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Frank Bliss

Home-Grown School Feeding as a “Good Practice” for Poverty Alleviation and Nutrition Security in Cambodia

AVE-Studie 4/2017

BIBLIOGRAPHICAL NOTE:

Bliss, Frank (2017): Home-Grown School Feeding as a “Good Practice” for Poverty Alleviation and Nutrition Security in Cambodia. Institute for Development and Peace (INEF), University of Duisburg-Essen (AVE-Studie 4/2017, Wege aus extremer Armut, Vulnerabilität und Ernährungsunsicherheit – Ways out of extreme poverty, vulnerability and food insecurity).



Imprint

Editor:

Institute for Development and Peace (INEF)
University of Duisburg-Essen

Logo design: Carola Vogel

Layout design: Jeanette Schade, Sascha Werthes

Cover design: Shahriar Assadi

Photos: Frank Bliss 2017

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ISSN 2511-5111



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for Poverty Alleviation and Nutrition Security in
Cambodia**

AVE-Studie 4/2017

Wege aus extremer Armut, Vulnerabilität und Ernährungsunsicherheit

Ways out of extreme poverty, vulnerability and food insecurity

Universität Duisburg-Essen
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The project is financed by funds of the Federal Ministry for Economic Cooperation and Development (BMZ), in the context of the special initiative "One World – No Hunger" (SEWOH).

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Abbreviations

GDP	Gross Domestic Product
GIZ	Gesellschaft für Internationale Zusammenarbeit (German Technical Cooperation)
GoC	Government of Cambodia
ha	hectare
HDI	Human Development Index
HDR	Human Development Report
HGSF	Home-Grown School Feeding
HGSFP	Home-Grown School Feeding Programme
hh	household/s
INEF	Institute for Development and Peace at the University of Duisburg-Essen
MDGs	Millennium Development Goals
n.d.	not dated
NGO	Non-governmental Organisation
p.a.	per year
p.c.	per head
p.d.	per day
ppp	purchasing power parity
SABER-SF	Systems Approach for Better Education Results – School Feeding
SFP	School Feeding Programme
SSC	School Support Committee
t	(metric) tonne
TC	Technical Cooperation
UNDP	United Nations Development Programme
UN	United Nations
USD	United States Dollar
WASH	Water, Sanitation and Hygiene
WB	World Bank
WFP	World Food Programme

Summary

Cambodia is situated at the lower end of the group of medium-income countries. The rapid economic development of the last few years has drastically reduced poverty in Cambodia in general, and particularly extreme poverty fell during the period of the Millennium Development Goals (MDGs) (from 2000 to 2015) from about 35 to 13.5%. However, very many households certainly live only just above the poverty line, so it is to be assumed that one out of every two families in the country is vulnerable and at high risk of falling back into poverty. Successes are also visible in Cambodia in the area of food security, but with respect to undernutrition and malnutrition these trends fall considerably behind the improvement in social indicators: undernutrition and malnutrition can be observed nationally in children who have stunted growth (around 40% of all children in Cambodia), the over 28% who are also underweight, and the 11% who are ailing, in the sense of being significantly emaciated.

In view of this contradiction between the reduction in poverty and the considerably lower reduction in malnutrition, particularly of children, school feeding in Cambodia is of increasing importance, particularly in primary school classes (classes 1-6). Admittedly, school feeding in very poor countries fails to reach precisely the poorest children there, due to the low school attendance rates. In Cambodia, however, which has a relatively high school attendance rate of about 95% but a significant number of pupils who repeat years and break off their schooling, particularly in the poorer sections of the population, school feeding promotes success at school and leads to a reduction in the number of pupils breaking off their schooling, as well as an increase in the number of children who go on to further schooling.

Currently school feeding is supported by the World Food Programme (WFP) in around 1,220 primary schools, and therefore reaches around 300,000 children. The food is primarily served in the morning before lessons, in order to ensure that the children (who in Cambodia traditionally only very rarely receive anything to eat in the morning) can follow the lessons with greater calm and concentration, and can correspondingly learn better. Most of the foodstuffs used for this are purchased centrally by the programme, sometimes even on the basis of international invitations to tender. By May 2017, however, 84 primary schools had already been converted to home-grown school feeding, and by the end of the year this figure should rise to 200. The basic idea of this new model, just like school feeding itself, was transferred from Brazil. In Cambodia too, the benefit for the country and the school localities can be increased, in addition to the feeding of the children, by encouraging and supporting the local production of high-value foodstuffs.

In order to investigate the question of how home-grown school feeding functions in practice, which effects it has on the children, but also which additional economic benefit is attained through increased purchasing power due to WFP expenditures, an investigation was carried out in a series of selected schools by the Institute for Development and Peace (INEP) of the University of Duisburg-Essen. This included 18 of the 84 schools with a home-grown school feeding programme (HGSFP; see attachment I). The information collection was based on individual dialogues and discussions with all important stakeholders, from representatives of the communes to teachers, parents and children, up to the suppliers and producers of the foodstuffs used. As well as the schools, in particular a series of small farming business units and fishpond owners were visited who are responsible for the high-quality provision of the schools with vegetables and fresh fish. The investigation was carried out in close cooperation with representatives of WFP in February and May 2017 in 18 schools in four provinces of the north of Cambodia.

The overall result of the investigation is very positive, and confirms the effects both on the children and on the local economy. A considerably improved cooperation of all participants is also observed with respect to school life and the organisation of the school.

Firstly, it could be confirmed that implementation of the programme functioned smoothly. This applied both to the procurement of the foodstuffs via local suppliers and to the preparation of the food and its distribution to the schools. Although a great deal of voluntary work is done and the parents, represented by the School Support Committee (SSC), have to participate by providing firewood and ingredients for the food, de facto there are no organisation-related interruptions in provision. For instance, if somebody from the cooking personnel is unable to prepare the food due to unforeseen circumstances (e.g. illness), early in the same morning a relative or even one of the teachers jumps in.

The fear that local suppliers would not be able to deal with a call for tenders for foodstuff deliveries also proved to be groundless. Due to good provision of prior information, suppliers could be found everywhere who offered one or more of the three separately specified delivery packages (i. rice, ii. vegetables/fish/meat and eggs, iii. cooking oil and salt). In the villages of the Siem Reap province, in certain communes there were even 10 or more different applicants for the main packages of rice and vegetables.

The delivery to the schools of the foodstuffs agreed upon also takes place without any reported interruptions. Correspondingly, all children whose lessons begin in the morning receive a hot meal, which is in accordance with the specifications of the WFP relating to nutrition physiology. In schools with two shifts (morning and afternoon) only children in the early shift receive a meal, as the others have generally eaten at home if they go to school in the afternoon.

The effects of school feeding are summarised as follows by the teachers: the children are quieter now and follow the lesson with considerably greater attention than previously, when there were no meals. What is particularly important is that now no children leave the school during the lessons in order to fetch something to eat – then failing to return to the lessons. Correspondingly, the performances of the children have considerably risen on average. The number of children repeating the year has decreased. Something, which is mentioned by the teachers and confirmed by many parents is that there has been an increase in the number of children, particularly from poor households, who continue after primary school, i.e. transfer to secondary school.

It was also repeatedly emphasised by teachers in the discussions that through school feeding the parents' financial burden was relieved: since at home there was generally no breakfast, at least those children from families who could afford the expenditure received between 500 and 2,000 Riel (0.125 to 0.50 USD) to take with them, in order to be able to buy snacks in the breaks. The main things bought with this money, as was observed by the investigation team almost everywhere and still is even now, were sweets, pastries, white bread and coloured sugared water. Unfortunately, as teachers reported, even parents who could not really spare the money still felt obliged to give their children some money to take to school. This money was then missing in provision for the family at home. There were also a number of children who received no money at all, who therefore received absolutely nothing to eat during the whole morning before the usual midday meal at home.

On the part of the parents, with respect to the effects of school feeding it is additionally commented that today the children enjoy going to the school much more than before, and that they are ill less often. Something which could not be investigated within the framework of this study, however, was whether the state of health is also reflected in an increase in weight and

height of the children, who as remarked at the outset are often significantly underweight. This would need to be confirmed in a larger-scale study.

However, on the suppliers' side, when the foodstuffs for school feeding are procured locally, considerable positive effects can be confirmed for the economy and above all for agriculture in the communes. For school feeding rice, vegetables, meat, fish and eggs are required in appropriate amounts. Of these, generally rice, vegetables and fish are present and can be directly sold. In one example, for a total of four schools in one commune the amount required is 21 tonnes in one year. This rice is procured from a total of 20 small farmer households. In addition, there are 5.28 tonnes of vegetables, meat, fish and eggs, to which, alongside three butchers and one fish trader, around 60 households contribute, each of which can only provide small amounts of vegetables. Overall, therefore, in addition to the three suppliers more than 80 farming families are able to gain an additional income source through the project in just one commune. Some of them can even gain a new livelihood. This is for instance the case for farmers who due to the demand have created a fishpond in their village for the first time.

As well as the direct effects of school feeding described above, there are further indirect effects. Through the local requirement for vegetables, above all high-quality, diversified sorts, production is extended overall. Many producers now not only deliver to the suppliers of the schools, but also produce excess volumes beyond this for the local market, which previously was considerably undersupplied with vegetables, and was restricted to a few "standard vegetables" such as morning glory (water spinach). A further secondary effect is therefore to be assumed: through the consumption of higher-quality vegetables and the increased fish offer, the quality of available foodstuffs is generally improving, and with it the quality of nutrition, at least for people within the social and geographical vicinity of the schools.

In order to perpetuate the positive effects of home-grown school feeding, it would be important to turn a project into normal practice. Through its positive results this investigation expressly supports the effort to transform the WFP programme into a national measure under the leadership of the Cambodian schools' administration. Due to its proven economic effects in rural communes, local procurement should be given precedence over national or even international procurement.

1. Brief Country Analysis Cambodia

1.1 Socio-Economy and Poverty

On the country list of the Human Development Report (HDR) published by the United Nations Development Programme (UNDP), Cambodia, with a Human Development Index (HDI) of 0.563, is in 143rd place among the 188 countries recorded. Measured by social indicators and economic power it is at the lower end of states with medium income (behind Bangladesh). The average income per capita (calculated as gross income per capita per year) has a nominal value, according to sources¹, of between a bit more than US\$ 1000 and less than 1200 per year, and taking into account the highly disputed purchasing power parity (ppp) is currently between 3278 and 3700 US\$ (depending on the source).

Social inequality in Cambodia is increasing, and generally there is a considerable disparity between the urban space and rural areas in the country. Moreover, in the countryside, where subsistence agriculture continues to play a large role, even many households which are not extremely poor have only little cash. The availability of income also depends on the agricultural year (income is mostly available during harvest time) and is dramatically influenced by the climate, all the way up to total crop failure in some areas in years of drought.

The rapid economic development of the last few years has drastically reduced poverty in Cambodia in general, and particularly extreme poverty. Seasonal work for men in the construction industry and work migration, particularly to Thailand, as well as the expanding textiles industry, with considerable additional employment opportunities for women, have raised the family income of large groups of the population. Expressed in figures, during the MDG period the poverty rate is thought to have more than halved, from a previous rate of 30-35% (cf. IMF 2006: 93) to 13.5% in 2014 (cf. ADB 2017). However, the World Bank assumes that approximately 20% of Cambodia's population earn less than one USD per day, and about 24% of Cambodian citizens live below the poverty line (2014: 10).



Pict. 2: Typical house made of wood, on poles because of the floods prevalent during the rainy season in the northern provinces of Cambodia

Very many households certainly live only just above the poverty line. Hence, it is to be assumed that one out of every two families in the country is vulnerable. In this context, "vulnerable" means that their income is within a maximum of twice the income defined as constituting the poverty line, US\$ 1.90 per capita per day, including the monetary value of subsistence production. Even minor economic crises, sickness of a full wage-earner or agricultural drought can quickly throw a household back into deep poverty.

¹ E.g. 2015 US\$ 1078 (<https://tradingeconomics.com/cambodia/gdp> [8/2017]); also for the same year 2015 US\$ 1163 (<https://countryeconomics.com/gdp/cambodia> [8/2017]).

Using the recent multidimensional poverty index, the poor population for 2014 is estimated at 33.8% (= 5.180 million inhabitants) as well as a further 21.6% who are nearly poor (3.306 million inhabitants). Taken together, 55.4% (= 8.486 million individuals) in Cambodia live under or close to the poverty line (cf. UNDP 2017a/b) and many who have managed to pass the poverty line find themselves under the poverty line again a short time later.

Poverty displays an extreme town-countryside divide. Around 90% of the poor live in the countryside. However, there are also considerable pockets of poverty in the towns (medium and small slums by railway lines, swamps/lakes, river banks, etc.). Apart from income, poverty in the countryside is manifested in a lack of social infrastructure. For instance, healthcare services are often difficult to reach (bad tracks and expensive transport) and offer a worse service. Similar comments apply for schools (long distances and poor-/unmotivated teaching personnel). The drinking water supply is also often entirely insufficient.

The HDR Gender Index rates Cambodia, with a value of 0.89, as being very bad in the worldwide comparison. Incomes of women (US\$ 2650 gross income per capita per year at ppp) are clearly disadvantaged compared to men (US\$ 3563). Domestic and sexual violence against women are widespread. 22% of all households in the country are led by women. On average these have less land and are significantly more vulnerable than households with male heads (ADB 2014: 7f). It has also been observed that in this kind of household girls have to work more frequently than boys do. For gender mixed households the question arises whether the resources are always divided up equally between male and female members: the malnutrition and anaemia of many women (and girls) suggests the contrary.

1.2 Nutritional Situation

As in the area of poverty reduction, successes are also visible in Cambodia in regard to food security. For instance, the percentage of underweight children under five years decreased from 38% to 28.3% between 2000 and 2010, and the proportion of emaciated children dropped in the same period from 16.8 to 10.9% (cf. UNICEF n.d.). However, in all areas these trends fall behind the improvement in social indicators (cf. HDI 2000-2010). Obvious hunger (a lack of access to foodstuffs) is less the problem than undernutrition (to a smaller extent) and particularly malnutrition. The results are seen above all in children under five years of age in the form of (albeit decreasing) child mortality and morbidity, as well as at higher ages in the form of retarded mental and physical development, resulting in turn in poor achievements at school and limited working ability and performance later (c.f. UNICEF 2017).

Undernutrition and malnutrition can be observed nationally in the around 40% of all children who are too small for their age (stunted), the over 28% who are also underweight, and the 11% who are ailing, in the sense of significantly emaciated. The same applies for women, of whom 20% are affected by this in the 15-49 age range. Complications at birth and similarly underweight newborn babies are the results. Among women (and men to some extent) who work in factories a considerable degree of anaemia was also observed. Anaemia is found in 43% of women and 53% of children (cf. Perignon et al. 2014, WHO 2013, Wieringa et al. 2016).

It is noticeable that Cambodia, with these poor nutrition data, is on a par with significantly poorer countries, for instance those in the Sahel area (cf. Sun Movement 2016). Within the 2016-2017 INEF research, the question was repeatedly posed why dependents and above all children are malnourished who come from families, which are not very poor or not poor at all. One reason which is put forward is the results of the Khmer Rouge period (1975-1979), during which the entire population was almost exclusively dependent on rice, and a full bowl

of rice was seen as the ideal of good nutrition. Hence, valuable foods such as vegetables, animal products and fruit had no particular value for most people, and particularly for most grandparents, who generally looked after the children in the extended household.

Secondly, the rapid economic transformation in the last two decades may have led to a massive change in eating habits. In many discussion groups it was reported that almost all of those present went to work or school without eating breakfast, and had their first (hot) meal at the earliest between 11 and 12 a.m., but often not until 2 p.m. Those with little money (and this is the case for a large part of particularly the rural population for many months in the year) are unable to buy any snacks, or only buy those of low quality, in the long hours before the meal. These snacks represent a further problem. Since people do not eat at home (before work) they generally buy cheap products of low nutritional value, which nonetheless cost so much that they burden the household budget and for instance have the effect that school children can bring only little money to school. This makes school feeding an important topic in Cambodia.

A consequence of this sociocultural context, or the behaviour formed by financial constraints and historic legacy, is that the problem of nutrition has not disappeared with the improvement of the economic situation of many households, and that there is a very great need for education and change in behaviour across virtually the whole country and in almost all groups of the population.

1.3 The Educational Sector

School education in Cambodia is divided into pre-school, primary, secondary, higher and non-formal education. As the WFP mainly targets primary schools with its school feeding activities (i.e. from one to six but in quite a few schools also pre-school classes), this summary focuses mainly on this segment of the system, with a few remarks on general challenges.



Pict. 3: The only water well of a primary school in the north of Kampong Thom, a simple manual pump with a maximum of 8 m lifting height

In Cambodia in the 2015-2016 school year there were, apart from a number of religious (Pagoda) schools, 7,085 primary schools with 44,884 teachers (out of these 24,301 female = 54.1%). In total, 2,010,673 children were enrolled with a share of girls of 971,812 (= 48.3%). Out of the total, 135,678 children were repeaters (51,725 girls = 38.1%) (cf. KoC 2016: Table 1). The teacher-children ratio is roughly 1:45. In our sample of 18 schools in four provinces it is 29.5 (cf. Table 1 of the Annex) with a range from only 12 to more than 60 children per teacher.

According to the analysis of the Global Partnership for Education Grant for Cambodia supported by the World Bank, universal access to basic education has still not been achieved. The vast majority of out-of-school children come from the poorest quintile of the population. In 2009, 62,000 children were out- of-school at the primary level and 170,000 out- of-school at the secondary level. In the basic education sector, unequal quality between urban and rural areas was and is also a challenge – and it is at least one argument amongst others for quite a few parents to keep their children at home. The 2010 Early Grade Reading,

conducted for 24,000 students in grade 1-6 (i.e. primary school), found that 33% could not read at all, while 47% could not comprehend what they had read (cf. World Bank 2014: 4-5).

Many schools, especially in rural areas, are small, with fewer than 100 children, but even here many primary schools have two shifts, with the first lasting from 7 a.m. until 11 a.m. or 12 p.m., and the second from 12 or 1 p.m. to 4 or 5 p.m. Shifts generally rotate either weekly or monthly. However, even the use of these two shifts is insufficient to provide good lessons to the number of children and class units. Many schools do not have enough classrooms, so that two classes per shift are taught together, e.g. one grade 1 with one grade 4, or one grade 2 with one grade 5, etc. With one teacher and perhaps 50-60 children of two grades at the same time, the quality of lessons becomes questionable.

Frequent or very frequent absence of teachers as a consequence of long distances to work and poor roads in rural areas, especially during the rainy season, is another often-reported problem for the education system. Also, the low payment does not motivate teachers to perform well. Shortage of teachers was and is a reason to “overlook” the need for a teacher’s training school diploma issued by provincial education departments, and to recruit teaching staff who have no adequate qualifications.

Evaluations conducted under the *Education for All Fast Track Initiative Project* show that many students suffer from impairment or disability and achieve low scores, and it is important to note that the instances of impairment or disability are significantly higher amongst poor students than non-poor students (quoted in: World Bank 2014: 6).

Supported by the donor community the Cambodian government launched during the last few years a couple of school support programmes. For instance, for the year 2016/17 every primary school received between one and two US\$ per child for smaller repairs and essential expendable items such as chalk and note books, pencils or payment of electricity bills (if connected to the public grid). This money is managed by School Support Committees (SSC) in an admirably transparent manner. However, the basic funding of the schools by the government together with such extra programmes is far from being sufficient for even the scantiest operation of a school (e.g. drinking water supply for the children and teachers), so that at present without the support of the parents (and in many cases also of foreign donors) many schools would stop operating.

2. The Home-Grown School Feeding Programme: Introduction

2.1 Background of the Programme, Implementation and its Future

Within the framework of a joint study, in 2009 the World Bank and the WFP presented a summary study on school feeding. Bundy et al., the authors of the study, come to the conclusion that today every country on which information is available to the team seeks to provide food, in some way and at some scale, to its schoolchildren. Coverage is most complete in the rich and middle-income countries, and it seems that most countries, which can afford to provide food to their schoolchildren, do so (cf. Bundy et al. 2009). At least 368 million children in the world are fed daily at school through school feeding programmes (SFPs) which are run in varying degrees by national governments (cf. WFP 2017). Unfortunately, where the need is greatest in terms of hunger, poverty, and other poor social indicators, the school feeding programmes tend to be the smallest in scale, and are mainly targeted at the most food-insecure regions.

The authors of the 2009 study also conclude that, where school enrolment is low, school feeding may not reach the poorest people. However, there is evidence that school feeding programmes increase school attendance, cognition, and educational achievement. In many cases school feeding has a strong gender dimension, especially where it targets girls' education, and may also be used to benefit the poorest and most vulnerable children (cf. also FAO 2014).

The value of such programmes have also recognised by national actors. In the past, the concept of school feeding was often linked with exit strategies. In contrast, Bundy et al. are able to show that countries with successfully implemented programmes do not seek to stop providing food for their schoolchildren, but rather aim at transferring the programmes from externally supported projects to national programmes.

SFPs may be based on "home-grown" components (cf. WFP n.d.) in order to combine nutritional goals with economic (agricultural) development. The World Bank / WFP study states that "successful national school feeding programmes in middle-income and high-income countries tend to rely on local procurement of commodities, while programmes in low-income countries usually find themselves dependent on external sources of food aid" (Bundy et al. 2009: 45). Nevertheless, since about 2003 there has been a worldwide tendency, even in low-income countries and low-to-medium-income countries, to turn towards home-grown school feeding programmes. Such a programme started in Kenya in 2009, for instance, and such programmes have also started in Ghana and other countries, both in Africa and in other continents.

In **Cambodia**, in 2016 WFP provided a daily nutritious breakfast to approximately 300,000 pre-school and primary school children in 1,219 primary schools located in nine provinces of the country. The goal of the programme is to contribute through a hot meal to an improvement of the nutritional situation of the children, their health and therefore their performance at school. The financial burden of the parents is to be relieved; alongside the educational successes of their children, this is intended to have a positive effect on their readiness to send their children to school consistently. This goal seems to be attained, even if empirical findings on the actual state of health of the children are still required. It is a fact that the absence numbers of the school children have significantly been reduced, the success quotas have

increased (decrease in pupils repeating the year), and more children than previously make the transfer from primary school to secondary school (cf. Bundy et al. 2009.).

School feeding is practised in the form of a daily mealtime, which in the vast majority of schools is served before the beginning of lessons. Since the latter begin very early, at 7 a.m., the meal needs to be ready at 6:30 a.m. Some schools also allow the lesson time to begin with the meal and then prolong the lessons by 15 to 20 minutes. The children bring their own tableware: a plate or a bowl as well as a spoon. If they forget this, then they have to borrow tableware from other children. Some schools also keep a few bowls and spoons in reserve.

This early food distribution is practised almost everywhere in Cambodia, as hardly any children in Cambodia get a breakfast from home before school begins or are given a packed lunch. Admittedly many children receive some money to take to school, from 500 to a maximum of 2000 Riel (0.125 to 0.50 USD), but snacks which they can buy before school generally have little nutritional value, and by no means do all parents have the money for these snacks. The result is that later in the morning the children become hungry and leave the school in order to (perhaps) receive something to eat at home. This is successfully avoided by the hot breakfast.

In schools, which have two shifts, generally the alternation between shifts takes place once every week or once every month, and thus every child benefits. Here only half of the children receive the breakfast. For the second shift, in the afternoon, no meal is provided, as these children can generally take part in the lunch at home, which is the first hot meal for the household.

Food distribution in the school is free and does not exclude the children from wealthier families. Firstly, it would be too laborious to differentiate according to actual income. Secondly, it could be imagined that not having to pay could lead to stigmatisation, as it makes poverty visible. It would also hardly be possible to regularly collect the money of those who have to pay, as well as regularly checking which children from wealthier families should take part in the meal and which should not.

Most of the schools, which receive support from WFP Cambodia scheme get their basic food supply at a high level either from international purchases or from e.g. large rice mills in the country. The preparation of the food is carried out on site in each school, where a kitchen room or an open hut has to be constructed and equipped. This is done by the SSC with a financial contribution by the WFP.

Since 2015 a small number of schools, currently 84, have been acquiring their food supply locally from villages around the schools. This means that for the supply for one or more schools in a commune, an invitation for bids is made by the school(s) with support from the commune council. Local suppliers are invited to present their bids (see chapter 3.6). With this step WFP expects a better quality of supply (fresher and mainly from organic production), lower costs in relation to the food quality, and a positive impact on the local economy. Additionally, partly unexpected impacts are an increase in social cohesion amongst the



Pict. 4: Snacks sold in front of a primary school crowded by children

school-related stakeholders, and effects on local production and consumption patterns (see chapter 3.6).

The schools participating in the programme are selected according to the socio-economic condition of the commune. It is assumed that in a poor commune the majority of the households of the school children are also poor. It is interesting to note that poor and wealthier areas may be close to each other. E.g., Siem Reap is a well-situated town but poor areas start at a distance of only a dozen kilometres outside the town. Accordingly, some schools in two communes of Angkor Thom – i.e. the district of the famous Angkor Vat temple – are also receiving support from the WFP programme.

In about 40 schools WFP is cooperating with GIZ, a German state-owned corporation for development cooperation. In those schools WASH (i.e. Water, Sanitation and Hygiene) activities are carried out. The “Fit for School” approach applies principles of school-based management to support the implementation of daily handwashing, tooth brushing and regular deworming to address high-impact diseases. By implementing the activities as part of the daily school routine, it supports children in acquiring healthy habits and promotes sustained behaviour change (cf. GIZ 2017).

WFP is currently working together with the Cambodian Government in order to establish a national school feeding programme. In September 2015, a Road Map for starting this programme was signed. This Road Map is designed to mainstream school feeding into national policies and transfer the so far WFP-managed school feeding into a sustainable national programme by 2021.

In order to guide government and development partners towards such a programme five internationally-recognised quality standards are set out which are also used by many countries apart from Cambodia based on the “Systems Approach for Better Education Results – School Feeding (SABER-SF) methodology”. SABER-SF assesses five dimensions of the existing system and operational capacities, to identify opportunities and challenges for Home-Grown School Feeding (HGSF): (i.) National policy and legal framework (which has to allow for a sustainable programme and the prospective to hand it over to the state); (ii.) Financial capacity and stable funding (again, the prospective for transforming a donor-supported into a state-supported programme); (iii.) Institutional capacity for implementation and coordination (i.e. in Cambodia the existing administrative capacities in the commune and school management); (iv.) Design and implementation (consistency is required); and (v.) Community participation (in Cambodia strong participation on the part of the various SSCs is guaranteed)(cf. WFP 2017: 7).

A survey commissioned by the Royal Cambodian Ministry of Education currently aims at identifying the best way to organise the school feeding, either by a central supply system (as provided initially by WFP) or by the home-grown alternative (as recently favoured by WFP).

2.2 The Local Stakeholders

This study focuses on the 84 HGSFP schools in Cambodia as of May 2017 (which, according to WFP planning, in 2017 should increase substantially to about 200 schools). As in other countries also in Cambodia the management of school feeding has become increasingly decentralised with local procurement at least in the HGSFPs. This involves much more people than a traditional SFP, especially stakeholders like traders, producers, the commune staff, and even the actors in the school gain other and different roles compared with a centrally

organised food supply. This section presents the most important stakeholders in order to enable a better understanding of their role in the HGSFP.

The main and direct partners of WFP in both parts of the school feeding programme are the individual primary schools with their headmasters. When it comes to local procurement in HGSE, according to the administrative system in Cambodia the *commune*, represented by the head of the commune, has to play an important role in monitoring of service provision and all associated payment releases. Therefore, in practice all invoices of service providers (e.g. the food suppliers) have to be cross-checked by the commune secretary after a general release by the school representative. In the commune, again there is a division of responsibility. The commune chief provides the approval for invoices from suppliers regarding the conformity with the existing contracts (i.e. mode of service) while the secretary confirms the numerical value – and puts the official seal of the commune under the signature of the commune chief.

With regard to the individual school the most important person is the *school headmaster*. He is the main contact person of the programme. His responsibility is to coordinate the organisation of school feeding starting with the recruitment of the cook or the cooks, the preparation of the monthly menu plans, organising food supply and of the kitchen with its equipment, the fuel stock, etc.

However, the *school headmaster* does not act independently for his/her school when it comes to income and expenditure administration. It is up to the *School Support Committee* (SSC) to administer all budgets of the school, which exceed the basic government funding, WFP financial contributions for school feeding included. This SSC mainly consists of a couple of parents who are elected by the entirety of the parents. In order to link the narrower school community with the larger village and commune community, the village chief and a representative of the commune may also join the SSC.

It is up to the school headmaster to find one or two *cooks* who will regularly prepare the food for in our sample between only 85 but also more than 500 children. In most cases, the SSC will support the headmaster thereby to convince at best a neighbour woman to agree for the uncomfortable job, which in most cases starts in the early morning, at 3 to 4 a.m., to be ready at 6.30 or 7.00 a.m. at the latest.

It is also up to the SSC to organise a local contribution to the school feeding, (i.) the condiments for the food, and (ii.) firewood, which so far does not constitute an environmental issue in Cambodia. Condiments do not include salt or market based spices but typical local



Pict. 5: Young school children distributing food themselves

ingredients like fish sauce, fermented fish, and other spices, which may be collected from the forest. The SSC also tries to invite all parents to provide fuel wood to the school. This will be done either by collective action (e.g. procuring by a group of men who will take it from the bush land) or individually. In the latter case every child may carry a strong bough every week from home.

Teachers are also involved in the programme. Theoretically, they join the headmaster in preparing the monthly food schedule. In practice, the plan will be

elaborated by the headmaster and the supplier, who best knows the prevailing “best price” products. The teachers supervise the daily distribution of food, even if this runs astonishingly smoothly, without any arguments or any hectic pace. When the serving takes place individually in the classes, even very young girls (we did not see any boys doing this job) collect the food from the kitchen and distribute it to their fellow pupils. When the children have to come to the food distribution themselves, this also takes place in a very disciplined manner, as well as the washing of the dishes and the return to the classroom. Here the children check the register themselves, using lists.

A very important role in HGSF plays the local *food suppliers* – there may be up to three of these per school: a supplier for rice, a supplier for oil and salt, and a supplier for all fresh items (vegetables, fish, meat and eggs). These offer a package of foodstuffs for one year. The package may be in one of the three areas, or even all three. A supplier may supply just one school, or have several in its delivery area.

A similarly important role in HGSF is played by the *food producers*. These may be the suppliers themselves, but hardly anyone in the project zones can produce enough rice or vegetables to supply four or more schools. Hence, depending on the scope of the supply, a whole range of local farmers, traders, butchers and fishpond owners may be involved who benefit from the purchasing power of the programme.

Finally, the *parents* of the school children should be mentioned, as some of them also play an active role with respect to the procurement of firewood or the ingredients for the food. The parents also elect from among themselves the members of the SSC, which is known to play a very active role in the programme. Further stakeholders are *market traders*, who may sell meat or fish, or vegetables and rice when there is seasonal local insufficiency, as well as the *school children*, whose needs are of course also taken into account.

3. The Home-Grown School Feeding Programme: Realities and Outcomes

3.1 Methodology of this Review

The fieldwork for the review was carried out in February and May 2017. In February, two schools in Siem Reap Province were visited to gain a general impression of the school feeding programme, its activities and the main stakeholders. Meetings with these stakeholders were held in the school and/or the commune office, in the gardens of two vegetable producers, and at the fishpond of one fish producer. In both schools the researchers joined the food distribution early in the morning (6:30 and 7:00 am respectively) in order to get an impression of the degree of participation, the manner in which the food was served and the behaviour of the children.

Based on this experience the questionnaire from the visit was complemented and an additional sample of 16 schools selected in the four Provinces of the HGSFP in order to attain a total sample of 18 schools (out of 84 possible schools with the “home-grown” component = about 7%). The 16 additional schools were distributed along the Provinces as follows: Siem Reap 4, Otdar Mean Chey 4, PreahVihea 7, Kampong Thom: 1.



Pict. 6: Meeting with parents, teachers and other stakeholders in the meeting hall of a primary school

From the statistical point of view (representativeness) a sample of 18 out of a population of 84 does not fulfil the demands proposed by Crejcie / Morgan (1970) in order to reach a confidence level of 95%. However, as the objective of this review is not to precisely determine a particular income figure or the probability of a particular electoral result. In order to capture views and personal narratives of a broad spectrum of stakeholders and to gain an exemplary overview of the implementation of school feeding, a sample of 18 schools is more than sufficient.

Fieldwork was carried out with two teams, which visited one school during the morning lessons and a second school (which would inevitably have two shifts) in the early afternoon. Starting with the headmaster the various actors were interviewed in groups: teachers, parents (with the representatives of the SSC), the cook/s, a class with older children (mainly form 5 or 6), the food suppliers (one up to three), and after these meetings one or two producers of vegetables or fish at their gardens or fishponds. If the representative of the commune did not join a meeting in the school he or she was visited in his/her office.

Since at least a couple of parents joined the meetings, these interviews often gained the character of focus group discussions, although the Khmer tradition does not really support public discussions with critical views and statements. Hence, the advantage gained from these groups was more the possibility to ask about the completeness of arguments and to get additional answers.

Although there were never any problems with regard to the survey work in this report the schools are not quoted by their name or the village / commune of their location. A full list of

all schools visited can be seen in Annex 1, but when referring to specific statements or incidents no school reference will be provided.

3.2 How School Feeding Works and Some of its Outcomes

3.2.1 An Ordinary School Day

It is 3:30 a.m. when Ms Dy arrives at the school. She comes from the edge of the village and has to walk about 15 minutes in the pitch black. No street lights are available in the entire village. Fortunately, it is not the rainy season and the school has also a solar panel so that she can use a feeble electrical light for her preparations.



Pict. 7: Preparation of food (rice) in the kitchen

The day before – like every day apart from Saturday – the supplier has brought pork meat and vegetables (see Annex 2). From the store room of the school Ms. Dy takes the required amount of rice, cooking oil, salt, the “obligatory” Cambodian fermented fish sauce and other spices. After all preparations are done in the open kitchen she starts building the fire and begins with boiling meat and all the ingredients for the sauce. Today, this is mainly water spinach and another local variety of spinach. Later, she also prepares the rice in a wide-domed cooking pot (picture 7). At about 6:00 a.m. she is almost ready and takes a rest until, only few minutes later, the first teachers and children arrive.

This morning Ms. Dy is content as the heap of firewood next to the kitchen hangar is still big enough for today and even the next few days. However, she tells us that last month there was a shortage of firewood and she had to approach the SSC in order to inform all the parents that they should send more boughs the very next day. Later during the interview, she



Pict. 8: Central distribution of food in the kitchen

complains that the kitchen equipment requires replacement. Some of the pots are very old and she urgently need a new big pot for boiling rice. The headmaster of the school promised to take care of her request.

At exactly 6:30 a.m. the “delegates” from the six classes arrive in order to get a pot with rice and a smaller pot with the meat and vegetable soup. For the smallest children two teachers come, while for the remaining four classes two girls show up for each class. Back in the classroom the food distribution can now start. In one class, all children line up while the two

girls distribute the food. In another class, the children remain seated while the two girls serve each of their classmates at the table.

In another school visited, children have to come to the kitchen where elder girls do the serving. A long line of children wait until it is their turn. In this school, every child chooses his or her place for eating. Some pupils sit down on the floor in the garden, others go back to their classrooms and use their tables. In one other school, the SSC has invested in a type of canteen. In a hangar, a dozen simple tables and benches have been constructed and the food is distributed per table for a dozen of children each.

Some children always forget their bowls and spoons, especially on the first day of a new shift. Either the school has some additional pieces of crockery or the children provide mutual support. It may also happen that in order to educate the children no food is handed out if crockery is missing. However, this is an exception.

When the two big cooking pots are empty, the cook will start cleaning the pots. Then she leaves for her home. The children themselves wash all dishes, this contains both the smaller cooking pots and the individual plates or bowls and spoons.

For hygienic reasons and in order to provide the children with drinking water it is important for the schools concerned to have safe water sources. All 18 schools from our sample but one have at least one borehole with a hand pump which reaches safe aquifers (mainly India Mark-II or Mark-III comparable deep well hand pumps). Some schools have various water sources including a couple of new wells with electro-pumps and technical filter equipment. Here, the children are doing the dishes and take their daily drinking water. Only half an hour later, they go back to their classrooms.



Pict. 9: Children eating their hot breakfast in the classroom

3.2.2 Some First Results

The survey proves that school feeding is implemented in an absolutely wholehearted manner. Every school out of the 18 surveyed is able to provide school feeding regularly. Failures to provide food for any reason are exceptional, and in most schools there are none at all. In the last 12 months, the maximum supply breakdown lasted for one week in one school, when the cook was sick and her sister and husband had to bring her to the hospital. In another school, no food could be prepared for two days. In all other schools, it was reported that their pupils were not left without food for a single day during the last year. In most cases a family member of the cook fills the breach (even the husband or a brother) while sometimes a teacher does the job.

In about half of all schools, it was reported that shortage of firewood occurred or the promised condiments ran out of stock. However, again with support of the SSC or after intervention of the commune, the problem was solved and on the day of food preparation the requested materials were on site. Here the issue was always an organisational question and not at all any lack of willingness to support school feeding.

Almost all children participate in school feeding, independently of their social situation. Only between one and three pupils per hundred do not take part, for various reasons, but the non-participants are not always the same. Stomach ache, the exceptional case of already

having had an opportunity to get some breakfast, shame at having forgotten their bowl, etc. are some main reasons provided.

3.3 What Teachers and Parents Say

In all 18 schools discussions were held with parents and teachers either separately within their group or in a joint group, but aiming at assigning the answers / opinions stated to the particular group. For the **teachers**, there are three main spheres of outcomes and impacts from school feeding. First is the effect on learning: with breakfast children can follow the lessons much better and there is absolutely no difference amongst the children: even if they do not have money for snacks they will not leave school before the end of the school day (see Box 1). Although so far no empirical proof exists for this, school teachers think that with sustainable school feeding the school attendance of both boys and girls is prolonged and so that more children continue to secondary school than before the programme started.

The second effect, as seen by many teachers interviewed, is the fact that the burden on their pupils' parents is lightened. For most of them it is really a huge sacrifice to give them 1,000 or even 2,000 Riel a day for buying snacks. Some cannot do this at all. But there are also many parents who do not have any spare money but yet they try to give them some Riel so that they do not contrast with their wealthier schoolfellows. This may increase economic hardship at home.

Box 1: We were tired of continuing class with one third of the children missing

Ms Phuong is a young teacher in a primary school, which participates in the home-grown school feeding programme in Cambodia. The school has about 300 children and there are two shifts. She sees one main advantage of a hot dish for all her children in the morning: "Lessons start at 7:00 a.m. After about two hours, children become more and more uneasy and start to disturb tuition. During the break, those with some money from their parents go to the snack bar in front of the school where they buy bread, biscuits, ice cream and sugared water. But many children come without the 1,000 Riel which are the minimum required to get a piece of something. So some of them leave school and go home in order to find some food. Sometimes more than a third of my 35 children do not come back at all. So they miss the last two hours and cannot follow lessons the next day. At the end of the year, their grades are low and often they have to repeat the entire class. In the worst case, parents do not allow their children to continue school after grade six if their grades are so bad. However, with school feeding at morning and especially with a hot dish, the situation is absolutely different. The children are much less nervous and even those who have no money for purchasing snacks will not leave school before the end of the lessons".

The third point mentioned in at least one out of every two discussions is a more unexpected outcome, a substantial increase in social cohesion and a general improvement in school life and also a different school-to-society relation. Without established school feeding many SSCs remain more or less inactive or they limit themselves to minor activities. Once school feeding has started and the SSC has gained importance they change their attitude, and voluntarily participate in supporting school feeding. This not only takes the form of firewood and condiments, but also additional work, e.g. in the form of constructing the hangars for the kitchen. Apart from this, they do general repair works and support the school with small amounts of money.

There are also direct benefits for the teacher. It is much more motivating for them to work with children who are happy and follow the lessons awake. Although it is not an objective of the programme there is also occasionally (or often ?) the chance for teachers and the headmaster to benefit from the food.

For the *parents*, either organised in the SSC or coming to our meetings without any special role in the school, what counts is mainly the fact that their children get food for which they do not have to pay. And as there is no longer a certain pressure to give them money to compete with the kids of wealthier families they feel relaxed now as such expenses may easily reach 6 - 10% of the available cash money in poor households if the family has two children at school. This opinion is not openly expressed, but it comes from individual interviews and the parents even looked quite happy when referring to this point.

Like some of the teachers, but obviously more often, parents also refer to the better state of health of their sons and daughters since school feeding has started. And like the teachers they also confirm that it is much easier now to motivate their children to go to school. The opinion that food expenditure at home may be reduced in those villages where children get school feeding was rejected by both parents and teachers, when this issue was spoken about. However, empirical data about the physical impacts of school feeding are still lacking. Regarding the school attendance such figures could perhaps be drawn from the local statistics. However, this was not possible during this survey.

It is very important to indicate that both the parents and the teachers repeatedly indicate the good quality of the local foodstuffs. This is accompanied by terms such as “natural” and biological, i.e. the foodstuffs, above all the vegetables, were believed to be grown without chemical fertiliser and pesticides, and the meat and fish to be produced in a “natural” manner, something which was also repeatedly confirmed by the producers (cf. chapter 3.7).

3.4 The Children’s View

Most children in primary schools are between six and twelve years old. This age allows for interesting discussion about their opinion regarding various types of food and how they feel when they have received a hot meal in the morning. It is also possible to speak about motivation to go to school and what is good and what is bad during school attendance. But this age does not allow for a profound discussion about the learning impacts of school feeding.

When asked whether they like the meals served, the children answered “yes” in unison (see picture 10), raising their hands after this question. Indeed, from the roughly 10 different menus on the monthly lists (as an example see Annex II) there was not a single food which was disliked in general. However, some dishes are better than the others. For instance, So Koko, a thick soup with a wide variety of meats, vegetables and condiments, ranks very high and eggs with spinach are also an absolute favourite on the menu list. However, when the children are asked what could be served if the children themselves were able to order, hands shot up when the words “grilled



Pict. 10: Discussion with children in the fourth year about the type and quality of food

chicken” or “grilled pork” are mentioned. Such dishes are rare in their homes, and even the wealthier families in villages are not accustomed to serving such dishes, which may be eaten by tourists, containing quarter or even half of a roasted chicken or a piece of meat which fills the plate. For a school feeding programme based on limited subsidies in a developing country, such dishes would not be found on menu lists anywhere in the country. The children in the schools we investigated also do not at all expect such wishes to come true.

When speaking about impacts of school feeding, children show a generally positive motivation to go to school. “I like going to school” is often linked with “in school I get food” but unfortunately we were not able to compare such answers with children from schools which do not have a school feeding programme. However, there is an interesting proxy indicator, which shows a link between school feeding and a general positive attitude to school life: when it is asked what children generally tell their parents about their school days, it is not the content of the lessons which they mention or what teachers or their classmates said etc., but the type of food they got in the morning.

3.5 The Cooks

In chapter 2.2 it was noted that the headmaster or even someone from the commune council tries to find a cook or two and persuade them to do this important job. ‘Persuade’ is the right word, as the incentive to do the work is terribly low. Only during the last few months has it been considered in some of the communes whether to put the cooks on the payroll. Up to now the main remuneration of the cooks has been just 20 or 30 kg of rice, which they get from the SSS, this corresponds a value of about eight to twelve USD, for a relatively uncomfortable work early in the morning six days per week. Alternatively, 25,000, 30,000 and a maximum of 50,000 Riel were mentioned as payments in cash, which is between 6.25 to 12.5 USD. At the same time, the minimum wage in Cambodia is about five USD per day or 150 USD per month. This means that the cooks should get at least about 50 USD per month if we count only three hours per day as working time.

Then again, there is very little possibility for the cooks with whom we talked in the 18 schools to find alternative employment in their village. As they are mainly elderly women they would not be able to go to the town by motorbike, and they are almost all too old to be day labourers in the agriculture sector. The candidates and actual cooks are well aware of this, so that they are much more pleased with their job and the remuneration than the small salary may lead us to believe. “It is for the school” was a common argument relating to the question why they do the job, and at the same time “it is an important assignment to cook for the children”.

All cooks do their job with admirable discipline, and as mentioned previously, if they were prevented from working, it was reported in almost all cases that a relative or someone from the school replaced them at very short notice and with the same dedication.

3.6 The Side of the Suppliers

The perhaps most difficult and most complex role is that of the suppliers of food. One school or several schools together, in the latter case often with the coordination of the commune, draws up a yearly plan of requirements, which is bundled into three packages. The first package (i.) consists of rice, which in a randomly selected case study among the 18 schools has a weight of 21 metric tonnes, the required amount for the four schools. The second package (ii.) consists of vegetables, meat, fish and eggs, with vegetables being delivered daily, and the other items alternately. A third, smaller package (iii.) contains cooking oil and cooking salt. Offers can be made for an individual package, but an overall offer may also be presented for all three packages, as is often the case in sparsely settled areas.

A public invitation to tender is made for the supplies. Since only a few potential suppliers came into consideration, these were also sometimes directly contacted. In order to fulfil the formal requirements for an invitation to tender, in the framework of public events all potential suppliers were informed precisely about the procedure. This led, at least in some communes, to an increase in the number of interested parties, after a certain amount of initial scepticism. In particular, the men and women were concerned about price rises in the course of the delivery year, which could lead to losses. This problem was solved by presenting lists of alternative products, containing a series of other products of equivalent value, which could be delivered instead of a specific requested product.

The research team was told that for instance the price of eggs may increase by up to 50%, so that the supplier for meat, fish and eggs may switch to including more meat or more fish. Each product has a nutritional value according to its category, and the head of the school and the monitoring commune representatives accept such changes if they are



Pict. 11: "My fertiliser used for the children's vegetables is absolutely 'bio'"

Pict. 12: A local vegetable producer in a village of Angkor Thom

Pict. 13: A newly made fishpond to serve the school's requirements of fresh fish

plausible. None of the suppliers from our sample had a complaint regarding the acceptance and the payment statement for such replacements in the supply basket.

In the second year, in individual communes due to the wide dissemination of information up to 20 offers were made for one delivery package. Dialogues with current suppliers, about half of whom were women, showed that the profit margin from trade with the schools can vary greatly. Oil and salt produce less than 100 USD over the whole year, if the statements of those interviewed are correct. Trade with rice can yield between 10 and 25 % of the net price of the rice, i.e. between 40 and 100 USD per tonne (t) – in our example between 867 and 2,166 USD. For vegetables the profits are sometimes considerably lower, as high transport costs (daily delivery to several schools) need to be taken into account. Since in the case study the supplier needs to buy all of the fresh produce herself, only 600 USD of profit are said to be accumulated per year. It is different for suppliers who have fishponds or vegetable gardens themselves (see Chapter 3.7).

Despite the generally rather modest profit margins, all of the suppliers interviewed showed a certain level of satisfaction, which may also come from the fact that the calls to tender provided the initial trigger for a business model which was previously hardly known, at least in the remote villages. After it apparently worked well with the supply of one or more schools, many suppliers extended the business and opened a kind of wholesale trade for the many small shops, which already existed in the villages.

3.7 Role of the Producers

Only some suppliers are also producers of vegetables and/or fish and just one is also a butcher. For all the other 17 school supply packages, meat has to be purchased at the market or directly from a butcher. Having between one and three main butchers is the norm for most suppliers as markets are more expensive and in most cases also far away (up to 25 km in one sample).

In the home-grown school feeding programme the local producers therefore play a very important role. Economic effects can be observed here, even more so than with the suppliers of the various supply packages. For instance, the number of parties involved here is considerably greater than with the suppliers. In the example of the 21 t rice for four schools, around 20 suppliers are involved, who supply an amount ranging from a few 50 kg sacks to five tonnes. The same applies for vegetables, meat, fish and eggs. Here, in the current year 5.28 t have been agreed upon – in order to provide this, contributions are provided by three butchers and a fish trader, as well as around 60 households which can each only provide small amounts of vegetables.

Two women have an outstanding position among these suppliers, as they each operate intensive vegetable cultivation in an area of around 400 to 500 m². Both have their own well with a hand pump and can supply about 10 kg of vegetables per day, which provides them with a net profit of about 50 USD each. One of the women, who has no cows (and therefore also has no cow dung), is proud of the fact that she only uses certified organic fertiliser (see pict. 11). In another commune one supplier himself cultivated two hectares of land, one hectare of which was planted with vegetables. With an annual harvest of four to five metric tonnes, he has a profit of almost 2000 USD per year, in addition to the profit he gains from supplying the school. He now only sells around 40% of the harvest to the schools, and delivers the rest to local markets.

In the district of Angkor Thom, another supplier acquired two large water pools, which he has been using since 2015/16 for fish cultivation. For 2016/17 he expects four tonnes of fish

yield. He explains that he raises fish in his pond without any use of antibiotics. When required, only traditional treatment techniques based on plant extracts are used (see pict. 13).

It was interesting to learn from the survey that the numbers of producers, both of vegetables and of fish, is increasing in the villages. Both many suppliers and producers have also now exceeded the framework of supplying schools and have begun to cover the local market. Moreover, the range of locally produced vegetable varieties has also been considerably extended. Where previously only *morning glory* was cultivated (which some of the children interviewed would consequently not describe as their favourite food), with the two women mentioned alone eight kinds of leaf vegetables could be supplied in a yearly cycle.

3.8 The Engagement of the Communes

All representatives of the commune state that they are happy with home-grown school feeding and that they are supporting the process as well as they are able with their (limited financial) means. Apart from the recent discussion about taking on the payment of the cooks it is mainly the procurement which is supported by the commune as well as the supply with firewood and condiments. In most communes a commune representative shares the SSC as a member of the committee. This facilitates the mobilisation of the parents and helps to ensure their contribution to the operation of the school kitchen.

4. General Conclusions

The survey was not able to obtain empirical data on positive changes in the health of the children in the 18 reference schools. However, teachers unanimously confirmed that the children are much more active during the lessons and that they no longer leave the school before the official end of the lessons. Parents also state that their kids are healthier than before and that they do not need to be pushed any more to go to school.

Compared with high-level (even international) procurement of supply for school feeding, the 18 school examples show clearly that the home-grown school supply has both an economic impact on the people around the schools and quite interesting effects on the awareness of children, parents, and teachers. The economic impact is based on additional income-generating activities for between 20 and 200 and more households per commune, starting with one to three suppliers, the providers of fish, meat and eggs, and the producers of rice and vegetables.

In this way, in addition to its substantial impact on children's nutrition, the programme contributes locally to poverty alleviation. In some villages, with the large numbers of producers involved this impact could even surpass the effects from other programmes which directly target the rural population with agricultural support programmes.

With regard to the parents, school feeding contributes substantially to the reduction of excessive expenses coming from providing the kids daily with money for snacks, which may take up to 10% of the available cash income of the households and represent food of doubtful quality.

The benefits of the suppliers and individual producers are frequently modest, yet an additional 50 USD per month to the cash income of a rural household in Cambodia by all means counts. In contrast, for many suppliers and a growing part of the producers local procurement is increasingly becoming a full-time occupation, with regular incomes which lift the families considerably above the poverty line. At the same time agricultural production gets a substantial incentive for diversification of production, mainly in the vegetable production sector (e.g. formerly scarcely produced and little-known nutritious vegetables arrive on the markets) but also with regard to fishery based on artificial ponds.

Regarding awareness, first of all the stakeholders in and around the school feel that the children gain a substantial benefit from school feeding with regard to their health and school performance. This has an impact on the social cohesion amongst parents and teachers regarding school feeding itself, but also when it comes to general support to the operation and maintenance of the participating schools.

If we look at the menu served by the school feeding programme there is another important impact: people suddenly start to speak about "natural food" and they start comparing the food with its various vegetables, meat/fish/eggs and condiments in the school with snacks served to the children (at least to those from wealthier families) outside the school.

We do not yet have empirical evidence, however, from the children's reports we learned that the kids speak with their parents about the food they had at school and they started to ask for similar dishes also at home. This may have an additional positive influence on the local agricultural production and the diversification of vegetables on the local markets.

The programme – compared with Brazil, for instance – is more or less at its beginning. With the inclusion of pre-school classes it is linked with the objective to improve the nutritional situation of children during their first 1000 days of their life. If school feeding is combined

with general nutrition education programs for mothers with small children, it might even be possible to contribute to the higher objective of improving the nutritional condition of children during their first 1000 days after birth.

Last but not least with the procurement procedure additional effects become visible, especially an awareness of the commune staff, as well as other stakeholders such as local traders and market-oriented farmers, of the customs of modern markets. There is also an increased feeling of responsibility on the part of the commune leaders for the local schools and their operation and maintenance.

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Annexes

Annex I:

List of Schools Included in this Survey					
No. of school	Province	Commune	Village	No. of pupils	No. of teachers and ratio pupils / teachers
1	Siem Reap	Lyeng Dai	KoukKreul	125	10 / 12.5
2	Siem Reap	Lyeng Dai	TrapaingSvay	272	11 / 25
3	Siem Reap	SvayChek	Srah	322	13 / 25
4	Siem Reap	SvayChek	Wat Slat Romchey	86	5 / 17
5	Siem Reap	SvayChek	SvayChek	723	23 / 31.5
6	Siem Reap	Lyeng Dai	Samrong	352	9 / 39
7	Otdar Mean Chey	Pong Ro	Pong Ro	313	12 / 26
8	Otdar Mean Chey	Chomka	BanteayTmey	291	11 / 26.5
9	Otdar Mean Chey	Chung Kaul	Prey Thoum	341	16 / 21
10	Otdar Mean Chey	Cheung Tien	Cheung Tien	264	13 / 20
11	PreahVihear	Rum Thum	TrapaingTotoeum	146	6 / 24
12	PreahVihear	KhumThmey	Stung Sen Monorum	139	4 / 35
13	PreahVihear	Tbaeng II	Tbaeng II Chhuk	310	5 / 62
14	PreahVihear	Srayang	Romchek	194	5 / 39
15	PreahVihear	Srayang	Srayang	1.025	14 / 73
16	PreahVihear	Roville	Rik Reay	311	20 / 15.5
17	PreahVihear	AnlangSvay	Svay	235	10 / 23.5
18	Kampong Thom	Chey	Mohor	295	9 / 33
Total				5,744	196/29.5

Annex II:

Menu overview and supply list for (daily) provision of vegetables and fish / meat / eggs for one school, six days per week with the same weekly food menu for one month. The menu and supply will change from one month to the next according to the availability mainly of seasonal vegetables.

តារាងមុខម្ហូប និង តម្រូវការស្បៀងប្រចាំថ្ងៃ សំរាប់ខែ ឧសភា ឆ្នាំ ២០១៧
 សាលាបឋមសិក្សា ស្រះសែន សិស្សសរុបជាមធ្យមក្នុងខែ: 95

ថ្ងៃ	មុខម្ហូប	ប្រភេទស្បៀង ប្រភេទ	បរិមាណត្រូវការ ប្រចាំថ្ងៃ សរុបស្បៀងសិស្ស ក្នុងមួយថ្ងៃ	ចំនួននិងថ្ងៃ ត្រូវការក្នុង ខែ	សរុបបរិមាណ តម្រូវការក្នុងខែ សរុបស្បៀងសិស្ស ក្នុងមួយខែ
ចន្ទ	ម្ហូបគ្រឿង	គ្រឿង	2,7 kg	3	8,1 kg
		គ្រឿង	3,5 kg		10,5 kg
អង្គារ	ប្រហោង	ស្រូវសាល	2,7 kg	5	13,5 kg
		ម្ហូបគ្រឿង ស្រូវសាល	3,5 kg		17,5 kg
ពុធ	សាម៉ាញស្រី ស្រូវសាល	សាម៉ាញ	38 គោប	5	190 គោប
		ស្រូវសាល	3,5 kg		17,5 kg
ព្រហស្បតិ៍	ញោស្រី	ញោស្រី	2 kg	3	6 kg
		ស្រូវសាល	3,5 kg		10,5 kg
ព្រហស្បតិ៍	ក្រូច	ស្រូវសាល	1,40 kg	4	5,6 kg
		ស្រូវសាល	1,30 kg		5,4 kg
		ស្រូវសាល	3,5 kg		14 kg
សៅរ៍	ម្ហូបគ្រឿង	គ្រឿង	2,7	3	8,1 kg
		គ្រឿង	3,5		10,5 kg

រៀបចំដោយ (នាយសាលា)
Semk
 សាលាសិក្សា
 ថ្ងៃទី ០១ ខែ ឧសភា ឆ្នាំ ២០១៧

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