

Health, Equity and Education for All: How School Health and School Feeding Programs “Level the Playing Field”



Aulo Gelli, Partnership for Child Development,
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Agenda

- The Challenge: Education For All
- How important are hunger and ill health as barriers to Education For All?
- What do we mean by “**Level the Playing Field**”?
- What interventions and policies work to overcome these barriers?
- What are countries doing now?
- Program focus: school food in low-income settings
- Complex systems and importance of managing trade-offs
- Research agenda

Goal 1 – Slow progress in improving child health

- Millions of children enter school having experienced malnutrition
 - Malnutrition starts in the womb
 - Hunger impairs cognitive development – 83 million children are malnourished in South Asia
 - Rising food prices threaten to increase nutritional deficits

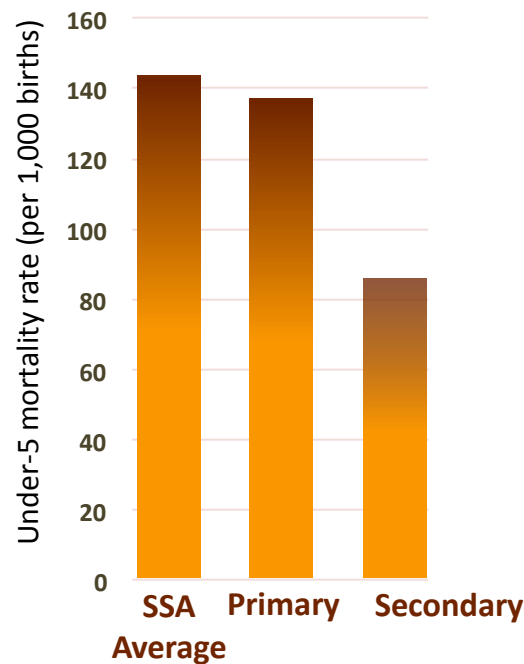
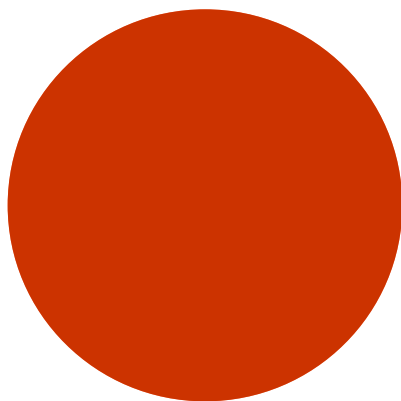
Maternal education matters for child survival

- The education dividend could have saved 1.8 million young lives

Sub-Saharan Africa, 2008

If all mothers had primary education, that number could have been reduced to 4.2 million

And if all mothers had secondary education, that number could have been reduced to 2.6 million



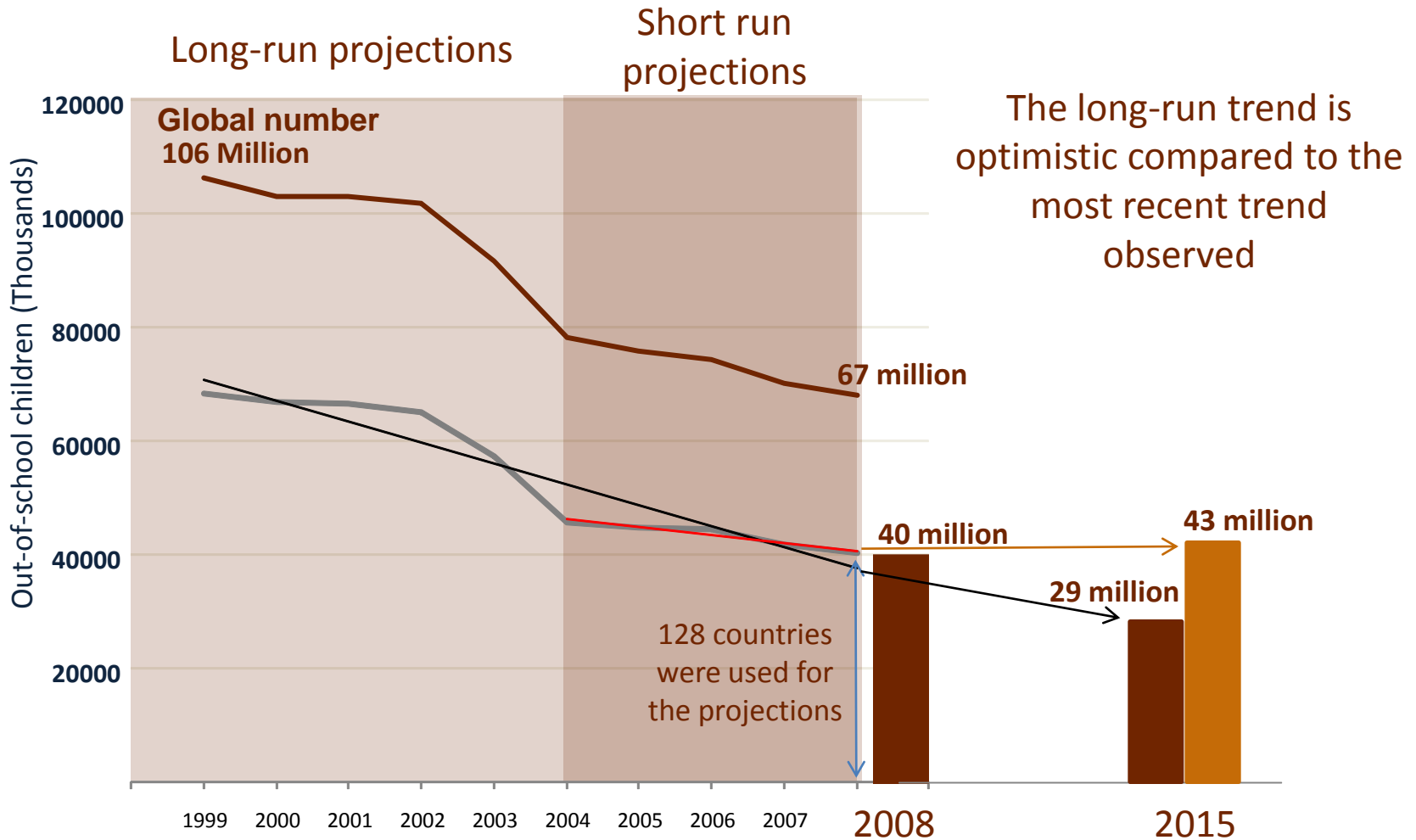
Level of education of the mother

Goal 2 – Universal primary education, a mixed picture

- Progress has been uneven across countries – and unequal within them
 - 52 million more children in school since 1999, improved school retention
 - ‘Success stories’ demonstrate potential for accelerated progress
- However...
 - School dropout is eroding gains in enrolment – 10 million drop-out every year in sub-Saharan Africa
 - Poor quality and unequal access limit progress

67 million children out of school in 2008

Still 67 million children out of school, and progress is slowing



Getting left behind – drivers of marginalization

What are the causes?

- Educational marginalization is driven by interacting layers of disadvantage

Five key interactions

1. Poverty, vulnerability and child labour
2. Group-based disadvantages (ethnic and linguistic minorities, indigenous people, caste)
3. Location and livelihoods (pastoralists, slum dwellers, conflict areas)
4. Disability
5. HIV and AIDs

Context



Pupil to classroom (and pupil to teacher) ratios ~60-80

(Source WFP school level surveys, 2002-2006)

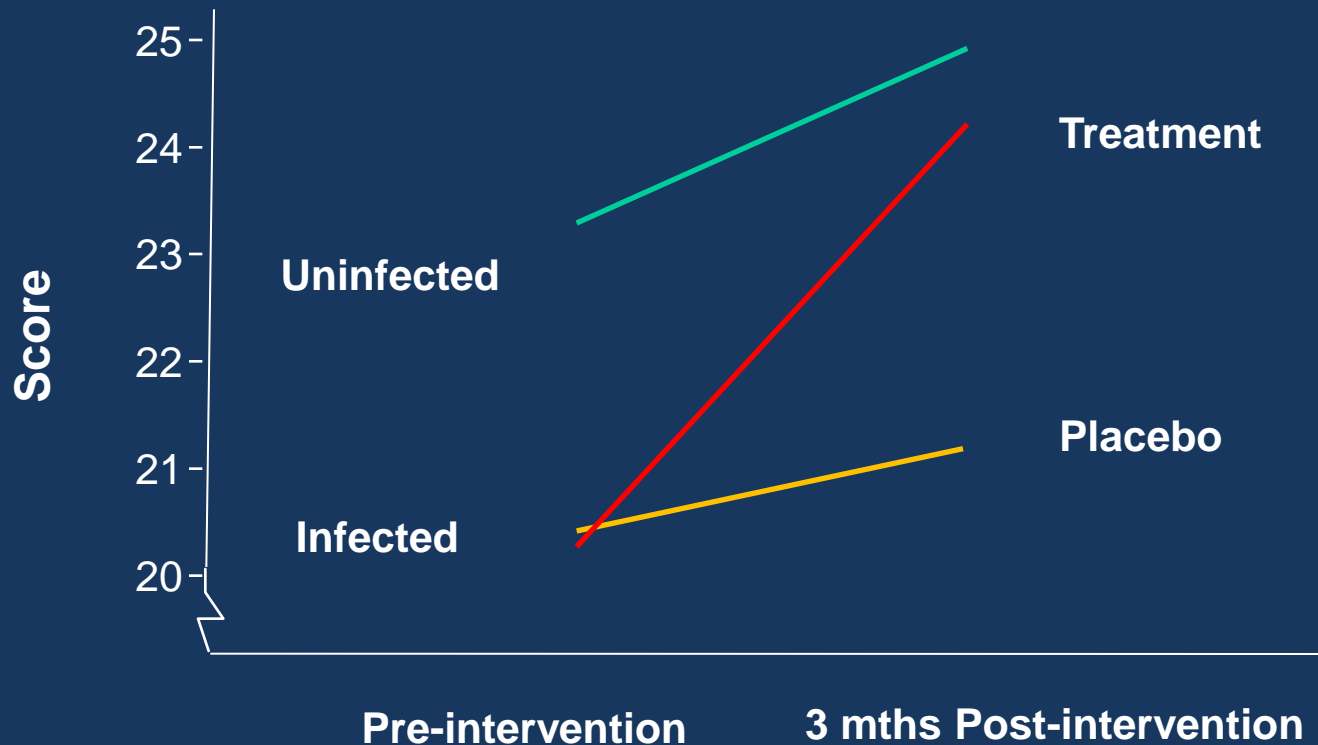
How Important are Hunger and Ill Health as Barriers to Achieving Education For All?

	Prevalence	Total Cases (millions)	IQ points lost per child	Additional cases of IQ <70 (millions)	Lost years of schooling (millions)
Worms	30%	400	3.75	15.8	201
Stunting	52%	292	3	21.6	284
Anemia	53%	350	6	45.6	524

Source: Jukes et al. *Levelling the Playing Field*. 2007.

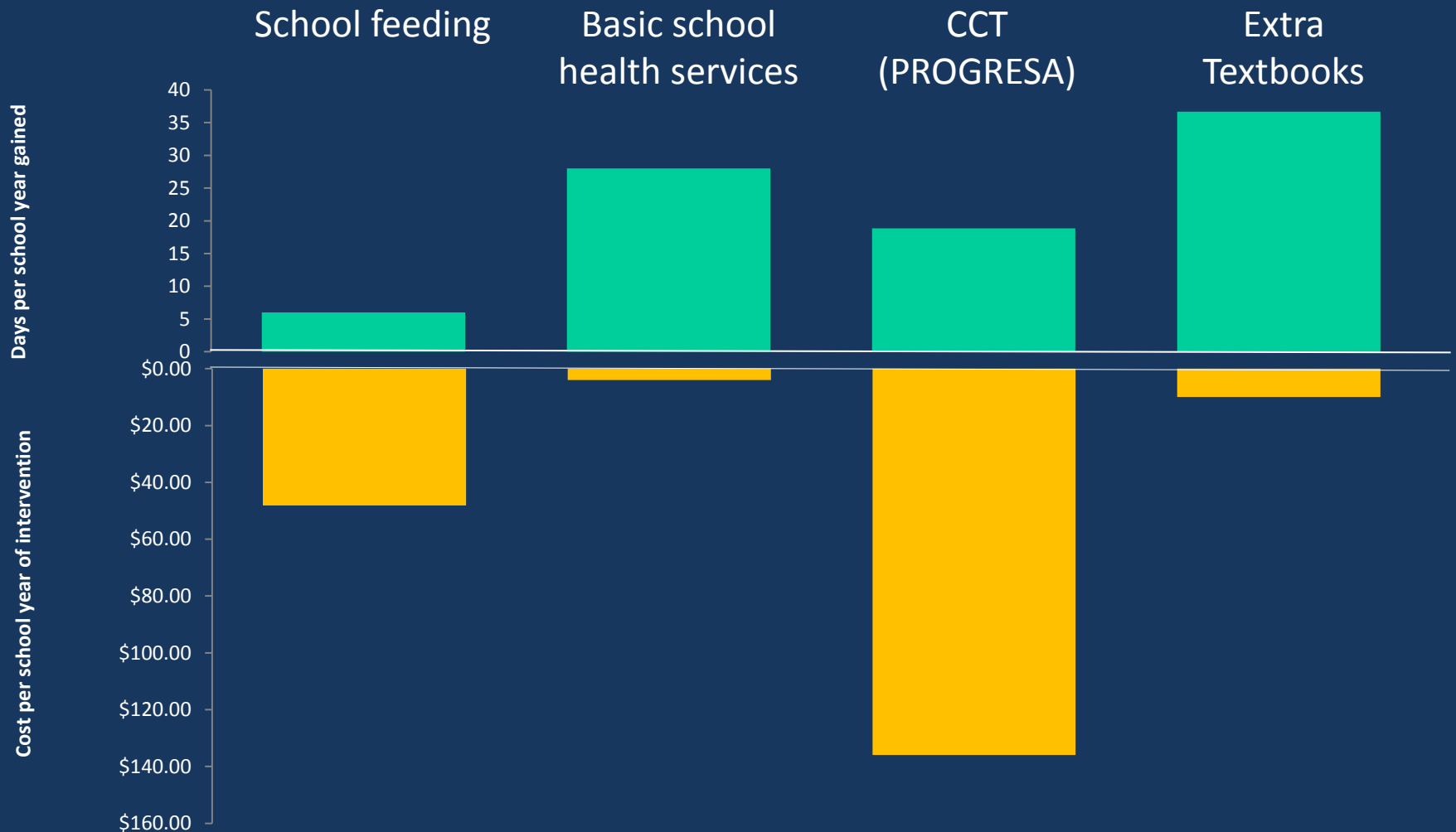
What do we mean by “Level the Playing Field?” Helping Sick and Hungry Children Catch Up

Test of Categorical Fluency



Source: Nokes *et al.* 1992.

Comparative cost and effectiveness in terms of EFA outcomes



Source: JPAL. 2004.; Bundy *et al.* 2008.

The Quality of Evidence for an Impact of Health and Food on Education

Intervention	Enrolment	Attendance	Educational achievement	Cognition
In-school meals	++ (♀ effect)	+++	+++	+++
Take-home rations	++ (♀ effect)	++	++	++
Fortified biscuits	+	++	+	++
Dietary iron	+	+++	+++	+++
Deworming	NA	+++	++	++

+ = evidence from quasi-experimental evaluation

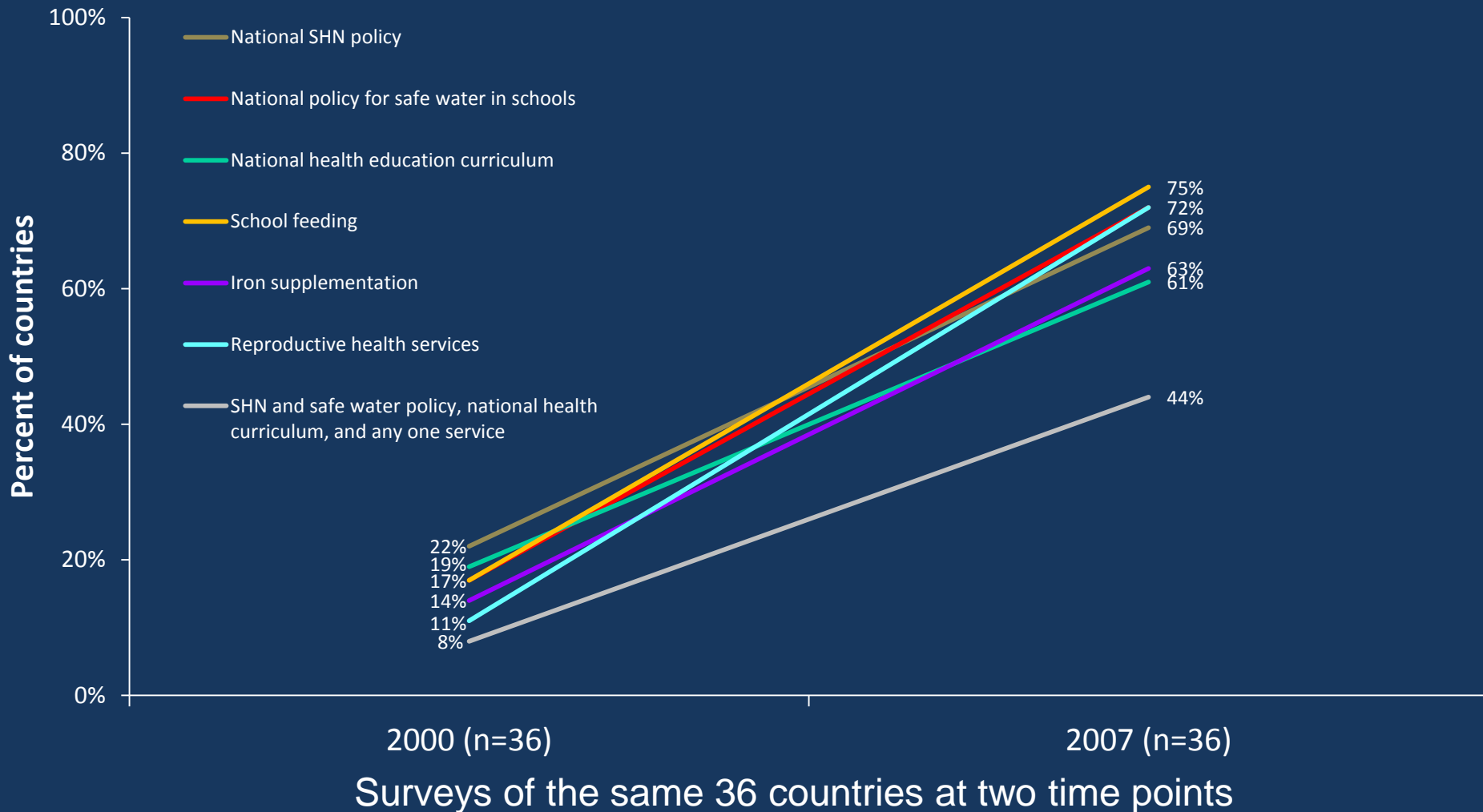
++ = evidence from at least one RCT

+++ = evidence from more than one RCT

♀ effect = enhances enrollment of girls

NA = not assessed

Countries in Sub-Saharan Africa Increase their Efforts to Level the Playing Field (since 2000)



Regional Leadership in Africa Scales Up Support to Countries to Level the Playing Field

- Regional Economic Communities (e.g. ECOWAS, East African Community, CARICOM) have established inter-governmental school health networks
- African Union (NEPAD) supports school feeding through the Comprehensive Africa Development Programme (CAADP)

Every day 330 million children eat a school meal

Latin America
& Caribbean
83 million

Middle East &
North Africa
8 million

Sub-Saharan
Africa
29 million

South Asia
127 million

East Asia & Pacific
34 million

Children receiving school meals



Map produced by WFP - Vulnerability Analysis and Mapping Unit, April 2012.
Source of data: Global School Feeding Survey 2012 - School Feeding Policy, Planning and Strategy Division.
The sample includes 102 countries.

The designations employed and the presentation of material in the map(s) do not imply the expression of any opinion whatsoever of WFP concerning the legal or constitutional status of any country, territory or sea area, or concerning the delimitation of frontiers.

What is school feeding?

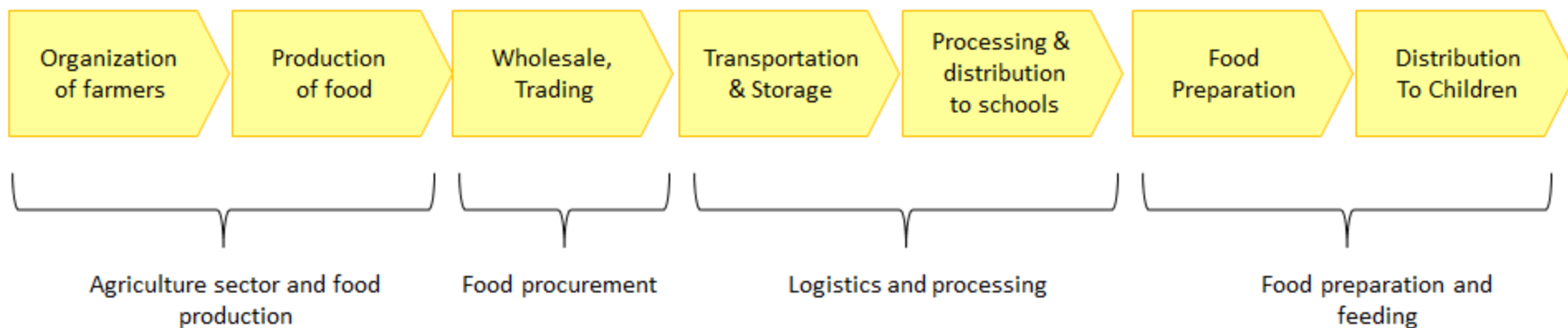
- School feeding can be defined as the provision of food to children through schools
- Two basic modalities:
 - On-site meals or snacks
 - Take-home rations conditional to attendance
- In some contexts interventions combine on-site programmes with take-home rations targeting a specific group of vulnerable children



(Source: WFP)

Simple idea...but...

- School feeding programmes can be very complex!
- No one size fits all, very context specific
 - (See examples in the next slides...)
- Opportunity to assist governments in improving scale-up of national programmes
 - What works where?
 - How much does it cost?



Fully centralised model
(e.g. Botswana)

Government centrally buying and distributing food to schools

Decentralised school-based model
(e.g. Kenya HGSM)

Schools responsible for procurement and preparation using funds from the central level

Partially decentralised model
(e.g. Mali)

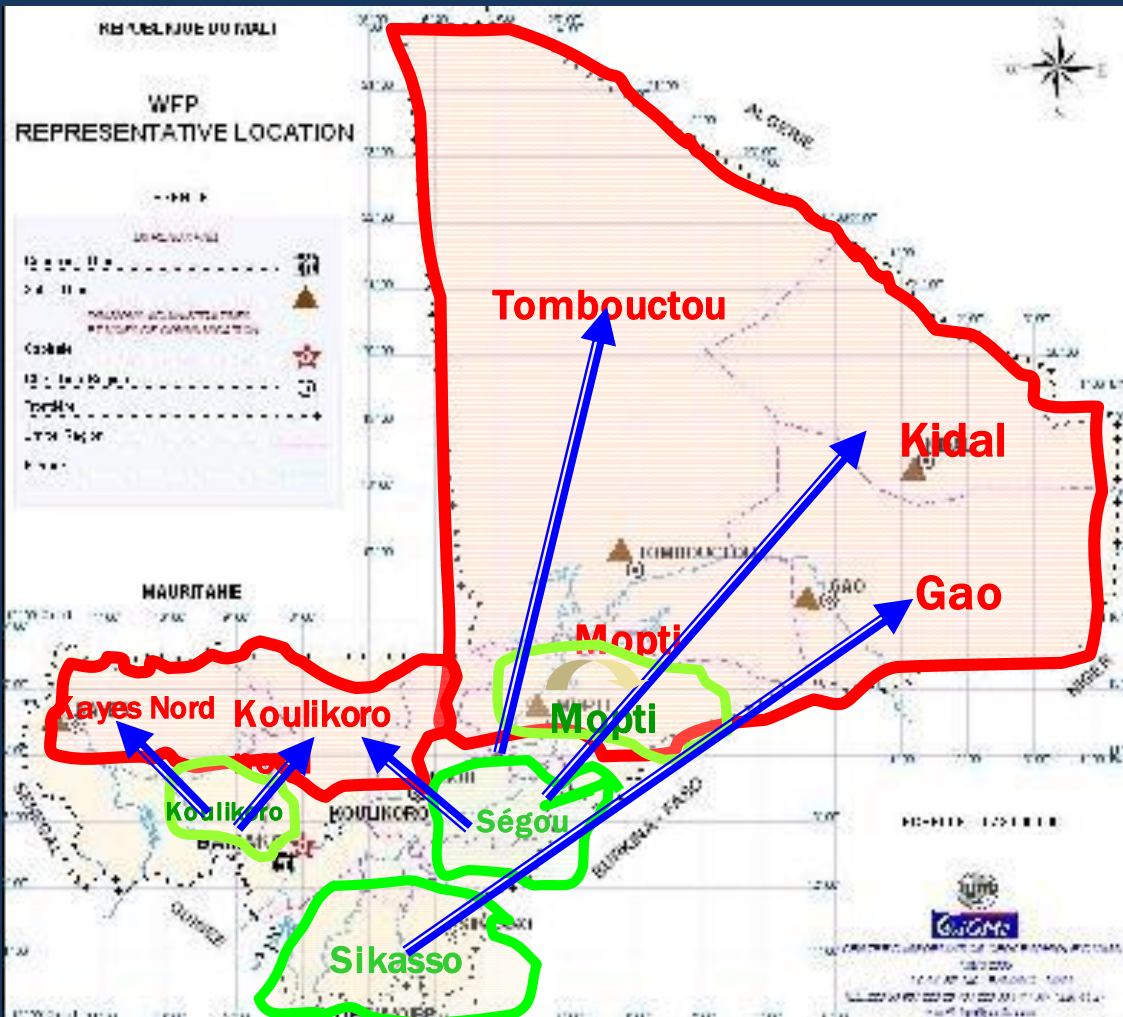
Traders

Schools

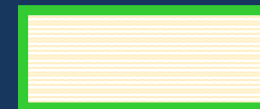
Integrated farm to school model
(e.g. Cote d'Ivoire)

Women's groups receive supply side package and provide schools with food supply and support preparation and distribution

In Mali...

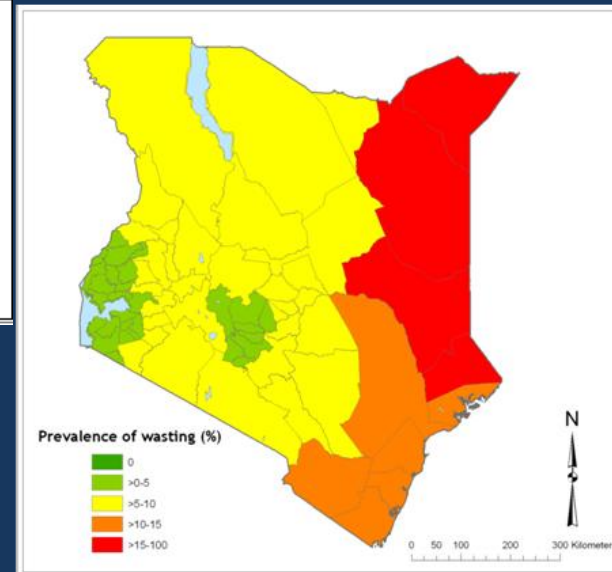
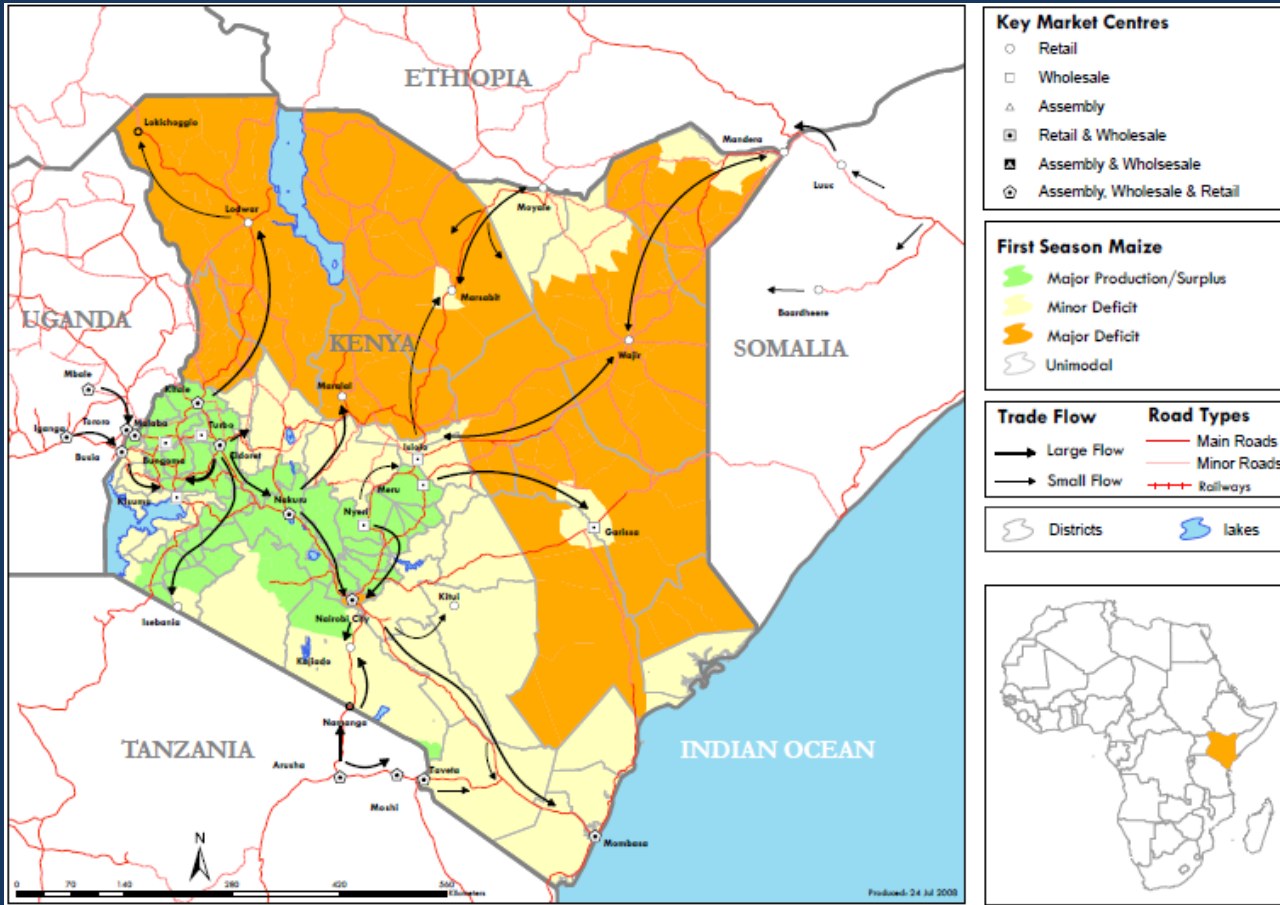


Zones targeted for school feeding

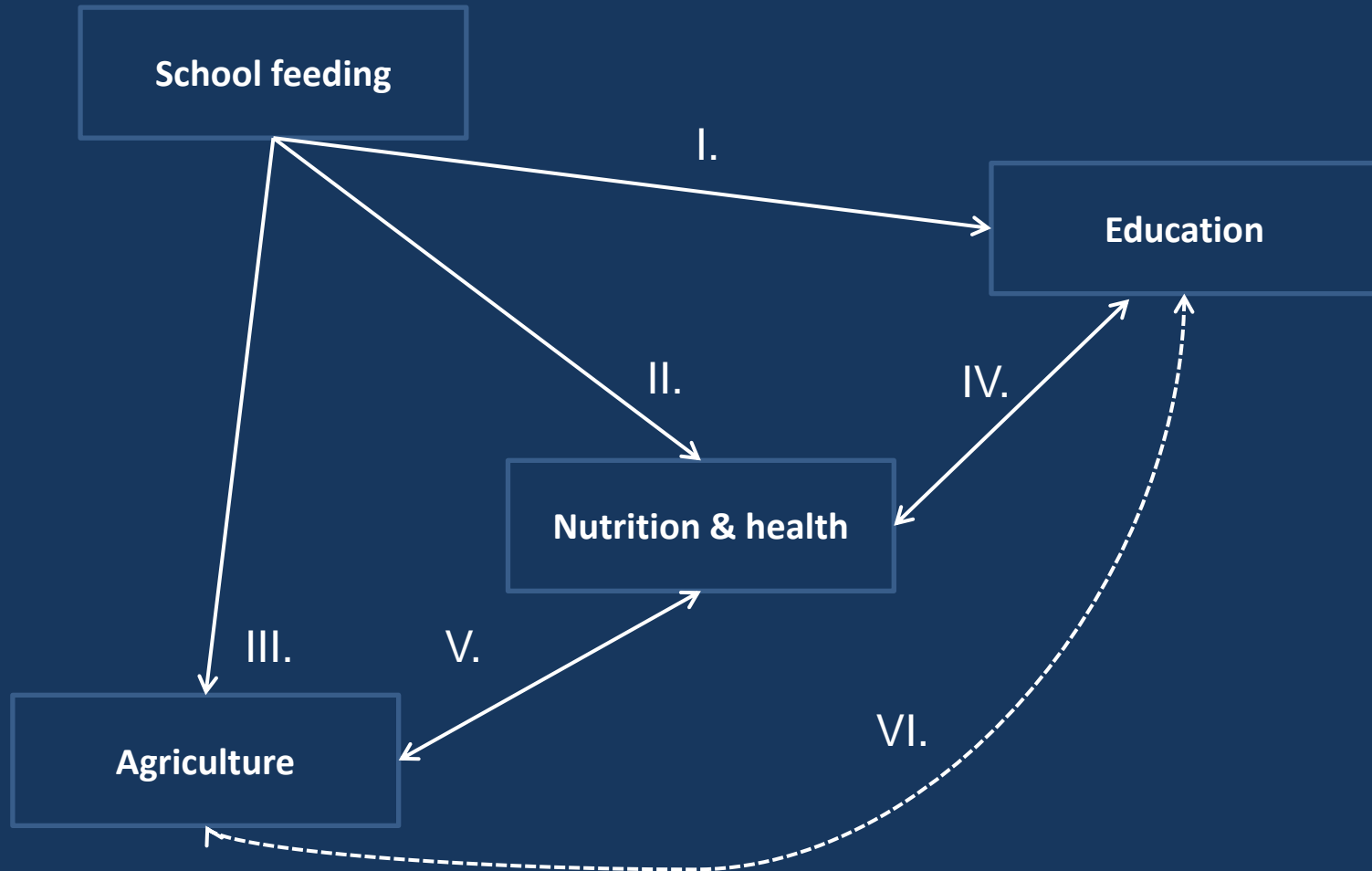


Food production zones

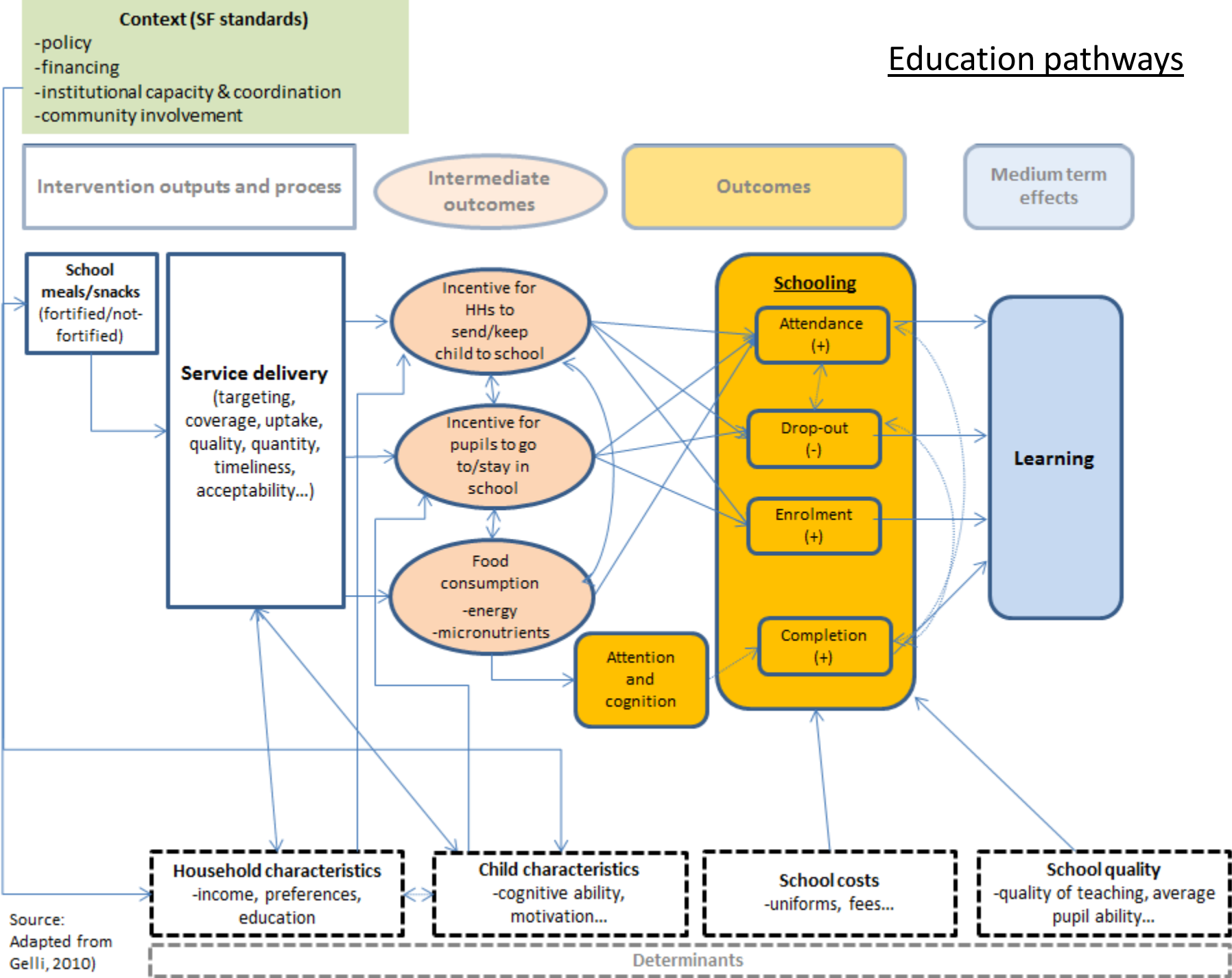
Whilst in Kenya...



Complex impact pathways



Education pathways

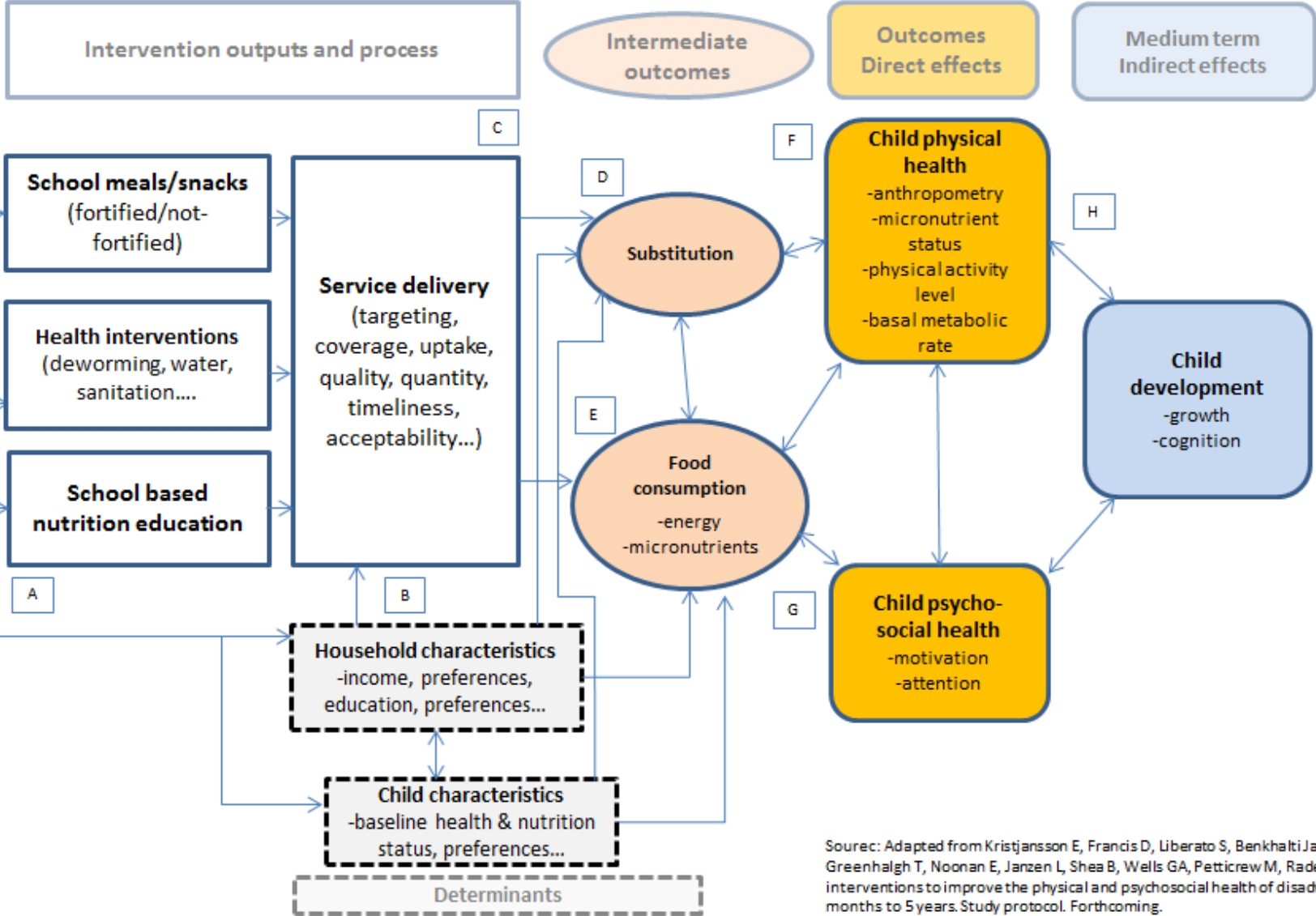


Source:
Adapted from
Gelli, 2010)

Nutrition pathways

Context (SF standards)

- policy
- financing
- institutional capacity & coordination
- community involvement



Sourec: Adapted from Kristjansson E, Francis D, Liberato S, Benkhalti Jandu M, Welch V, Batel M, Greenhalgh T, Noonan E, Jarzen L, Shea B, Wells GA, Petticrew M, Rader T, Krasevec J. Feeding interventions to improve the physical and psychosocial health of disadvantaged children aged 4 months to 5 years. Study protocol. Forthcoming.

Agriculture pathways

Mayors

Traders

% procured from small holders

Small holder farmers

Substitution

“How much of the demand is additional on the market?”
-household food consumption

Risk

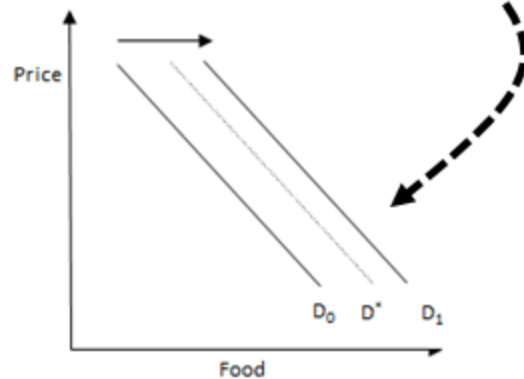
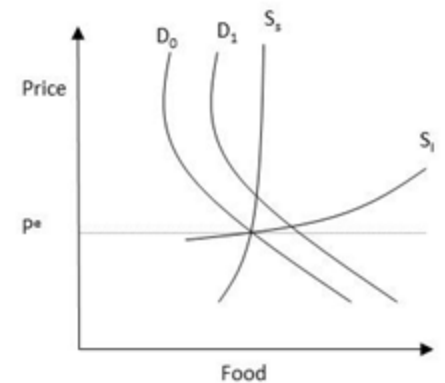
-investments in production technology
-specialisation

Agricultural output

Profits = Price * Quantity - Costs

Household income

-distribution/welfare effects



School feeding cost and outcomes

Cost	Cost per extra day of attendance	Cost per additional centimeter of height	Cost per additional kilogram of weight
Range of costs for RCTs	4.7–15.8	112.0–252.0	112.0–252.0
Average cost per average for RCTs	8.0	160	160
Range of costs for CBAs	1.7–3.8	10.4–23.3 (5–6 yr of age) 21.7–48.8 (6–8 yr of age) 19.0–42.9 (overall)	38.4–86.3
Average cost per average for CBAs	2.4	14.8 (5– 6 yr of age) 31.0 (6–8 yr of age) 27.2 (average)	54.8
Cost	Cost per point on Raven's Progressive Matrices	Cost per IQ point	Cost per point on math achievement or aptitude
Range of costs for RCTs	82.4–185.3	Not in the analysis	31.5–70.8 (WRAT) 155.6–350.0 (Math subtest of WISC)
Average cost per average for RCTs	117.6	Not in the analysis	44.9 (WRAT) 222.2 (Math subtest of WISC)
Range of costs for CBAs	Not in the analysis	12.7–28.6	23.3–52.5
Average cost per average for CBAs	Not in the analysis	18.2	33.3

CBA, controlled before-and-after study; RCT, randomized, controlled trial; WISC, Weschler Intelligence Scale for Children; WRAT, Wide Range Achievement Test

Costs and cost-efficiency estimates

	Full costs (USD)	Energy (kcal)	Iron (mg)	Protein (g)	std. cost per 100 kcals delivered	std. cost per (g) protein delivered	std. cost per (mg) iron delivered	std. cost per 100 (mcg) vitamin A delivered
School meals (n=44)	48	735	9	20	7	3	8	25
Fortified biscuits (n=8)	23	262	7	7	8	3	3	9

- Take home rations, targeted to households, cost US\$ 75 per child per year
- Share of food costs: school meals (56%), biscuits (74%), take-home rations (68%)

Some trade-offs : Back of the envelope figures relative to cooked meals

Dimension \ Modality	Biscuits	Cooked meals	Take-home rations
Outcomes (education)	~1	1	1 ⁺
Food quantity per child per year	0.3	1 (25 kg)	3
Cost per child per year	0.5	1 (\$50)	1.5
(School level cost per child per year)	0.4~	1 (\$6)	0.4~
Cost/protein or energy output	~1	1	NA
Cost/micronutrient output	0.3	1	NA

NB: Author's own compilation based on ongoing PCD/WFP/BCG analysis, for illustrative purpose only

Gaps in the evidence base...

- New RCT to examine cost-effectiveness of alternative Government led approaches

Indicator	Metric
Income	Farm profits
Distributional effects	Small farmers participating in the programme
Schooling	Enrolment, attendance, drop-out and completion
Attention	Digit span (forward and backward)
Learning achievement	Scores on literacy and maths tests
Physical growth	Anthropometric measures of height and weight
Diet diversity	Household consumption
Social accountability	Parental monitoring and motivation

PCD's goal – Better education through better health



To improve the **educational achievement** of children, especially girls, through **national programmes** that enhance the **health, nutrition and psychosocial** status of children in low and middle income countries.

Thank You

Acknowledgements: Based on material UNESCO and slides by presented by Don Bundy at 9th Meeting of the High Level Group on EFA, Addis Ababa, 22 February 2010

The screenshot shows the 'Schools & Health' website. At the top, there is a search bar and navigation links for 'Admin', 'Contact', and 'Sign up'. Below the header, a navigation menu includes 'Home', 'Documents and Resource Centre', 'Country Programmes', 'Related Sites', and 'News & Events'. The main content area features a large banner with the text 'Courage & Hope' and an image of a teacher and students. To the left, there is a sidebar with a 'Join SHN Mailing List' form and 'Sub Sites' including 'World Health Organization', 'UNICEF', 'UNESCO', 'UNEP', 'World Bank', 'Partnership for Child Development', 'USAID', 'Pan American Health Organization', 'World Food Programme', and 'Save the Children'. At the bottom, a footer states 'THIS SITE IS MANAGED AND MAINTAINED BY THE PARTNERSHIP FOR CHILD DEVELOPMENT. THE SITE IS ENDORSED AND SUPPORTED BY THE FOLLOWING AGENCIES.' and lists the logos of the partner organizations.

schoolsandhealth.org

thiswormyworld.org

hgsf-global.org

This block contains two website screenshots. The top screenshot is for 'Home Grown School Feeding' (HGSF). It features a green header with the HGSF logo and the tagline 'Sourcing from local farmers'. The main content area includes a 'Welcome to the Home Grown School Feeding online resource' section, a 'CONTENTS MENU' with links to Policy and Programme, Operational Support, Monitoring and Evaluation, Register of Experts, News, Events, and Recent Publications, and a search bar. The bottom screenshot is for the 'GLOBAL ATLAS OF HELMINTH INFECTIONS' (GAHI). It has a blue header with the GAHI logo and the tagline 'GLOBAL ATLAS OF HELMINTH INFECTIONS'. The main content area features a world map with yellow highlights indicating areas of infection, and text describing the atlas as an open-access information resource on the distribution of soil-transmitted helminths and schistosomiasis. It also includes a 'Submit your data or response about specific countries' form and a Creative Commons license logo.