

CAMBODIA FOOD SECURITY AND NUTRITION QUARTERLY BULLETIN

ព្រឹត្តិបត្រត្រីមាស សន្តិសុខស្បៀង និងអាហារូបត្ថម្ភនៅកម្ពុជា



HIGHLIGHTS

Flooding in September has affected a significant portion of the population. Although the planted area for wet season rice and other crops are higher than last year, the impact of the floods will negatively affect production outlook. Price levels of key food commodities are higher than last year and the price of rice – the main staple – will likely increase in the short-term due to Thailand's rice pledging policy. Food security trend analysis (2004-2009) shows that undernourishment levels have decreased in rural areas but have not changed in urban areas.

Environmental Conditions and Disasters

High rainfall levels in September were a key cause in the widespread flooding throughout the country. The river water level in both the Mekong and Tonle Sap rivers reached flooding levels in late September, causing massive river floods. By 11 October, the floods have affected 279,868 families of which 34,204 families were displaced.

Food Production

Wet season rice cultivation figures at the end of the current quarter (September 2011), show that rice planted area has increased by 4.4% compared to the corresponding time last year. However, the current floods have affected 15.7% and destroyed 8% of the total rice planted area. If the flooding continues or the waters do not recede, more rice paddies are expected to be destroyed.

Food Prices

Food price inflation, at 7.6% in August 2011, is driving overall inflation. The prices of key food commodities (i.e. rice, fish, pork, duck eggs) have increased significantly, even when accounting for inflation. Additionally, the Thai government's rice pledging policy which went into effect on 7 October, is likely to cause regional rice prices to rise in the short-term, and the price hike will most likely be transmitted to local rice prices.

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Health and Nutrition

Diarrhea and dysentery cases are lower than the high levels seen in 2010. The 2010 cholera outbreak has stopped and there is no reported widespread outbreak in 2011. However, close monitoring of disease outbreak is required in the upcoming months, especially in the most heavily flooded regions.

Undernourishment levels have decreased in rural areas but have stayed the same in urban areas from 2004 to 2009. It is likely that higher food prices in Cambodia have disproportionately affected the urban population. Compared to 2004, in 2009, Cambodians were eating less cereals and vegetables, but more fish and meat, eggs and pulses, which resulted in the decrease of the daily carbohydrate consumption and the increase in the consumption of protein and fat.

The Cambodia Food Security and Nutrition Quarterly Bulletin aims to provide decision makers with a regular overview of trends and emerging threats relating to food and nutrition security in Cambodia. It is a collaborative effort between the Council for Agricultural and Rural Development (CARD), the Ministry of Agriculture, Forestry and Fisheries (MAFF), the Ministry of Water Resource and Meteorology (MoWRAM), the Ministry of Health (MoH), the National Committee for Disaster Management (NCDM) and the National Institute of Statistics (NIS), with technical and financial support from UNICEF, the World Food Programme, the EC-FAO Food Security Programme and the World Health Organization, and with financial support from the MDG Achievement Fund for Children, Food Security and Nutrition.

To receive copies of this Bulletin, please contact: Secretariat of the Technical Working Group for Food Security and Nutrition, Council for Agricultural and Rural Development (Tel: +855 23 428 464, email: foodsecurity@online.com.kh, website: <http://www.foodsecurity.gov.kh/>)



This bulletin consists of secondary analysis of government administrative data and publically available data on a list of standard indicators – from regularly collected government data – agreed upon in the terms of reference of the Food Security and Nutrition Data Analysis Team.

ENVIRONMENTAL CONDITIONS AND HAZARDS

Rainfall

In the third quarter of 2011 (July to September), Cambodia experienced rainfall levels that were significantly higher than historical levels (Table 1). The cumulative rainfall in all provinces in Cambodia in the third quarter of 2011 (July 2010 to September 2011) was 8.3% higher than the 2000-10 historical average for the same time period, and 23.1% higher than in 2010 Q3.

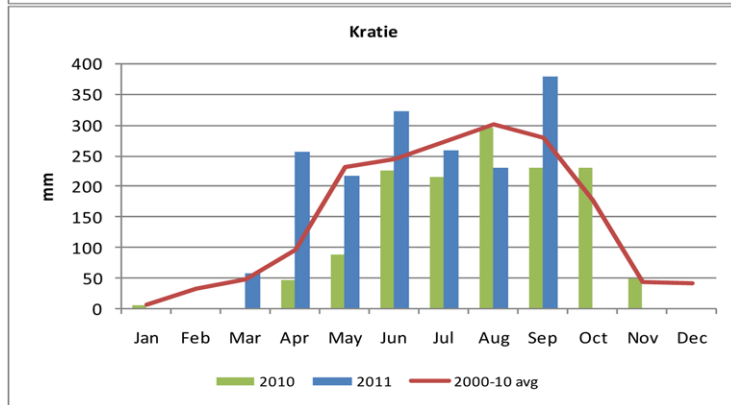
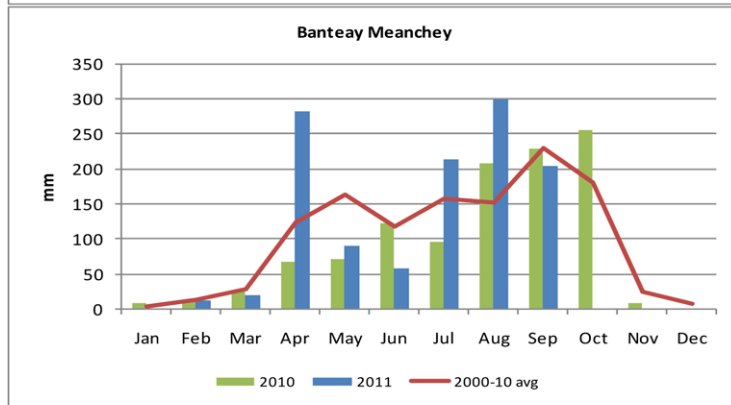
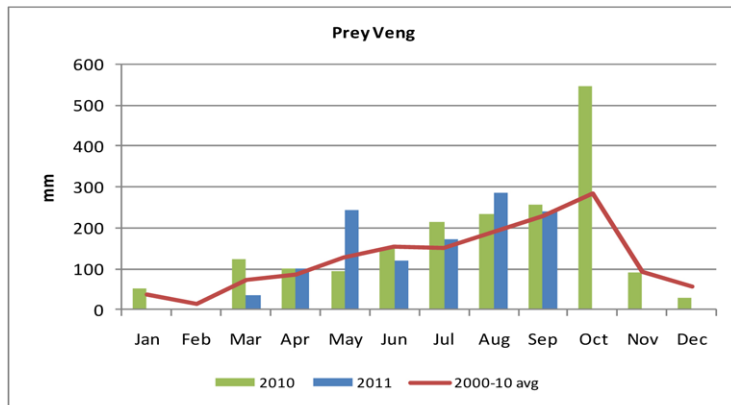
Table 1: Rainfall in Cambodia in July, August and September

	2000-10 avg (mm)	2010 (mm)	2011 (mm)
July	244.0	218.9	226.4
August	259.6	245.8	275.9
September	272.6	218.3	338.6
average	258.7	227.7	280.3

Source: Ministry of Water Resources and Meteorology

Rainfall patterns in four selected provinces¹ representing the main agro-ecological zones are reported in Figure 1.

Figure 1: Rainfall levels in Cambodia and selected provinces



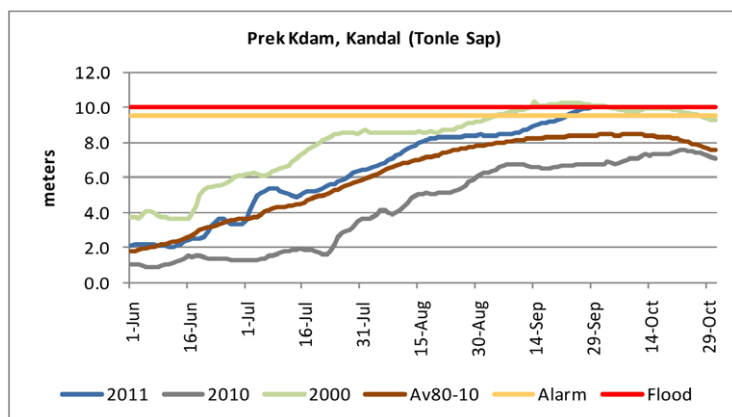
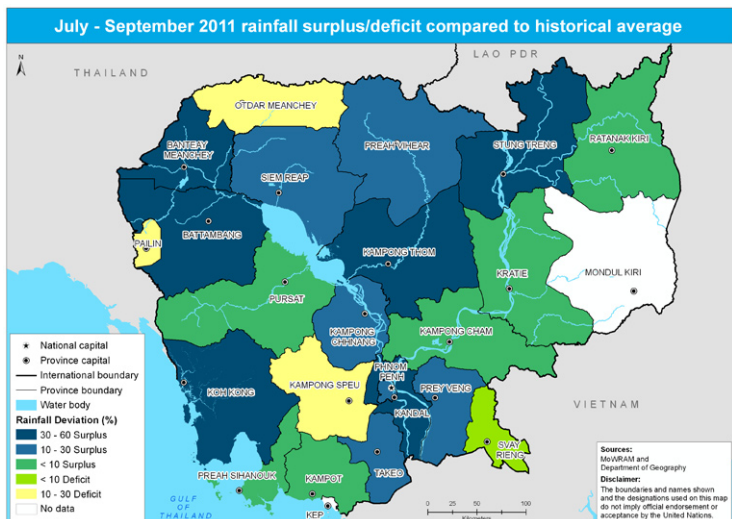
Source: Ministry of Water Resources and Meteorology

High rainfall in September was a primary cause of flooding in September. In September 2011, rainfall levels in Cambodia were 55.1% higher than in September 2010 and 24.2% higher than the 10-year historical average for the same month. Rainfall levels in September were especially high in Kampong Thom and Stung Treng, where rainfall increased by 268% and 257%, respectively, compared to September 2010, and by 66% and 84%, respectively, compared to the historical average for the same month.

The differential of the past quarter’s rainfall (July to September 2011) to the 10-year historical average rainfall level during the same months is displayed below in Map 1. Most provinces in Cambodia saw an increase in rainfall levels in the third quarter of 2011 compared to the historical average.

¹ Kampot is in the Coastal zone, Prey Veng in Plains zone, Banteay Meanchey in Tonle Sap zone, Kratie in Plateau/Mountain zone

Map 1: Rainfall surplus and deficit



Source: Ministry of Water Resources and Meteorology

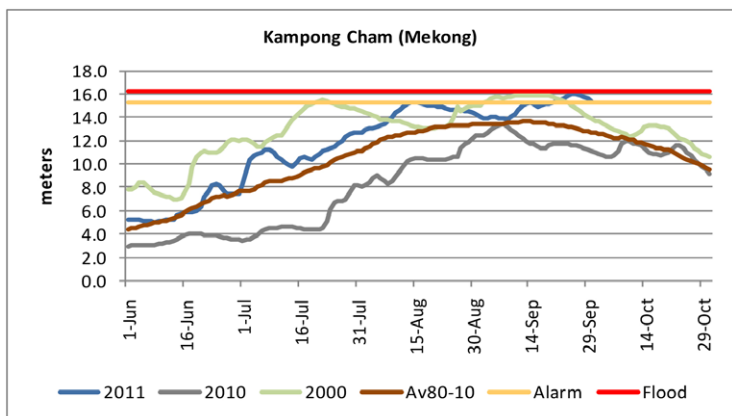
River water levels

At the end of September 2011, water levels in both the Mekong and Tonle Sap rivers surpassed alarming levels and were at or near flooding levels. Water levels were significantly higher than the 30-year historical average and 2010 levels.

The Mekong River water level (as measured by the Kampong Cham station) exceeded the alarming level in mid-August, but soon receded without exceeding the flooding level (Figure 2). In mid-September, water levels in the Mekong surpassed alarming-levels again and nearly reached flooding levels, while continuing to stay above alarming levels when this bulletin is being published.

The Tonle Sap water level (as measured by the Prek Kdam station) exceeded the alarming level for the first time on 22 September 2011 and exceeded the flooding level on 2 October 2011. The water level is above the flooding level as this bulletin is being published.

Figure 2: Water levels in selected stations in Mekong and Tonle Sap rivers



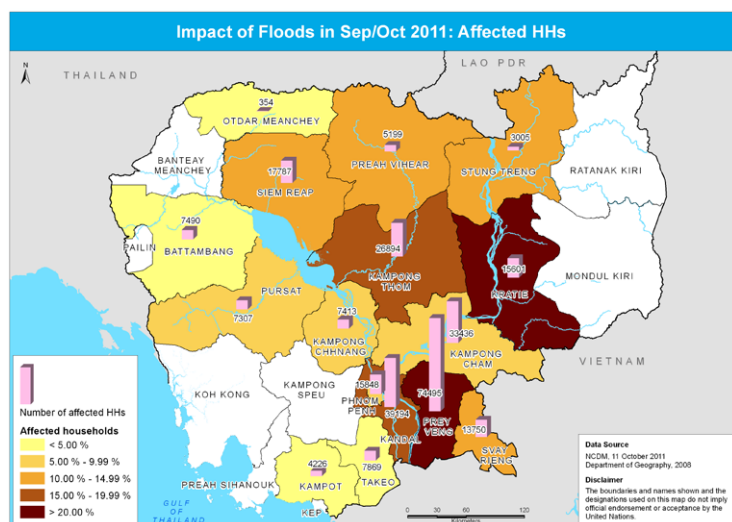
Disasters

According to the National Committee for Disaster Management (NCDM)², floods since mid-August have:

- Killed at least 207 people
- Affected about 279,868 families of which 34,204 displaced
- Affected 333,327 hectares of rice paddies of which 158,981 hectares are damaged
- Affected 207 km of national and provincial roads and 2,326 km of rural roads
- Affected 205,306 houses, 402 pagodas, 94 health care facilities and 1,138 schools

17 provinces (of 24 provinces in Cambodia) have been affected. The worst affected areas are Prey Veng (77,495 households affected and 51 dead), Kandal (39,194 affected and 4 dead), Kampong Cham (33,436 affected and 46 dead), and Kampong Thom (26,894 affected and 34 dead). Map 2 below shows the affected households by province.

Map 2: Affected households from floods in September/October



FOOD PRODUCTION

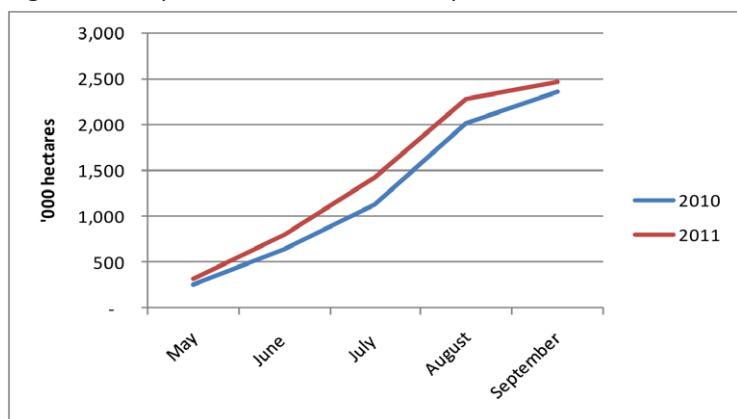
Rice cultivation

In 2011, rains came earlier than last year (in April), which allowed rice farmers to start planting earlier than in 2010. By the end of September 2011, the total planted area for all types of rice was 2.46 million hectares, 4.4% higher than the total planted area by the end of September 2010 (Figure 3). However, the increase in

² According to NCDM report on 11 October 2011

rice cultivation will be muted when taking the areas affected and damaged by the floods into account (discussed below).

Figure 3: Rice planted area, cumulative by month



Source: Ministry of Agriculture, Forestry and Fisheries

Table 2 below compares the rice planted area at the end of September in 2011 and 2010. The last column presents the proportion of the total planned wet season rice cultivation that has already been achieved at the end of September.

Compared to last year, the rice planted area in Takeo increased the most, by 10.9%. Kampong Thom and Battambang also saw increases in rice planted area compared to last year, increasing by 6.5% and 6.2%, respectively.

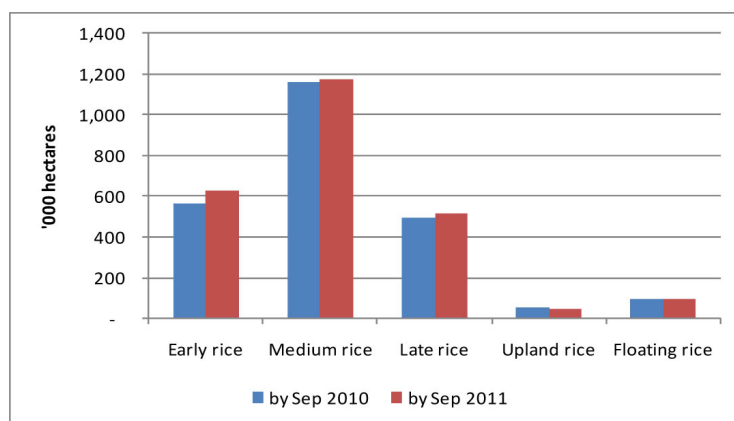
Table 2: Rice planted area, by province

	through Sep-10 (ha)	through Sep-11 (ha)	2010-11 annual change (%)	achieved /planned (%)
Banteay Meanchey	230,681	232,720	0.9%	105.8%
Battambang	269,498	286,194	6.2%	114.5%
Prey Veng	267,447	272,617	1.9%	109.0%
Siem Reap	179,180	179,710	0.3%	100.4%
Kampong Thom	181,856	193,655	6.5%	99.3%
Takeo	175,867	194,955	10.9%	114.7%
Kampong Cham	161,497	165,277	2.3%	99.9%
others	896,028	939,812	4.9%	134.7%
total	2,362,054	2,464,940	4.4%	105.8%

Source: Ministry of Agriculture, Forestry and Fisheries

By September, the planted area of the rain-fed lowland rice varieties (early, medium and late rice) increased this year. The cumulative planted area of early rice increased by 12% year-on-year in August. The planted area for medium and late rice increased to a lesser degree, by 1.2% and 5.3%, respectively. However, the planted area for upland rice and floating rice decreased by 7.1% and 0.9%, respectively, compared to September 2010.

Figure 4: Rice planted area, by type

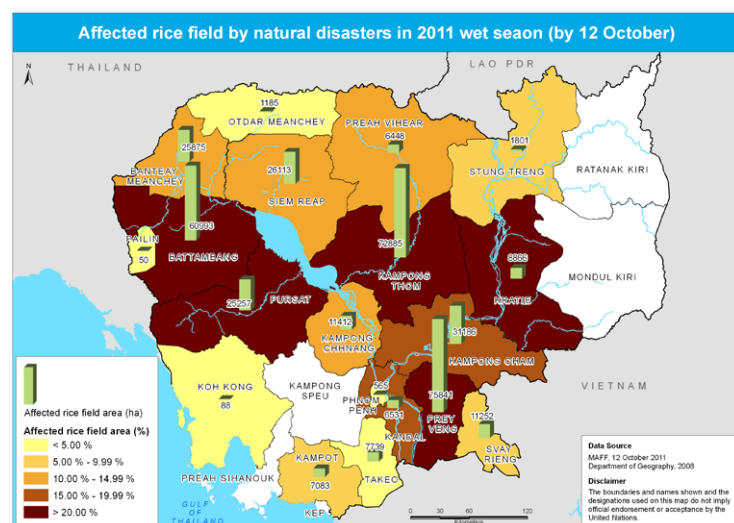


Source: Ministry of Agriculture, Forestry and Fisheries

The heavy flooding in September 2011 has significantly affected rice paddies throughout Cambodia. MAFF reported on 12 October 2011 that 388,124 hectares of rice planted area (15.7% of total) were affected by natural disasters, of which 98% were due to floods. 184,987 hectares of rice crops (8% of total) were confirmed to be destroyed.

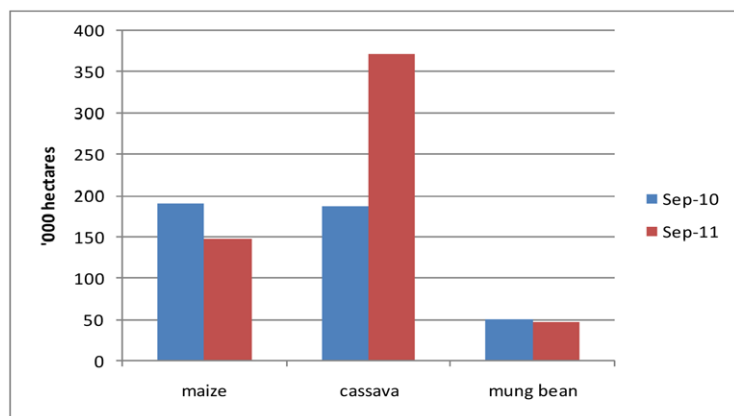
Rice planted areas in Kampong Thom and Prey Veng were the most affected by the floods. In Kampong Thom, 37.6% (72,885 hectares) of rice planted areas were affected by floods. In Prey Veng 27.87% (75,841 hectares) of rice planted areas were affected (Map 3).

Map 3: Affected rice planted areas from floods



Subsidiary and industrial crop cultivation

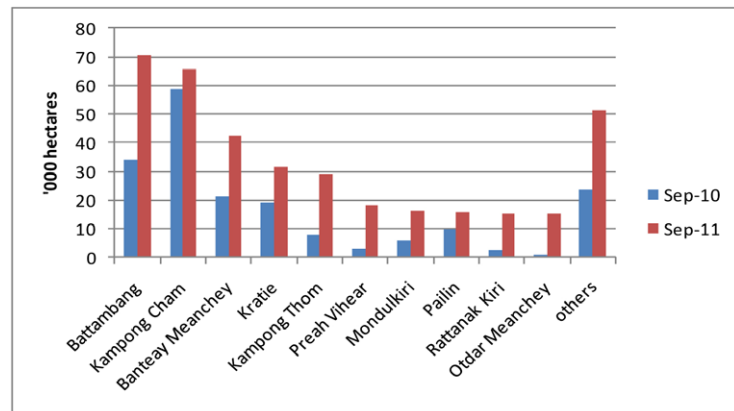
Figure 5 compares the planted area of three key subsidiary and industrial crops in September with September 2010. While the cultivation of mung beans decreased by 7.2% year-on-year, the cultivation of maize and cassava saw drastic changes. Maize cultivation decreased by 22.2% compared to last year, while cassava cultivation doubled (99% increase).

Figure 5: Planted area of key subsidiary and industrial crops

Source: Ministry of Agriculture, Forestry and Fisheries

The price of cassava has risen rapidly, driven by increased demand in international markets, chiefly Thailand and Vietnam. Driven primarily by increased demand from China, export prices of Thai cassava starch in January and February 2011 were around 40% higher than the previous year. This affected the cassava prices in Cambodia where prices after the end of the 2010-11 cassava harvest in February³ were 50-100% higher than they were after the 2009-10 harvest⁴.

As cassava is reportedly easier to grow than other crops, this increase in cassava prices has pushed farmers to increase cassava cultivation this year. The decrease in the cultivation of maize can be explained as a substitution away from maize to cassava.

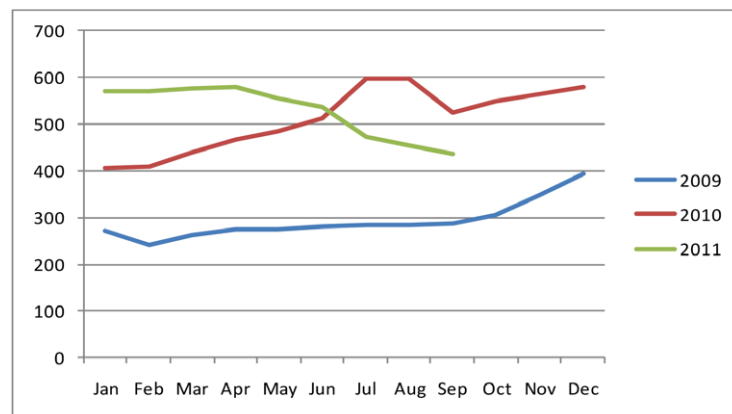
Figure 6: Planted area of cassava, by province

Source: Ministry of Agriculture, Forestry and Fisheries

The increased cultivation of rice and industrial crops compared to last year could have resulted in increased demand of agricultural labour activities. If this is the case, more labour opportunities in rural areas and the subsequent increase in agricultural wage rates will have a positive effect on the food security situation of the landless and land-poor households in rural areas. However, if the rapid decline in Thai cassava starch prices during the past quarter continues into the harvest season early next year, cassava farmers will be affected by lower price levels compared to earlier this year.

³ Cassava is planted in March or April and harvested from December to February in Cambodia.

⁴ Cassava price increases are estimated from price quotes from Malay district market in Banteay Meanchey (Agricultural Marketing Office, MAFF).

Figure 7: Thai Cassava starch export prices (FOB Bangkok)

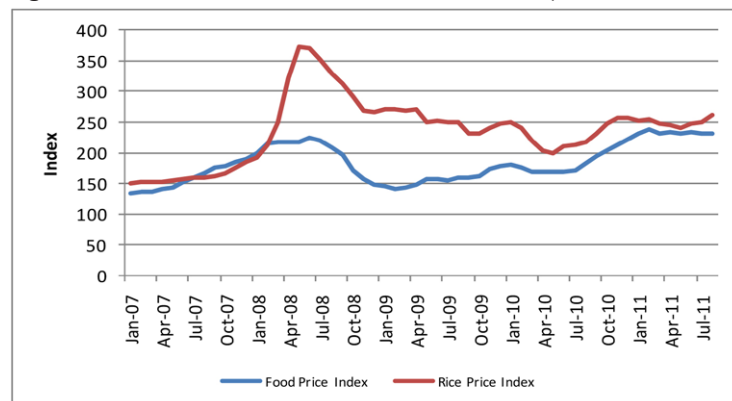
Source: Thai Tapioca Starch Association

FOOD PRICES⁵

International food and rice prices

The FAO Food Price Index⁶, measuring the international price level of a basket of key food commodities, averaged 225 points in September 2011, slightly decreasing (for the third consecutive month) by 2% month-on-month as most commodities included in the index decreased, especially sugar, grains and oil. However, the index was 16% higher than September 2010 (Figure 8).

International rice prices increased also slightly decreased by 0.4% on a monthly basis in September 2011 as the FAO Rice Price Index averaged 259 points. The index was 11.6% higher than in September 2010. A key cause of the high annual increase in international rice prices is due to a policy change in Thailand – the world's largest rice exporter – which guarantees a higher paddy rice price to domestic farmers (to be discussed further in the following section).

Figure 8: FAO Food and Rice Price Indices (100 = 2002-04)

Source: FAO, <http://www.fao.org/worldfoodsituation/FoodPricesIndex/en/>

Regional rice prices

In September 2011, the f.o.b. prices⁷ of Thai A1 Super white rice (100% broken) and Vietnamese white rice (25% broken), two benchmark prices for Asia, were 497 USD/mt and 515 USD/mt, respectively.

⁵ The daily wage of unskilled labour could be used to calculate the terms of trade for unskilled labour and rice, a proxy indicator for the food purchasing power of households. However, regular data collection and reporting of unskilled wages are not available.

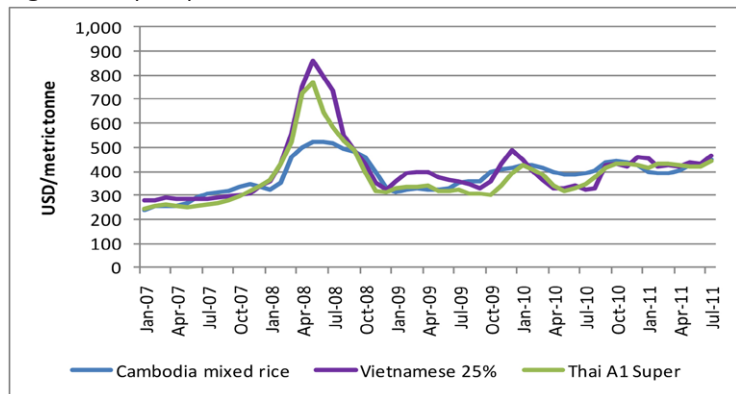
⁶ The FAO Food Price Index consists of the average of commodity group price indices (i.e. meat, dairy, cereals, oils/fats, and sugar) weighted with the average export shares of each of the groups for 2002-2004.

⁷ Free on board (f.o.b.) price includes all charges up to the placing of goods on board a ship at the port of departure specified by the buyer.

The Thai A1 Super white rice price increased by 5.6% month-on-month and by 20.2% year-on-year. The Thai government's rice pledging policy which guarantees to purchase paddy rice from farmers at rates much higher than the current market price started on 7 October 2011⁸. This is expected to drive Thai export prices upward.

The Vietnamese 25% broken white rice price decreased by 2.8% month-on-month but increased by 20.6% year-on-year (Figure 9). The year-on-year increase in prices was in line with the general inflation rate of 22% in September which was driven primarily by higher food and fuel costs, according to the Vietnam General Statistics Office.

Figure 9: Export price of Thai and Vietnamese white rice



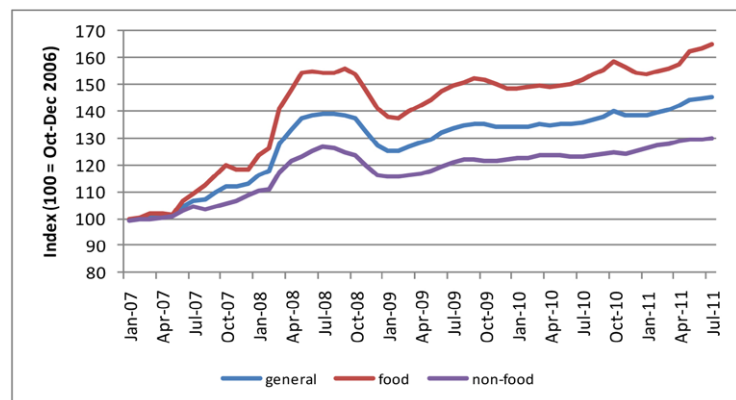
Source: FAO, <http://www.fao.org/es/esc/prices/PricesServlet.jsp?lang=en>

Local consumer price index and food price index

The general Consumer Price Index (CPI) measures the cost of a consumption basket composed of 259 items. Each item is weighted based on their importance in an average household's expenditure⁹. In August, the general CPI increased by 0.1% month-on-month. The inflation rate, as measured by the year-on-year increase in the consumer price index¹⁰, was 6.4%.

The Food Price Index (FPI) measures the cost of the food items in the general CPI's consumption basket. Food items make up 50.4% of the total consumption basket. In August, food price inflation, at 7.6% year-on-year and 0.4% month-on-month, was driving overall inflation (Figure 10).

Figure 10: Relative change in general consumer prices, food prices and non-food prices (base = Oct-Dec 2006)



Source: National Institute of Statistics

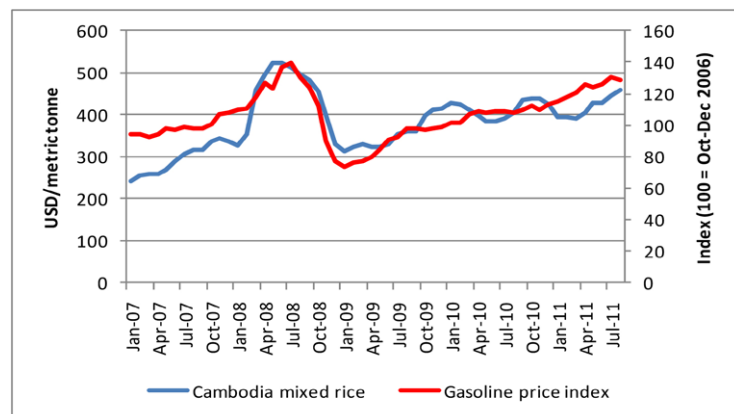
8 The Thai government will guarantee THB 15,000 (US\$500) per ton for paddy rice and THB 20,000 (US\$670) per ton for fragrant paddy rice (Bloomberg, 7 October 2011)

9 Relative item expenditure weights are derived from the 2004 Cambodia Socio-Economic Survey and adjusted to October-December 2006 price levels.

10 The CPI is collected and reported by the National Institute of Statistics (NIS).

A key driver in the inflation rate is the significant increase in the price of gasoline. Gasoline prices have increased by 19.2% year-on-year, closely tracking international oil price trends. Higher gasoline prices increase transportation costs and are directly transmitted to wholesale and retail prices (Figure 11).

Figure 11: Wholesale price of mixed rice and gasoline prices

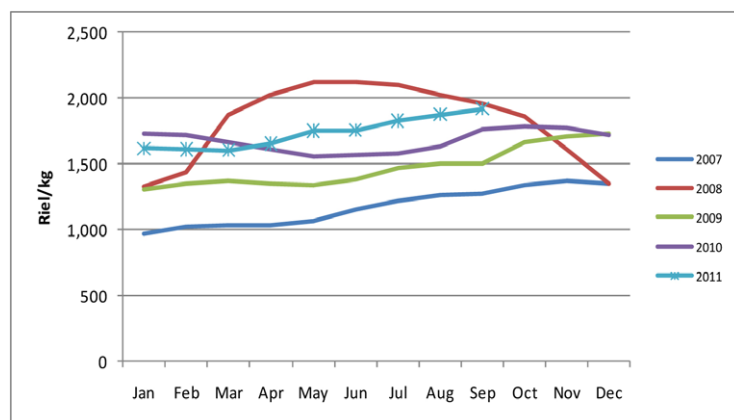


Source: Cambodia Agricultural Market Information Service, MAFF; National Institute of Statistics

Local wholesale and retail food commodity prices¹¹

Price reports from the Agricultural Marketing Office of the Ministry of Agriculture, Forestry and Fisheries show that in September 2011 the average wholesale price of mixed rice¹² in Cambodia increased by 2.3% month-on-month (Figure 12).

Figure 12: Wholesale price of mixed rice¹³



Source: Cambodia Agricultural Market Information Service, MAFF

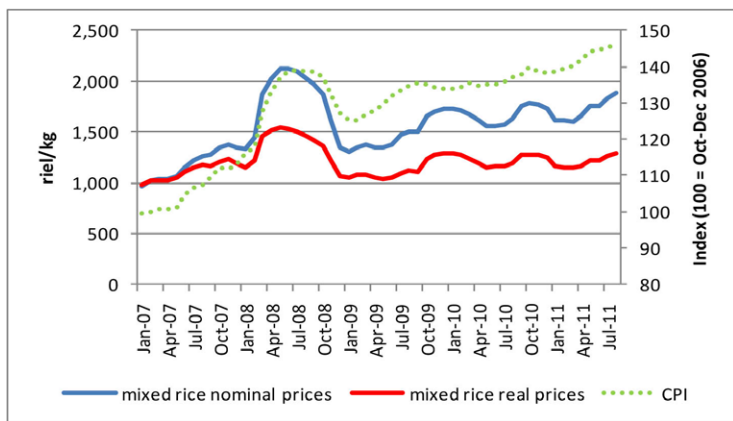
Nominal prices of wholesale mixed rice in September 2011 were 9.1% above prices in September 2010. Real prices (adjusted for inflation) increased by 2.7% (Figure 13).

11 Data analysis on food expenditure data of CSES 2009 is expected to be available by the next issue of this bulletin.

12 Mixed rice is considered a low quality rice.

13 Wholesale rice prices are calculated with price quotes from urban markets or rice mills in the following provinces: Kampong Chhnang, Kampong Cham, Takeo, Siem Reap, Prey Veng, Phnom Penh, Kampot, Battambang, Banteay Meanchey.

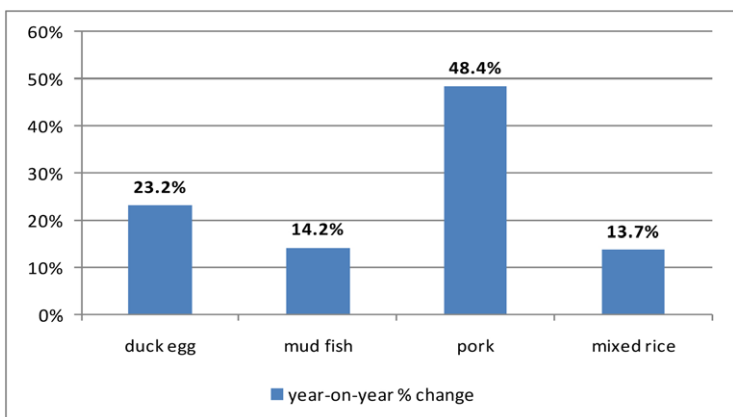
Figure 13: Nominal and real wholesale price of mixed rice



Source: Cambodia Agricultural Market Information Service, MAFF; National Institute of Statistics

The retail prices of key food commodities increased on an annual basis (Figure 14). Compared to September 2010, the retail price of pork in Cambodia increased by 48.4% and duck eggs prices increased by 23.2%. Retail prices of mud fish and mixed rice increased, less dramatically, by 14.2% and 13.7%, respectively. The increases in these key food commodities are in line with the CPI report that shows that food prices are driving the general CPI.

Figure 14: Year-on-year change (%) in food prices and key food commodity prices (from September 2010 to September 2011)



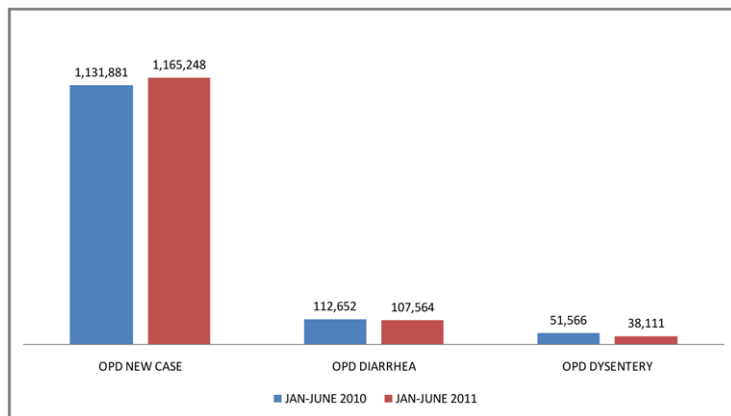
Source: Cambodia Agricultural Market Information Service, MAFF

HEALTH AND NUTRITION

Health information system¹⁴

While the total number of new outpatient cases for children has increased in the first semester of 2011, both diarrhea and dysentery cases have gone down (Figure 15). Total new child cases increased by 3%; diarrhea cases dropped by 4.5% and dysentery dropped by 26%. These trends suggest better care-seeking for children by parents and a real drop in diarrheal disease.

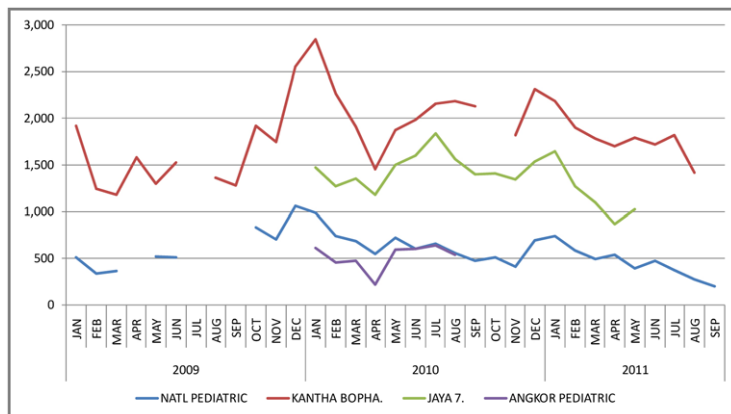
Figure 15: First semester new outpatient cases of children under 5 in hospital and health center



Source: Health Information System, Ministry of Health

Hospitals data confirms that diarrhea is lower in 2011 when compared to 2010, but levels do not appear lower than 2009 (Figure 16). This suggests that 2010 levels were higher than average. Peaks in both January-February and May-July are evident.

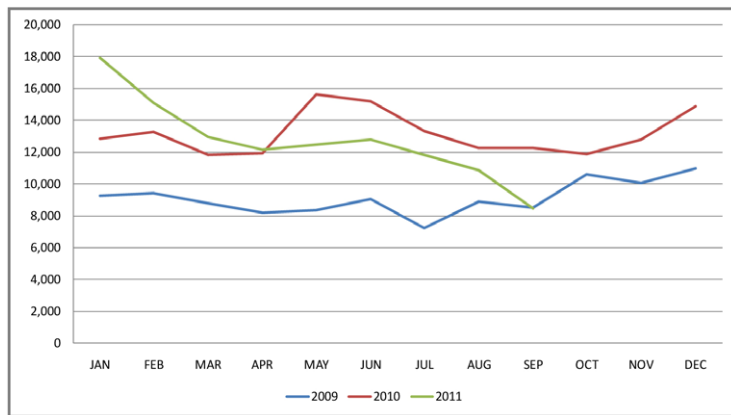
Figure 16: New outpatient diarrhea cases in selected hospitals



Source: Health Information System, Ministry of Health

Health center data shows incidence returning to 2009 levels after a high level in 2010 (Figure 17). The May-Jul peak in 2011 is significantly lower than that of 2010. Levels can be expected to begin to increase again before the end of the year.

Figure 17: Outpatient new cases of diarrhea at health centers



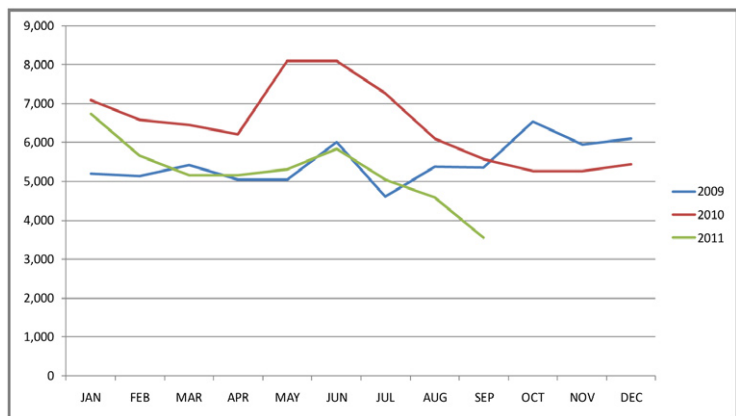
Source: Health Information System, Ministry of Health

Health center data confirms the outbreak of dysentery during the May-July peak and shows clearly that levels of dysentery have re-

¹⁴ The Health Information System (HIS) of the Ministry of Health (MoH) does not collect regular nutrition data. Nutrition indicators from the Cambodia Demographic and Health Survey 2010 were reported in previous issues of this bulletin.

turned to normal and are now similar to 2009 levels (Figure 18).

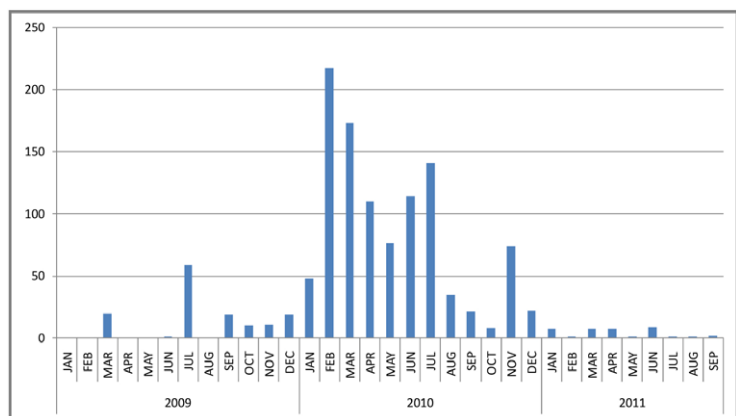
Figure 18: Outpatient new cases of dysentery at health centers by month



Source: Health Information System, Ministry of Health

The 2010 cholera outbreak has stopped and there is no reported widespread outbreak in 2011 (Figure 19). Isolated cases in September are reported in Sampov Luon Operational District of Battambang Province.

Figure 19: Inpatient discharge of cholera by month



Source: Health Information System, Ministry of Health

Food security trend analysis

The National Institute of Statistics (NIS) conducted a trend analysis of food consumption data using from the 2004 and 2009 Cambodia Socioeconomic Survey (CSES).

Using the indirect measure of household expenditure on food, the proportion of the population that is undernourished¹⁵ fell from 37 percent in 2004 to 33 percent in 2009 (Figure 20).

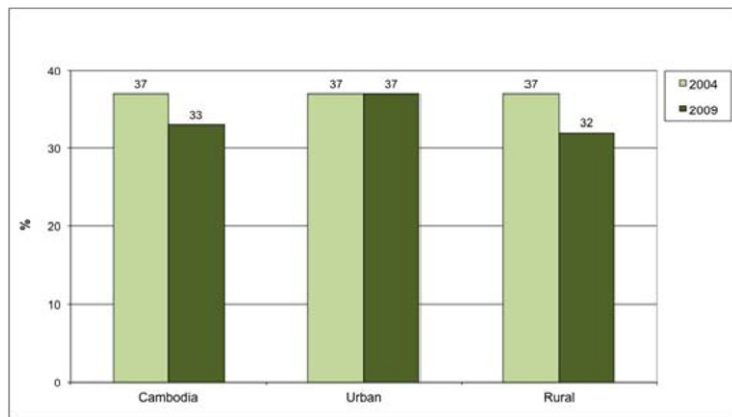
In rural areas, the proportion of the population that is undernourished decreased from 37% in 2004 to 32% in 2009. However, in urban areas, there was no change: the undernourished population was 37% in 2004 and 2009.

The poorest households, particularly net food buyers and those in urban areas, remain vulnerable to high food prices with little ability to cope with economic shocks. Among households in the

¹⁵ Undernourishment refers to the condition of people whose dietary energy consumption is continuously below a minimum dietary energy requirement for maintaining a healthy life and carrying out a light physical activity with an acceptable minimum body-weight for attained-height. For Cambodia, the Minimum Dietary Energy Requirement (kcal/person/day) is 1,770.

poorest wealth quintile food consumption accounted for 70% of total household consumption compared to 45% among the richest households.

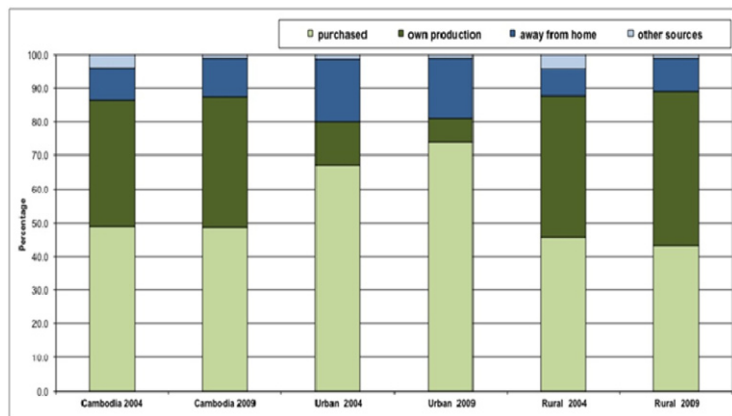
Figure 20: Percentage of Undernourishment, National, Rural, Urban



Source: National Institute of Statistics

In urban areas, the main source of food was market purchases, composing 75% of consumed food (Figure 16). In rural areas, 42% of consumed food was from market purchases, while 45% was from own production. This can help explain why higher food prices in 2009 compared to 2004 affected the undernourishment level of urban population more.

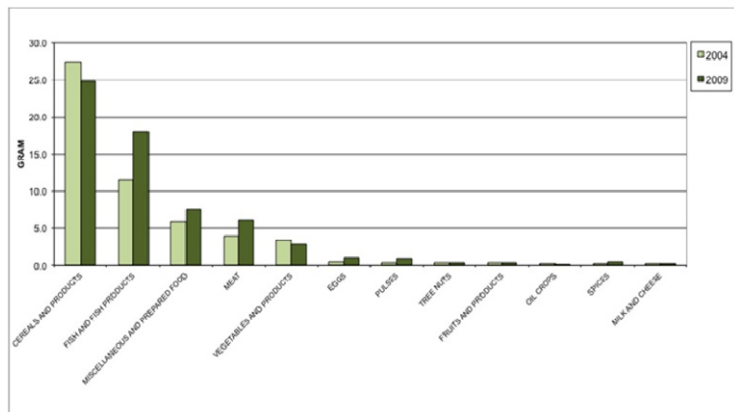
Figure 21: Share of Dietary Energy Consumption by Food Sources



Source: National Institute of Statistics

Dietary diversity in Cambodia has changed from 2004 to 2009. Compared to 2004, in 2009, Cambodians were eating less cereals and vegetables, but more fish and meat, eggs and pulses (Figure 17).

Figure 22: Dietary Energy Consumption by Food Commodity Groups (Kcal/person/day)



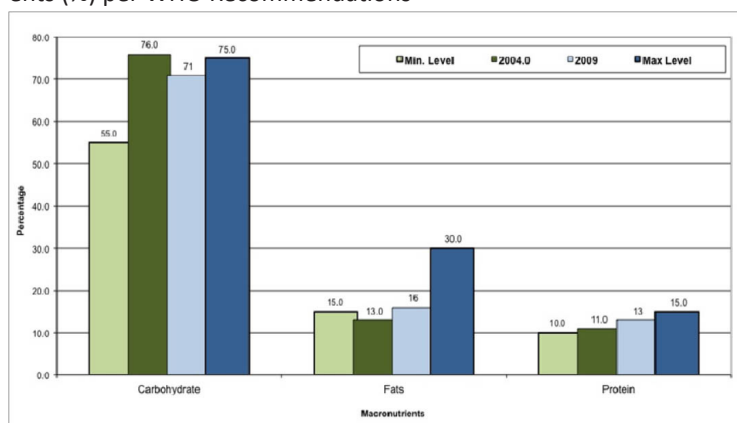
Source: National Institute of Statistics

The result of the change in dietary diversity has been that carbohydrate consumption has decreased (from 370.5 g/person/day to 354.2 g/person/day), while the consumption of protein and fat has increased (from 54.5 g/person/day to 62.8 g/person/day and 28.7 g/person/day to 36.3 g/person/day, respectively) from 2004 to 2009 (Figures 23).

In urban areas, the change in macronutrient consumption from 2004 to 2009 has been more drastic than in rural areas. In urban areas, carbohydrate consumption decreased by 10.5% and protein consumption increased by 25.4%. In rural areas, carbohydrate consumption decreased by 3% and protein consumption increased by 12.3%. Fat consumption increased by similar levels in both urban and rural areas (26.7% and 24.5%, respectively).

Compared to WHO global macronutrients recommendations for a balanced diet, the average Cambodian diet had improved from its 2004 level. In 2009, data showed that consumption of carbohydrates, fats and protein were all within the recommended norms, while in 2004 only protein consumption was within the recommended levels.

Figure 23: Share of Dietary Energy Consumption from Macronutrients (%) per WHO Recommendations



Source: National Institute of Statistics