

Précis

School Milk Programme – The Economic Dimension A study of the economic impact of China's school milk Programme 2003

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Introduction

Traditionally School Milk Programme (SMP) has been seen as a means for nutrition and education intervention. However many of the world's SMP were founded with agro-economic reasons as the primary motivator, but the impact of SMP as a development vehicle on economic matters are less recognised. This study hopes to enlighten readers the economic aspect of SMP and the multiple sectoral benefits that a well design SMP can bring. SMP is not just for nutrition and education, but a powerful vehicle for poverty reduction, and economic stimulation.

The China SMP operation does not required State or donor finding. The programme is public and private co-operation model is an interesting way by which development programmes can be implemented.

Index of Success - Impetus for growth

1999 – 4.6 million dairy cattle	2002 – 6.9 million dairy cattle
1992~1999 growth rate avg. 6.7%	1999~2002 growth rate avg. 14.8%
1999 – raw milk production – 8 billion litres	2002 – 14 billion litres
1992~1999 avg growth rate – 5.5%	1999~2002 avg growth rate - 19%
1999 – LDP 950 million litres	2002 – LDP 3.4 billion litres
1999~2002 avg growth rate – 22.8%	1999~2002 avg growth rate – 56.2%
1999 – UHT milk 200 million litres	2002 – UHT milk 1 billion litres
	SMP accounts for 27.5% of total UHT vol.
1999 per capita consumption – 6.7 litres	2002 per capita consumption – 10 litres plus
1992~1999 avg growth rate 5.5%	1999~2002 avg growth rate – 16.3 %
	27% increase in school milk pilot cities
1999 farmers income from dairy 2.15 billion US\$	2002 farmers income 3.24 billion US\$
1999 – 700 dairies in China	2002 1600 dairies in China
	SMP induced investment fty 158 mio US\$
	SMP induced investment farm 58 mio US\$
GDP driven by consumption and investment – 363 mio US\$ by 2002	
2002 SMP effect on Gross Output is 933 mio US\$	
Employment opportunities – 20100 jobs by 2002	

For every one US\$ worth of school milk (SM) consumption, produces a increase in gross output of 5.84 US\$ and 2.27 US\$ gain in GDP

For every one US\$ worth of SMP induced investment, produces a gain of 6.05 US\$ in Gross Output and 2.27 US\$ in GDP.

Background to the Chinese SMP

The establishment of the Chinese SMP is driven by economic reasons to foster growth in the rural areas. Essentially it is a poverty reduction programme, whereby demand of agriculture commodities is stimulated by a regulated consumption programme.

The Structure

The Chinese SMP is a public private cooperation exercise. The public sector which oversees the programme CSMPC (Chinese School Milk Programme Committee) is a multi-ministries group, lead by the Ministry of Agriculture; it is represented at the national, provincial as well as the city level where the programme is to be implemented.

The key feature of the Chinese SMP is that it does not depend on State subsidies to fund the programme. Milk are sold to urban school kids at a discount (generally 25% ~30% cheaper than equivalents in shops) through a monthly subscription process. The discount is achieved by cooperation between the public and private sector negotiated price reduction of milk supply is off set by a longer contract period ~ 3 years, a monopoly supply condition within a prescribed area. Furthermore suppliers are free to display brands names within a set design guidelines. These commercial “attraction” were however linked to a series of conditions that essentially forces the school milk supplier to re-invest back into the system. This involves stipulating an increasing higher and more stringent standards for hygiene and quality for the school milk over the life of the contract period. The tender specified investment in hardware such as mechanical milking, UHT processing and aseptic packaging, more stringent quality control, higher sampling size, better milk quality with specification for antibiotic content, as well as improvement production and management standard such as ISO, GMP and even HACCP.

The tender requirement is a tough process; school milk products must be made with raw milk. The Chinese SMP is a city base operation. The participation is entirely voluntary, school are invited to participate and students /parents have the option to subscribe to the programme. To encourage participation, the CSMPC and the accredited dairies conduct joint promotion in the schools, electronic media and as well as seminars to promote milk drinking.

The development of the programme

The Chinese SMP was officially inaugurated in early 2000 in five pilot cities. After a period, the programme was expanded to other provincial level cities. By late 2003, the China SMP is delivering about 2.36 million portions of milk a day during the school year, which equates to about 92.8 million litres of milk a year.

SMP effects on the commercial dairy market

A sustainable SMP can modify the consumption habits, especially if this habit were adopted early on. Evidence in Thailand shows through SMP, it transforms from a 2 to 20 litres per consumption. Research has also shows despite the short duration of the Chinese programme, the frequency of milk consumption has risen from 7.21 times to 8 times a week and average volume from 236.3 ml to 240.8 ml a week. This behaviour change is not limited to the children but also the immediate family. In the five pilot cities, research has demonstrated that adults who drink milk has risen from 36.1% before SMP to 56.2% in 2002

The tough accreditation process brought unexpected additional benefits to the dairies, as the consumer increasingly sees this as a mark of quality. Evidence from consumer interviews suggested that SMP has direct effect on modifying consumption habit of the child but also the immediate family. It is estimated that through the SMP an additional 187 million litres of commercial milk were sold. Overall milk consumption has risen dramatically since the SMP. In 92 to 99 the national average growth rate in per capita consumption was 5.14%, but risen to 16.27% from 2000 to 2002, after the inauguration of SMP. This is especially evidence in the cities where school milk has been in operation. Of the five pilot cities, per capita consumption grew at 27% compare to an average of 22% for other non-SMP urban centers. The general increase of liquid dairy products (LDP), 1992~99 average rate of increase 56.2% vs. 81.9% in 2000 to 2002, and especially UHT long life milk, where the China SMP stipulate as the preferred product. In 2002, total SMP volume represents 9.13% of total milk products, the significant of SMP to the overall milk market is clear.

SMP effects on dairy farming

The increase of milk consumption is matched by the increase in cattle numbers and milk production. The average increase in milk production from 92~99 was a mere 5.45%, while after the implementation of the SMP, the growth rate from 2000 to 2002 is 18.96%, while the total dairy cattle herd size increased by an average of 24400 cows a year, a total of 97700 cows since the SMP. This represents some 8.08% of the total herd size!

SMP effects on economy and investment

SMP can have a direct and indirect effect on the economy. Using the accepted international analytical tool – “Input-Output Analysis¹” we have established the following

On GDP Units US\$		Effect of One US\$ of SMP investment and consumption on GDP	SMP effects on GDP in 2000 (Mio US\$)	SMP effects on GDP in 2001 (Mio US\$)	SMP effects on GDP in 2002 (Mio US\$)
Combine effects - direct and indirect	Primary Industry	1.05	38	69	95
	Secondary Industry	2.35	98	158	179
	Tertiary Industry	1.14	47	77	91
	Total	4.54	184	304	365

On Gross Output Units US\$		Effect of One US\$ of SMP investment and consumption on Gross Output	SMP effects on Gross Output in 2000 (Mio US\$)	SMP effects on Gross Output in 2001 (Mio US\$)	SMP effects on Gross Output in 2002 (Mio US\$)
Combine effects - direct and indirect	Primary Industry	1.75	65	116	163
	Secondary Industry	7.85	327	527	600
	Tertiary Industry	2.29	95	156	184
	Total	11.89	487	799	947

SMP on employment

It is estimated that as a result of this increase in consumption and investment, we estimated that

Employment Position Unit: '000		2000	2001
Direct & indirect	Primary Industry	26.8	64.7
	Secondary Industry	20.0	31.1
	Tertiary Industry	9.1	14.6
	Total	65.7	110.3

Job created as a direct result of SMP in 2002 is estimated at 20230, with 60% in the farming sector (Primary industry).

SMP on Quality and Standards

The Chinese SMP through its accreditation criteria, forces the tender holders to reinvest back to the system. One such requirement is the continuous improvement on quality and standards. Currently 48 dairies which represent 90% of the total LDP production is either already accredited or candidates SMP suppliers. It is planned that all of the 48 accredited dairies must be HACCP certified in 3 years times otherwise they may lose their licenses.

Effects of SMP on the future economic development of China

The effect of SMP on milk drinking is clear. Changes at the farm level, the whole scale improvement of the dairy processing industry are all sustainable changes that SMP has brought. The change in consumption habits in the urban areas are for real, not to mention the investment, the increase in GDP and gross output. Despite the SARS epidemic, which had an adverse effect on the short-term development of the SMP, the above mentioned changes are long lasting changes that are benefits that SMP bring to the dairy value chain is clearly a sustainable change.