demand

Most Asian countries are close to self-sufficiency in per capita milk supply; over time there is no clear tendency towards 100 percent self-sufficiency.

	Self-sufficiency ratios						Export ratio (2013)
	1963	1973	1983	1993	2003	2013	
Afghanistan	99.7	99.3	98.3	98.2	95.6	88.1	0.0
Bangladesh	95.2	85.5	83.5	87.2	87.9	82.4	0.0
China	99.5	100.0	98.3	97.9	94.6	83.0	0.3
India	97.4	98.6	99.6	100.0	99.9	100.0	1.6
Indonesia	58.2	36.8	26.4	55.9	40.6	34.9	3.2
Mongolia	90.8	82.6	83.3	98.8	96.4	98.3	0.0
Myanmar	48.8	87.8	95.9	89.8	87.9	94.8	0.0
Nepal	100.0	100.0	97.2	98.2	97.7	98.7	0.0
Philippines	6.0	5.0	3.9	1.1	0.6	0.6	5.1
Sri Lanka	58.7	61.7	52.5	57.8	23.1	37.3	1.2
Thailand	2.3	3.5	6.9	15.6	38.0	46.9	14.4
Viet Nam	99.7	99.3	98.3	98.2	95.6	88.1	0.0

# Profile of school milk programs

- School milk accounts for a significant proportion of the demand for liquid milk.
- Support for local dairy industry an underlying motivation for many school milk programs
- Milk often part of school-provided meals

Countries for which at least 1 million children receive school milk, 2013

		Number of children (millions)	Share in target group (%)
1	USA	43.00	80
2	China, PR	20.00	-
3	Iran	13.50	90
4	Japan	9.79	92
5	France	7.00	56
6	Thailand	6.70	85
7	Turkey	6.17	100
8	Korea	3.54	-
9	Mexico	3.20	-
10	Argentina	2.50	41
11	Romania	2.43	100
12	Russia	2.06	15
13	Chile	2.00	45
14	Peru	1.63	65
15	Malaysia	1.40	40
16	Dominican Republic	1.32	90
17	Canada	1.00	35
18	Great Britain	1.00	-

# School milk programmes in developing Asia

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# Profile of school milk programs

	<b>Year started</b>	<b>Name of project/program</b>	<b>Coverage</b>
Bangladesh	2013	Linking School Milk with Smallholder Dairy	17 primary schools
China	2000	National School Milk	Nationwide
India	2006	Dood Sanjeevani	Gujarat state
Mongolia	2006	School Lunch	Nationwide
Nepal	2003	School Milk	Katmandu Valley
Philippines	1995	Local milk feeding	Selected localities
Sri Lank	2014	School milk program	Nationwide (selected)
Vietnam	2016	National School Milk	Nationwide

Programs of nationwide scope - China, Mongolia, Sri Lanka, and Vietnam

# Goals

	<b>Child undernutrition</b>	<b>Lifelong eating habits, awareness</b>	<b>Poor education outcomes</b>	<b>Underdeveloped dairy industry</b>
Bangladesh	H	H	M	H
China	H	H	M	M
India	H	M	H	-
Mongolia	M	M	M	-
Nepal	M	M	-	H
Philippines	H	-	-	H
Sri Lanka	H			H
Vietnam	M	H	-	H

- Highest priority problem addressed by school milk is child undernutrition
- Next highest is the underdeveloped dairy industry

# Modality

	<b>Most common product</b>	<b>Unit</b>	<b>Retail price (local currency)</b>	<b>Price in program</b>	<b>Subsidy per serving (\$)</b>
Bangladesh	Pasteurized milk	200 ml	13.7	1.00	0.16
China	UHT Sterilized Milk	NA	NA	NA	NA
India	Various	200 ml	20	0	0.31
Mongolia	Traditional dairy products	600	NA	NA	NA
Nepal	Pasteurized milk	Liter	70	0	0.13
Philippines	Pasteurized milk	200 ml	11	0	0.22
Sri Lanka	UHT milk	150 ml	20	0	0.13
Vietnam	UHT milk	Liter	33000	8,250	0.29

- Bangladesh, China & Mongolia incorporate milk into school feeding program
- School milk is mostly pasteurized or UHT- treated
- In most countries milk is given for free; regular retail price varies widely

# Coverage

	<b>N° of schools</b>	<b>N° of students</b>	<b>Amount of milk (liters)</b>	<b>Days of serving (per year)</b>
Bangladesh	17	4,000	62,400	78
India	55,730	7,250,000		220
Mongolia		270,000	2,600,000	
Nepal	7	<i>Not available</i>	1,400	<i>Not available</i>
Philippines	30	13,587	191,237	70.4
Sri Lanka	432	114,100		1
Vietnam	6	1,000,000	Not available	<i>Not provided</i>

- The program with serving the most children is in India.
- Also with wide coverage is China (exact data not available).
- Duration of school milk provision ranges from one day per year (Sri Lanka), to as long as 220 days per year (India)

# Annual Cost

	<b>Cost</b>	<b>Allocation of cost</b>	<b>Mode of procurement</b>
Bangladesh	106,860	Mostly private; foreign donor, students	Local procurement
China		Government, donors, students	Open tender
India	134 M	Government, private donor	Local procurement
Mongolia		Government	Open tender, local procurement
Nepal	4,000	Government (some private)	Local procurement
Philippines	900,000	Government 48%; foreign donor 51%; private 1%	Open tender, local procurement
Sri Lanka	31 M	Government	Local procurement
Vietnam	44 M	Government 25-50%; private dairy 25-50%; students 25%	Local procurement

- Nationwide program cost: \$31 million (Sri Lanka) to \$44 million (Vietnam)
- India programs have the widest known scope: \$134 million
- Most common source of funding is government; there is some participation by donors, and students
- Most common procurement mode: local procurement – consistent with high priority for supporting domestic dairy

# Assessment and Implications

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# Impacts

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- School meals – significant positive effects on nutritional status and educational outcomes of children
- Cost of school feeding varies widely; some lower cost examples have had positive effects on nutrient intake and educational outcomes (India)
- Qualitative, before-after, and impact evaluation studies, all point to a positive and significant effect of school milk on nutrition – but findings not universal.

# Other issues

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- School meals generally have a positive net impact on nutrient intake with minimal displacement effect.
- Cost of milk as well as logistics and finance of milk distribution are major obstacles to the development and sustainability of school milk programs.
- Institutional problems also affect the proper implementation
- The typical dairy farm in Asia (with some exceptions) is not competitive producer of milk – though there are opportunities to boost profitability.

# Implications

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1. Where school feeding is implemented, introduce milk and dairy products as healthy options.
2. Implement targeted subsidies for school milk subject to cost-effectiveness analysis.
3. Review design and implementation of school milk programs taking into account constraints such as monitoring and evaluation, logistics, and competitive procurement.

# Implications

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4. Where local procurement is applied for smallholder dairy support, the end goal should be to development of a competitive value chain for school milk and milk products.
5. Ensure engagement of community in school milk program.