

CAMBODIA FOOD SECURITY AND NUTRITION QUARTERLY BULLETIN

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HIGHLIGHTS

High rainfall in September caused severe flooding in September/October in 18 (of 24) provinces, affecting a significant proportion of the population. Although 11% of rice paddies were destroyed by the floods, the main wet season rice production in 2011 increased from 2010. Rice prices were volatile due to the floods, but are close to normal levels following the main wet season harvest. Increasing diarrhea and dysentery levels should be closely monitored.

Environmental Conditions and Disasters

The floods in September/October were caused by heavy raining in September, especially in the upper Mekong region. The water levels in both the Mekong and Tonle Sap rivers surpassed the alarming stage and reached flooding levels in mid/late-September. Water levels in the Tonle Sap continued to stay above the alarming stage and near flooding stages until late-October. The floods were the worst in a decade and affected 354,217 households and destroyed 284,295 hectares of rice paddies.

Food Production

Although the floods in September and October destroyed 11% of the cultivated area of wet season rice, the wet season rice production in 2011 increased by 2% from 2010. The increase in cultivated area, high levels of replanting in some flooded provinces, and higher yields outweighed the effect of the floods on the main wet season rice harvest in 2011. The high fluctuation in cassava cultivation was caused by volatile regional cassava prices.

Food Prices

The price of rice, the main staple, was highly volatile in 2011 Q4. Mixed rice wholesale prices sharply increased by 11.6% and 7.3% in October and November, respectively, on a month-on-month basis as the usual price increase during the lean season was amplified by the floods in September/October. Rice prices decreased rapidly in December as the start of the main wet season rice harvest put a downward pressure on prices. However, the food purchasing

ISSUE #5 | October – December 2011

Environmental Conditions and Disasters.....	2
» Rainfall	
» River water level	
» Disasters	
Food Production.....	4
» Rice production	
» Subsidiary and industrial crop cultivation	
Food Prices.....	6
» International and regional food and rice prices	
» Local Consumer Price Index and Food Price Index	
» Local wholesale and retail food prices	
» Price monitoring and forecasting	
» Food purchasing power of vulnerable households	
Health and Nutrition.....	8
» Diarrhea and dysentery cases	
» Food security trend analysis	

power for vulnerable households decreased in December as the decrease in labour demand caused unskilled wages to drop.

Health and Nutrition

The latest data from the Cambodia Health Information System show that diarrhea cases for children under 5 have increased in 2011 Q4, especially in December. Close monitoring of disease outbreak is required in the upcoming months, especially in the most heavily flooded regions. According to the food consumption trend analysis of the 2004 and 2009 Cambodia Socioeconomic Surveys, 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.

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.

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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 DISASTERS

Rainfall

High amount of rainfall in September was a primary cause of the large floods in September and October. However, starting in October rainfall levels were similar or below normal levels. In the fourth quarter of 2011 (October to December), the amount of rainfall in Cambodia was 8% lower than the 10-year historical average (Table 1). The rainfall amount in October 2011 was 33% lower than in October 2010 as rainfall in October 2010 was abnormally high and caused heavy flooding. The sharp decrease in rainfall amount in November due to the start of the dry season does not affect dry season cultivation and is favorable for the remaining wet season harvest.

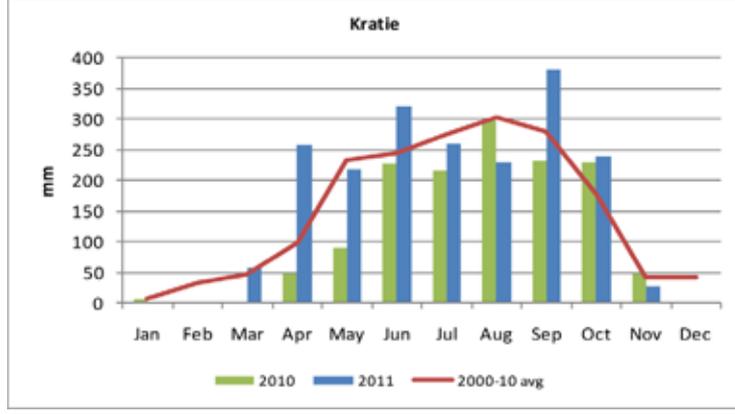
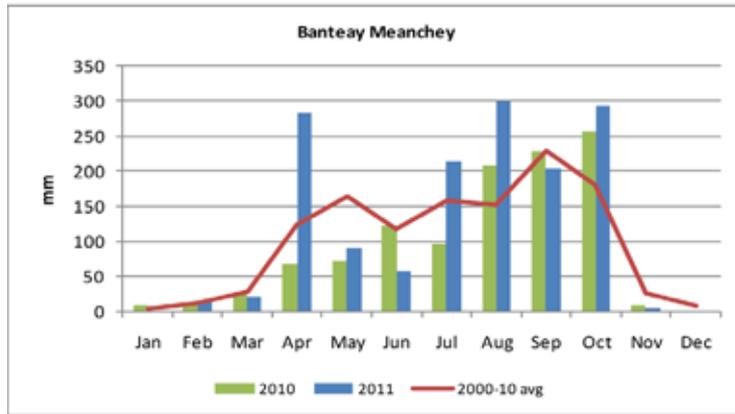
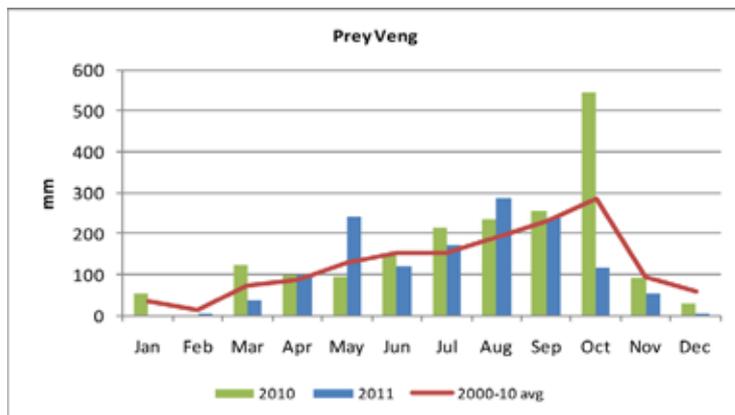
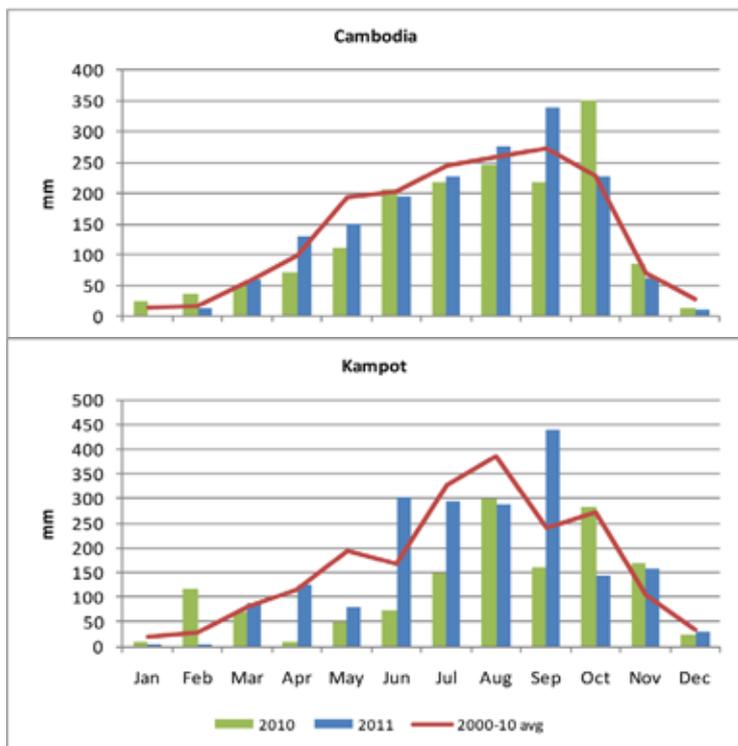
Table 1: Rainfall in Cambodia in July, August and September

	2000-10 avg (mm)	2010 (mm)	2011 (mm)
October	227.4	351.2	227.3
November	70.3	84.3	62.2
December	28.3	13.3	10.7
average	108.7	149.6	100.1

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

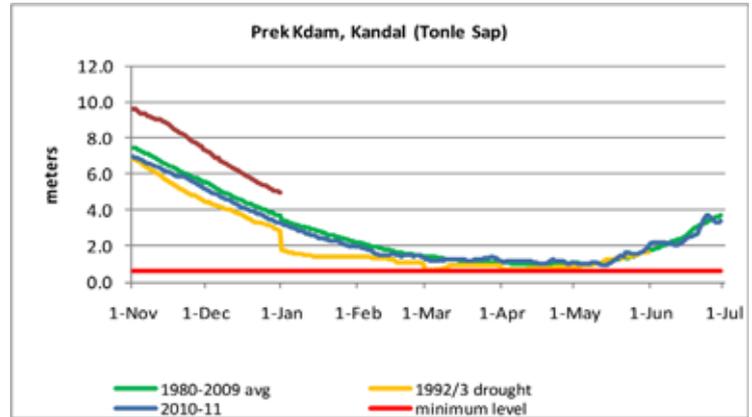
High rainfall in September 2011 was the primary cause of the flooding in the wet season. In September 2011, the rainfall amount in Cambodia was 55.1% higher than in September 2010 and 24.2% higher than the 10-year historical average for the same month. The rainfall amount in September was especially 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.

In October 2011, prior to the start of the dry season, the rainfall amount in Cambodia was similar to the 10-year historical average, but 35.3% lower than in October 2010 when there were severe flash floods throughout the country. In Kampong Thom and Prey Veng, rainfall amounts in October 2011 decreased by 49.1% and 78.6%, respectively, compared to October 2010.

The differential of the past quarter's rainfall (October to December 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 the amount of rainfall in the third quarter of 2011 compared to the historical average.

¹ Kampong Thom 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



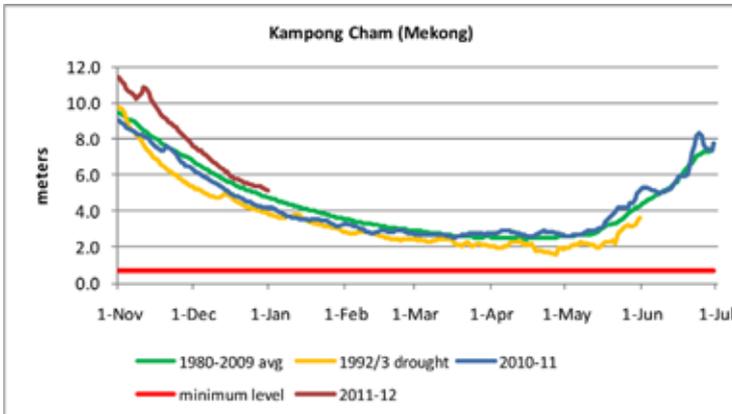
Source: Ministry of Water Resources and Meteorology

River water levels

River water levels in both the Mekong and Tonle Sap rivers in the current quarter were significantly higher than in 2010 Q4 and the 30-year average levels in the fourth quarter. Water levels in the Mekong surpassed the alarming stage and reached flooding levels in mid/late September. In the Tonle Sap, water levels surpassed the alarming stage in mid-September and continued to stay above the alarming stage and near flooding stages until late-October. Heavy rainfall in the upper Mekong region was the primary cause of the high river water levels and river flooding seen in September and October, as rains increased water levels in rivers and streams.

In November 2011, the water level in the Mekong (as measured in the Kampong Cham station) decreased from 11.4 meters to 7.8 meters. By the end of December the water level was at 5.1 meters (Figure 2), similar to the 30-year average, but almost 1 meter above levels at the end of December 2010. The water level in the Tonle Sap (as measured in the Prek Kdam station) decreased from 9.6 meters at the beginning of November to 5 meters at the end of December as the direction of the Tonle Sap reversed and started flowing from the Tonle Sap lake to the Mekong River. The water level in the Tonle Sap is significantly above levels last year and the 30-year average at the corresponding period.

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



Disasters

According to the National Committee for Disaster Management (NCDM) report on 3 November 2011, floods since mid-August have:

- Killed at least 250 people
- Affected about 354,217 families of which 51,950 displaced
- Affected 417,314 hectares and damaged 284,295 hectares of rice paddies
- Affected 925 km of national and provincial roads and 4,469 km of rural roads
- Affected 270,371 houses, 491 pagodas, 115 health care facilities and 1,360 schools

18 provinces (of 24 provinces in Cambodia) have been affected (Map 2). The worst affected areas are Kandal (72,047 affected and 4 dead), Kampong Thom (54,414 affected and 41 dead), Prey Veng (40,615 households affected and 52 dead), and Kampong Cham (33,436 affected and 47 dead). Map 3 below shows the affected households by province.

Map 2: Flood extent in September/October 2011

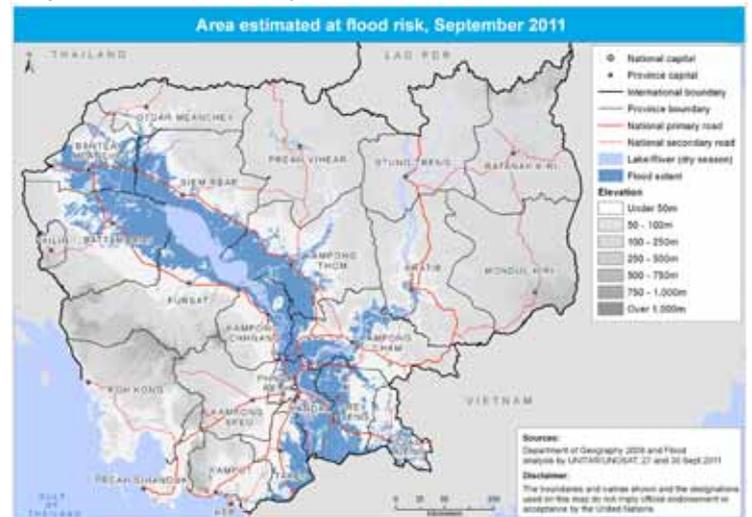
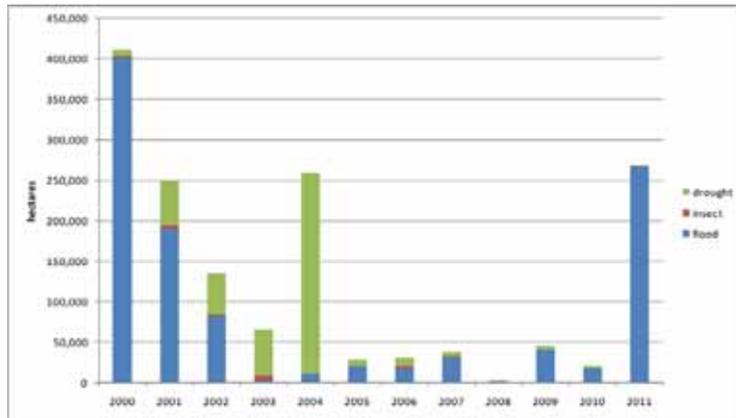


Figure 5: Destroyed area of wet season rice

Source: Ministry of Agriculture, Forestry and Fisheries

The heavy flooding in Cambodia in September/October significantly affected the wet season rice cultivation. Table 2 below lists the five provinces where the wet season rice cultivation was most affected by the floods. In Kampong Thom over 30% of the total rice cultivated area was destroyed by the floods.

After the floods, rice was replanted in some areas that were destroyed by the floods. In Kampong Thom, 7.4% of the total destroyed area was replanted. In Prey Veng and Kratie, rice was replanted on 66.8% and 50.8% of destroyed areas, respectively. In Pursat and Kandal, no rice was reported to be replanted in destroyed areas.

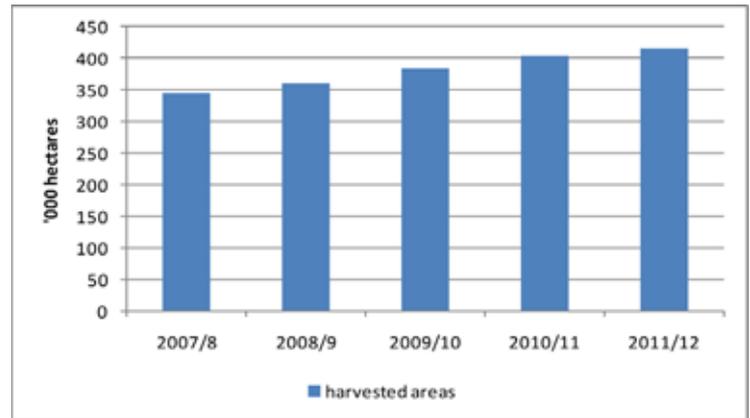
After taking into account the replanting of rice, wet season rice cultivation was most significantly affected in Kampong Thom, Pursat and Kandal. In Kampong Thom 29.1% of all cultivated wet season rice was destroyed and not replanted.

Table 2: Destroyed and replanted area, by province

	Destroyed/ cultivated (%)	Replanted/ destroyed (%)	(Destroyed- Replanted)/ cultivated (%)
Kampong Thom	31.4%	7.4%	29.1%
Pursat	17.3%	0.0%	17.3%
Prey Veng	17.3%	66.8%	5.7%
Kratie	16.8%	50.8%	8.3%
Kandal	14.1%	0.0%	14.1%
Others	6.7%	21.4%	5.2%
Total	10.7%	24.5%	8.1%

Source: Ministry of Agriculture, Forestry and Fisheries

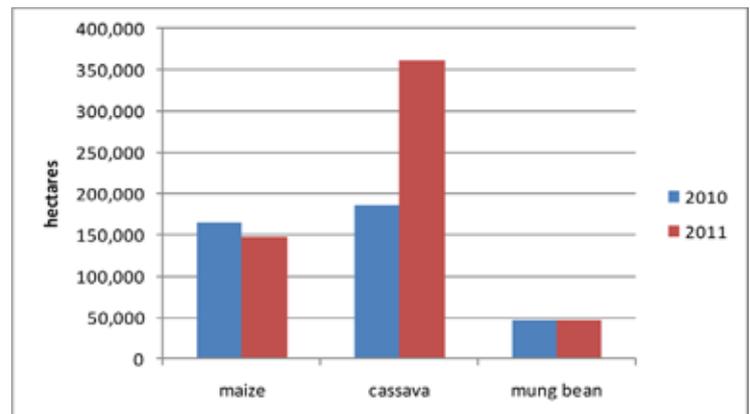
For dry season rice, the estimated harvested area in the 2011/12 is 415,000 hectares, increasing 2.5% from 2010/11, according to MAFF (Figure 6).

Figure 6: Dry season rice

Source: Ministry of Agriculture, Forestry and Fisheries

Subsidiary and industrial crop cultivation

Besides rice, some of the key industrial and subsidiary crops are maize, cassava and mung bean. Figure 7 below compares the harvested area of three key industrial crops in wet season 2011 with wet season 2010. While the cultivation of mung beans did not change much (decreased by 1.3% year-on-year), the cultivation of maize and cassava saw significant changes. Maize cultivation decreased by 10.7% compared to last year, while cassava cultivation nearly doubled (95% increase).

Figure 7: Harvested area of key industrial crops, wet season

Source: Ministry of Agriculture, Forestry and Fisheries

The production figures of the same key industrial crops confirm this trend. Wet season cassava production, over 8 million metric tonnes, increased by over 100% compared to the 2010 wet season (Table 3). Maize production decreased by 3.6% and mung bean production was stable, slightly decreasing by 0.4%.

Table 3: Production of key industrial crops, metric tonnes

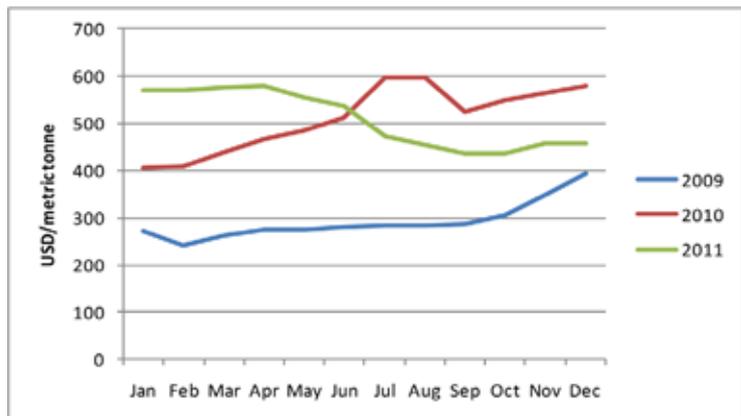
	Maize (mt)	Cassava (mt)	Mung bean (mt)
2010	672,124	3,980,964	49,667
2011	647,894	8,024,321	49,452
% change	-3.6%	101.6%	-0.4%

Source: Ministry of Agriculture, Forestry and Fisheries

The increased cultivation and production of cassava stems from the high price of Thai cassava starch, which increases demand – and hence price – for local cassava. Thai cassava starch export prices in the first quarter of 2011 were nearly 40% higher than in 2010 Q1 (Figure 8). This corresponds to the high cultivation of cassava in

2011.

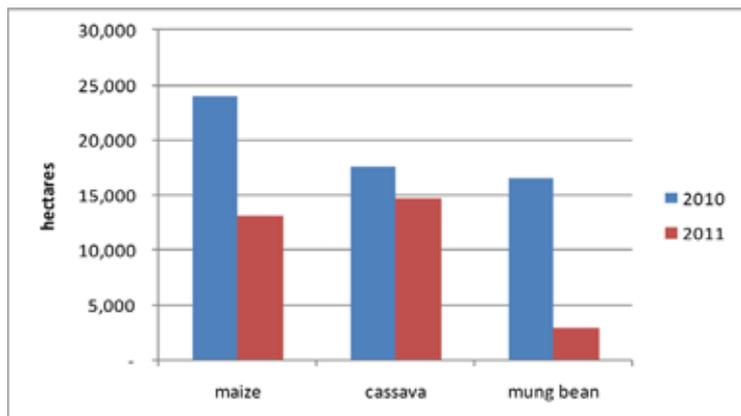
Figure 8: Thai Cassava starch export prices (FOB Bangkok)



Source: Thai Tapioca Starch Association

However, since then the price of Thai cassava starch export has dropped. In December 2011, prices were 20.9% lower than in December 2010. The decrease in the Thai cassava starch export price explains the decrease in the cassava planted area in the 2011/12 dry season (Figure 9).

Figure 9: Planted area of key industrial crops, dry season



Source: Ministry of Agriculture, Forestry and Fisheries

FOOD PRICES

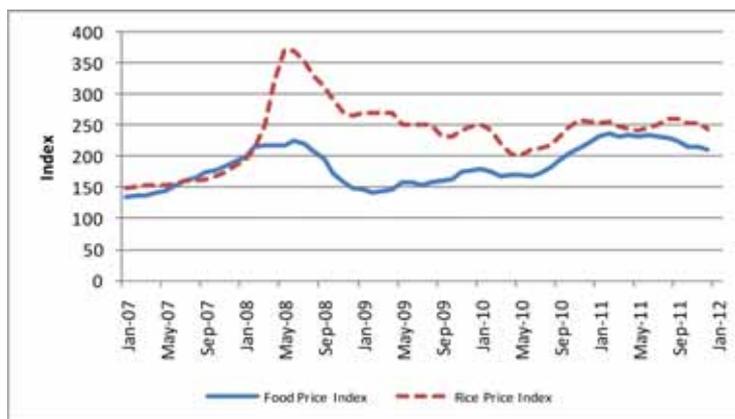
International and regional food and rice prices

The FAO Food Price Index³, measuring the international price level of a basket of key food commodities, averaged 211 points in December 2011, decreasing by 2.4% month-on-month and 5.4% year-on-year. The index in December was 11.2% below its annual peak in February (Figure 10).

International rice prices also decreased by 3.9% on a monthly basis in December 2011 as the FAO Rice Price Index averaged 244 points. The index was 4.7% lower than in December 2010. Upward price pressure from reported large flood-related losses in Thailand, the leading rice exporter, and the implementation in October of Thailand's rice pledging policy has been dampened by successful harvests in Bangladesh, China, India and Vietnam. Also, India's relaxation of export restrictions on regular rice contributed to increased supply. With India's return to the international rice marketplace, the index again includes Indian quotations, which contributed to the decrease in 2011 Q4.

3 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.

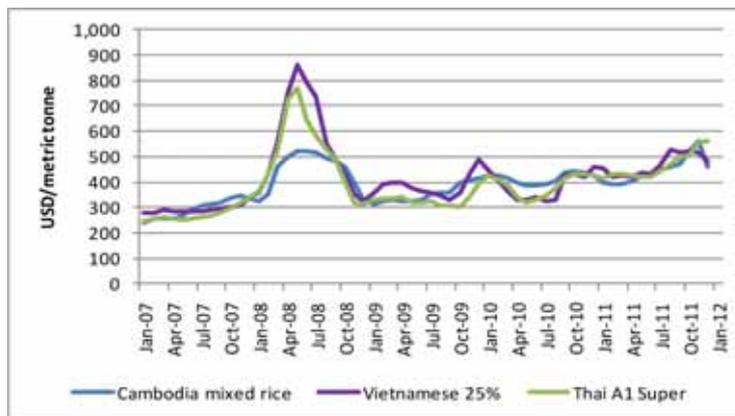
Figure 10: FAO Food and Rice Price Indices (100 = 2002-04)



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

In December 2011, the f.o.b. prices⁴ of Thai A1 Super white rice (100% broken) and Vietnamese white rice (25% broken), two benchmark prices for Asia, were 560 USD/mt and 480 USD/mt, respectively (Figure 11).

Figure 11: Wholesale price of Thai, Vietnamese and Cambodian white rice



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

The Thai white rice price increased (for the seventh consecutive month) by 1.3% month-on-month and by 32.4% year-on-year. The increase in Thai rice export prices slowed after the sharp increase in November 2011.

The Thai rice pledging policy, reinstated on 7 October 2011 with a budget of 435 billion Thai Baht (USD 14 billion), allows rice producers to pledge unlimited volumes of 2011/2012 main crop paddy under the programme⁵. It is to run between October 2011 and February 2012 and is expected to be extended to cover 2011/2012 secondary paddy crops harvested in March 2012.

The Vietnamese 25% broken white rice price increased sharply in the previous quarter (Q3) due to spillover effects from the new Thai policy, but since has decreased. Prices decreased by 1.7% and 6.8% month-on-month in November and December, respectively. The decline in prices in November and December was due to the main wet season harvest increasing domestic supply.

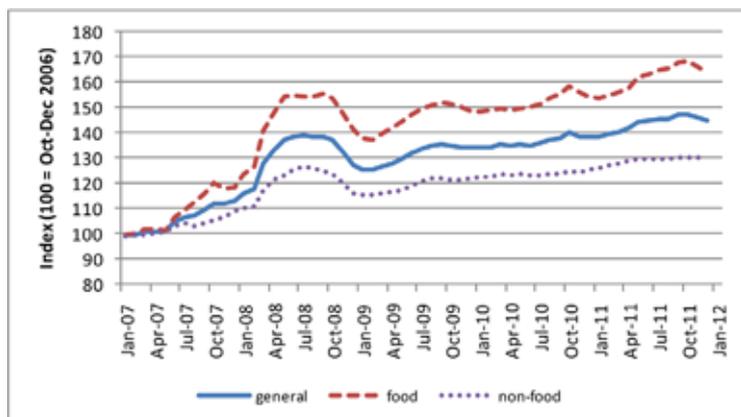
4 Free on board (f.o.b.) price includes all charges up to the placing of goods on board a ship at the port of departure specified by the buyer.
5 The Thai government will guarantee 13,800 – 15,000 Thai Baht (USD 446 – 484) per tonne of white rice, 15,000 Thai Baht (USD 484) per tonne of short-grain glutinous rice, 16,000 Thai Baht (USD 517) per tonne of long-grain glutinous or Pathum Thani rice, 18,000 Thai Baht (USD 581) per tonne of provincial fragrant rice (FAO Food Outlook, November 2011).

Local consumer price index and food price index⁶

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 expenditure⁷. In December 2011, the general CPI decreased, for the second consecutive month, by 0.9% month-on-month. The inflation rate, as measured by the year-on-year increase in the consumer price index, was 4.9%, the lowest since March 2011.

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 December, food prices decreased by 1.4% month-on-month but increased by 6.2% year-on-year (Figure 12). The price of meats and fresh fish decreased by 2.1% and 5.4% month-on-month, respectively, bringing down overall food prices.

Figure 12: Relative change in general consumer prices, food prices and non-food prices (base = Oct-Dec 2006)



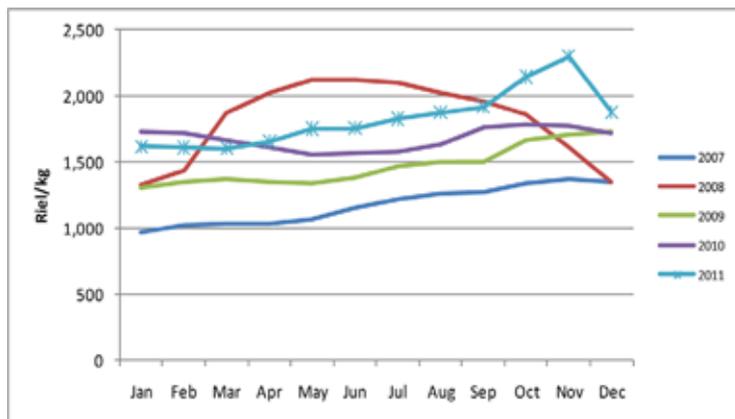
Source: National Institute of Statistics

Local wholesale and retail food commodity prices

Price reports from the Agricultural Marketing Office of the Ministry of Agriculture, Forestry and Fisheries show that in 2011 Q4 the wholesale price of rice was highly volatile. Mixed rice prices in December 2011 dropped after rapid increases October and November.

In October and November 2011, mixed rice prices increased by 11.6% and 7.3%, respectively, on a month-on-month basis (Figure 13). This sharp increase was due to the impact of the floods and seasonality. Rice prices are typically at their annual high immediately before the main wet season harvest in November. In 2011 the price increase during the lean season was amplified by the large floods in September/October, causing demand for rice to increase. With the start of the main wet season harvest, prices decreased by 18.2% on a month-on-month basis in December.

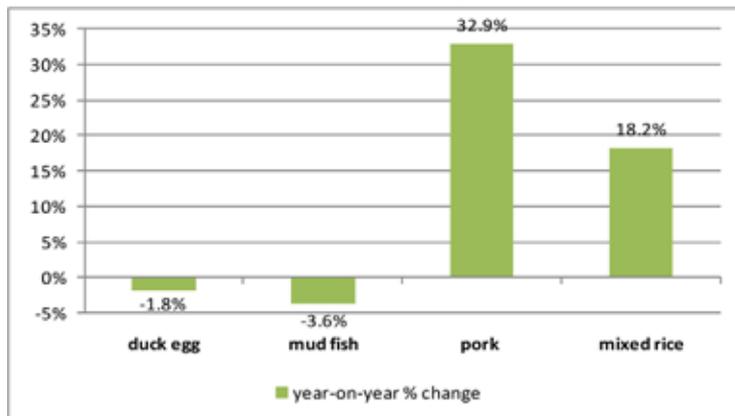
Figure 13: Wholesale price of mixed rice⁸



Source: Cambodia Agricultural Market Information Service, MAFF

Figure 14 below shows the year-on-year changes in the retail prices of key food commodities. Compared to December 2010, the retail price of duck eggs and mud fish decreased by 1.8% and 3.6%, respectively. However, the retail price of pork and mixed rice increased significantly, by 32.9% and 18.2%, respectively. The increases in pork and rice prices are in line with the CPI report that shows that meat and rice prices are driving the food price index.

Figure 14: Annual change (%) in retail prices of key food commodities (from December 2010 to December 2011)



Source: Cambodia Agricultural Market Information Service, MAFF

Price Monitoring and Forecasting

FAO’s price monitoring tool compares recent actual wholesale prices from AMO, MAFF with “normal” price levels. The normal price level takes into account historical price levels and adjusts for inflation and seasonal factors. A discrepancy between current actual prices and “normal” prices indicates that current prices are higher/lower than what would be expected based on historical price levels, inflation, and seasonal factors.

From June to November 2011, rice prices were above normal levels. From June to September, prices were 5% to 10% above expected normal prices. However, in October and November prices were 16.8% and 23.8% above expected normal prices, respectively⁹. The high discrepancy between the actual price and expected normal price in October and November confirm that prices experienced a sharp increase due to the effect of the floods.

The FAO price monitoring tool also projects prices based on the current price, current inflation rate and seasonal factors. The high

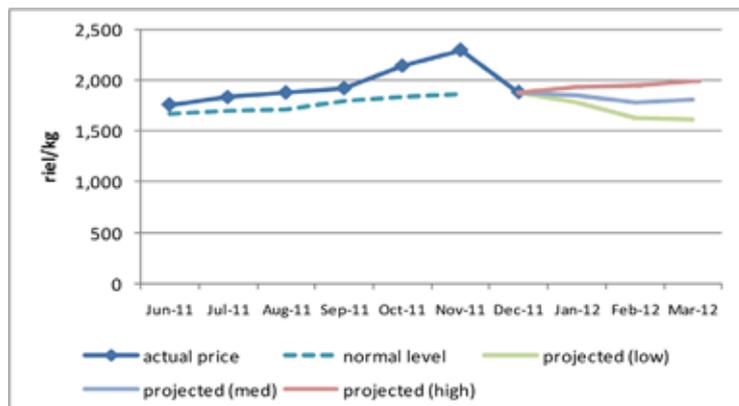
6 The CPI is collected and reported by the National Institute of Statistics (NIS).
7 Relative item expenditure weights are derived from the 2004 Cambodia Socio-Economic Survey and adjusted to October-December 2006 price levels.

9 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.
10 2008 prices are excluded from the FAO price monitoring tool analysis as the food price crisis in mid-2008 distorts the seasonal factors.

and low bands are set so that actual prices will fall within the range 80% of the time.

Prices for the following quarter (January, February and March 2012) were projected by the price monitoring tool using the December 2011 price, current inflation rate, and seasonal factors. Rice prices are expected to continue decreasing in January and February 2012, due to the increased supply from the main wet season harvest. The price trend is expected to change in March, when rice prices will start increasing again (Figure 15).

Figure 15: Comparison of recent wholesale prices with normal and projected prices using FAO price monitoring tool



Source: AMO, WFP, FAO

Food Purchasing Power of Vulnerable Households

The daily wages of unskilled workers engaged in rice and non-rice farming and construction work are monitored by Provincial Department of Agriculture staff on a monthly basis since September 2011 in six provinces¹⁰.

In the current quarter, unskilled wage rates saw significant fluctuations. In November 2011, the unskilled wage rate increased by 7.6% on a month-on-month basis as the demand for agricultural labour increased due higher labour demand at the beginning of the main wet season rice harvest. However, in December 2011, the unskilled wage rate decreased by 10.5% month-on-month. The demand for agricultural labour decreased as the peak of the main wet season harvest was over. Additionally, the supply for agricultural labour increased as smallholder farmers completed the harvest on their plot and started looking for daily labour opportunities.

Terms of trade (ToT) is used to assess household food purchasing power using the ratio of the daily wage rates of unskilled laborers and the retail price of lowest quality rice in the market. This gives an indication of the amount of rice that an unskilled wage labourer can purchase with a daily wage.

The ToT for unskilled labour and low quality rice fluctuated in 2011 Q4, primarily due to the fluctuations in unskilled wage rates. The ToT increased by 6% on a month-on-month basis in November 2011, but decreased by 6.2% in December (Table 4). The decrease in rice prices from November to December was outweighed by the decreased in unskilled wage rates.

Table 4: Terms of trade of unskilled labour and low quality rice

	Sep 2011	Oct 2011	Nov 2011	Dec 2011
Unskilled wage (riels/day)	14,208.3	14,590.9	15,695.7	14,041.7
Mixed rice (riels/kg)	2,041.5	2,161.8	2,193.8	2,093.3
Terms of Trade (kg/day)	6.96	6.75	7.15	6.71

Source: Cambodia Agricultural Market Information Service, MAFF

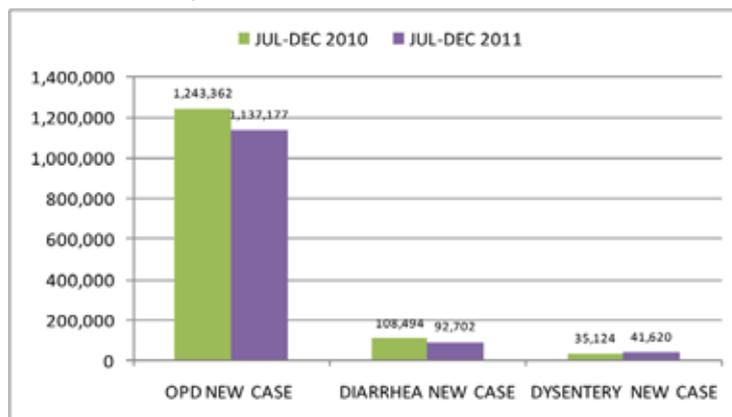
HEALTH AND NUTRITION

Diarrhea and dysentery cases

Diarrhea and dysentery can cause malnutrition through the loss of nutrients and a lack of appetite. MoH CamEWARN has identified increased acute diarrhea cases in Banteay Meanchey, Kampong Chhnang and Kampong Thom provinces during the week of 23 to 29 November. WHO has been informed by MoH that the Rapid Response teams have been investigating these outbreaks.

Figure 16 below shows that the number of new cases has declined by 9% and diarrhea cases decreased by 15%, from July–December 2010 to July–December 2011. However, dysentery cases increased by 19% from the second half of 2010 to the second half of 2011.

Figure 16: New outpatient cases of children 0-5 in hospital and health center July - December

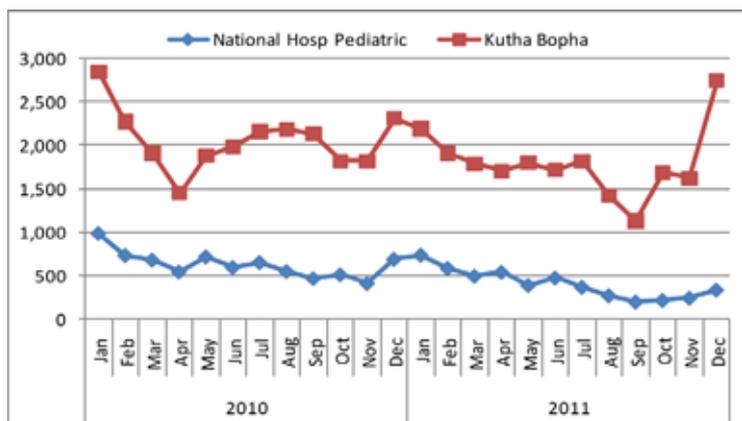


Source: Health Information System, Ministry of Health

Two key hospitals show an upward trend in diarrhea cases from September to December. The upward trend at the end of the year is normal and can be attributed to seasonal fluctuation in the incidence of diarrhea (Figure 17).

11 Battambang, Kampong Cham, Kampong Thom, Prey Veng, Pursat and Siem Reap

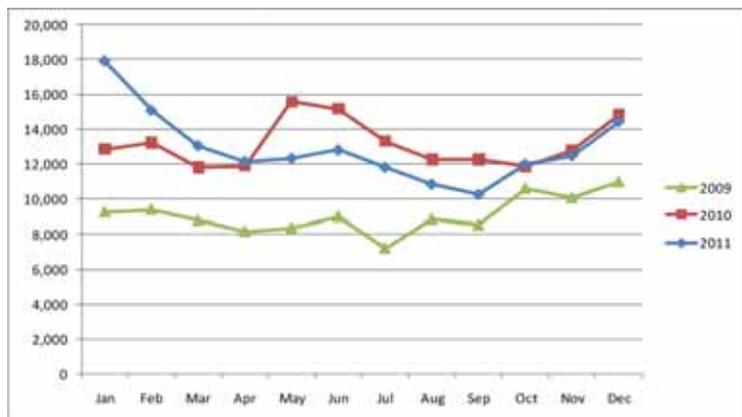
Figure 17: New outpatient diarrhea cases in children 0-5 years



Source: Health Information System, Ministry of Health

Diarrhea cases data from health centers also show an upward trend from September to December, and levels in 2011 are similar to that in 2010 (Figure 18).

Figure 18: Outpatient new cases of diarrhea in children 0-5 years at health centers by month, 2009-2011 HIS



Source: Health Information System, Ministry of Health

Food security trend analysis

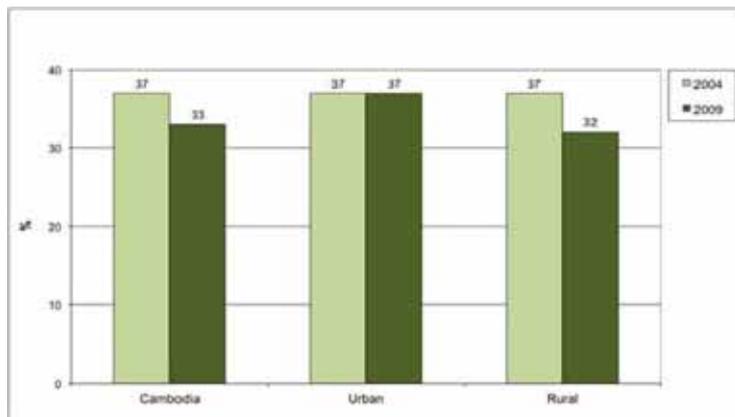
The National Institute of Statistics (NIS) conducted a trend analysis of food consumption data using from the 2004 and 2009 Cambodia Socioeconomic Survey (CSES). Using the indirect measure of household expenditure on food, the proportion of the population that is undernourished¹¹ fell from 37% in 2004 to 33% in 2009 (Figure 19).

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

¹² 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.

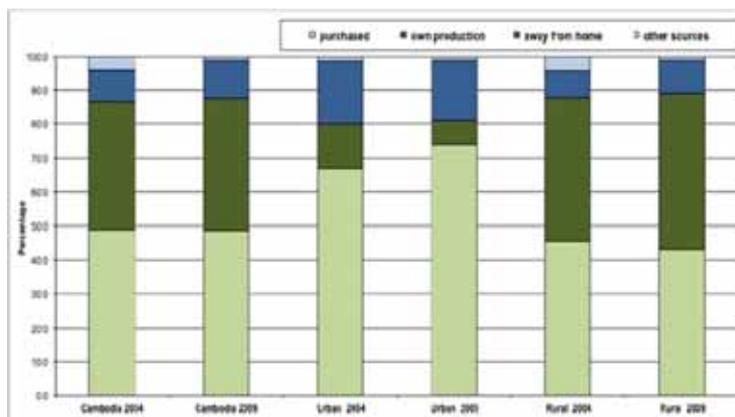
Figure 19: Percentage of Undernourishment, National, Rural, Urban



Source: National Institute of Statistics

In urban areas, the main source of food was market purchases, composing 75% of consumed food (Figure 20). 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 20: Share of Dietary Energy Consumption by Food Sources



Source: National Institute of Statistics