

# CAMBODIA FOOD SECURITY AND NUTRITION QUARTERLY BULLETIN

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## HIGHLIGHTS

- Heavy rainfall in September and October caused flash floods in 8 provinces, resulting in 27 deaths and 4,057 displaced households.
- From October to December 2012, the average rainfall level was lower than the historical average and the same period in 2011.
- Wet season rice production in 2012 was 6.85% higher than in 2011; Cultivated area of dry season rice in this quarter was above 100% of the planned figure; On a year-on-year basis, production of maize during the wet season increased by 19%, cassava decreased by 10% and mung bean decreased by 13%.
- Wholesale rice prices decreased by 4.6% month-on-month in December. The price is expected to decrease in January due to the increase in the supply of rice from the main wet season harvest.
- Children born to mothers in the highest equity groups are slightly less likely to ever breastfeed than children born to mothers in the lowest equity groups. Early initiation of breastfeeding within the first hour of birth and exclusive breastfeeding from birth to 6 months of age improved dramatically between 2000 and 2005.

## Environmental Conditions and Disasters

Heavy rainfall in September and October caused flash floods in 8 provinces, resulting in 27 deaths and 4,057 displaced households. In addition, 14,322 households, 12,274 houses and 223 kilometers of rural roads were affected. Nevertheless, from October to December 2012, the level of rainfall was comparatively lower than in 2011 and the historical average during the same period last year. Decreased rainfall contributed to lower river water levels in the Mekong and Tonle Sap Rivers.

## Food Production

Wet season rice production in 2012 was 6.85% higher than in 2011. Dry season rice cultivated areas were higher than the planned areas in 2012. Production of maize during the wet season increased by 19%, cassava decreased by 10% and mung bean decreased by 13%.

## Food Prices

The overall inflation rate was 2.4% in December. Food prices decreased by 0.3% month-on-month and increased 3.3% year-

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on-year. Gasoline prices decreased 0.9% month-on-month and increased by 3.8% year-on-year. Wholesale price of mixed rice in the fourth quarter of 2012 was lower than that in the previous quarter. In December the price decreased by 4.6% on a month-on-month basis. Rice prices are expected to decrease further in January 2013 due to the main wet season harvest.

## Health and Nutrition

Results of the Cambodia Equity Analysis show that while nearly all children are breastfed, it appears that children born to mothers in the highest equity groups are slightly less likely to ever breastfeed, perhaps because they are using formula. Early initiation of breastfeeding within the first hour of birth and exclusive breastfeeding from birth to 6 months of age improved dramatically throughout the decade. Continued breastfeeding at one year decreased by 5% and most of the decrease observed occurred among children living in urban areas, those living in wealthy households, and girls.

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 the United Nations World Food Programme, UNICEF, the Food and Agriculture Organization of the United Nations, and the World Health Organization.

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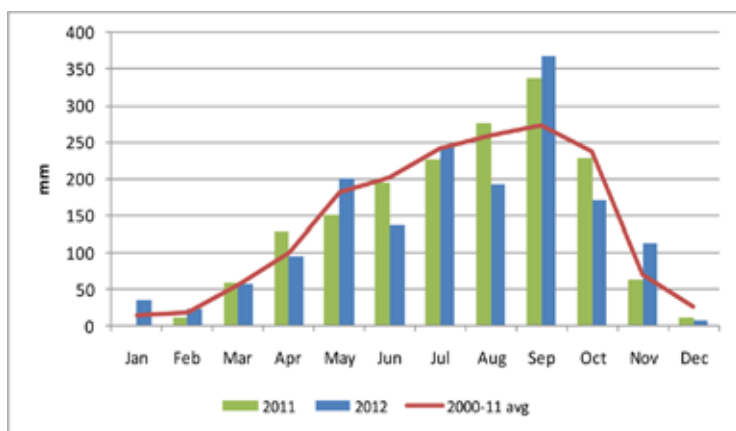
This bulletin presents primary and secondary analysis of government administrative data and national sample surveys.

**ENVIRONMENTAL CONDITIONS AND DISASTERS**

**Rainfall**

Figure 1 shows the rainfall level by month in 2012 compared to 2011 and the historical average (2000-2011). The highest rainfall in Cambodia was recorded in September 2012. In November 2012, the rainfall level was higher than the same month in 2011 due to the effect from imbalanced atmospheric pressure and the late wet season period until the end of November. However, the average rainfall level in quarter four (October to December 2012), was lower than the historical average (2000-2011) and the same period in 2011. The average rainfall level in quarter four was 96.6 mm, 3.5% less than in 2011. Table 1 shows rainfall levels in four selected provinces<sup>1</sup> representing the main agro-ecological zones.

**Figure 1:** Rainfall levels in Cambodia



Source: Ministry of Water Resources and Meteorology

**Table 1:** Rainfall in Cambodia and four selected provinces

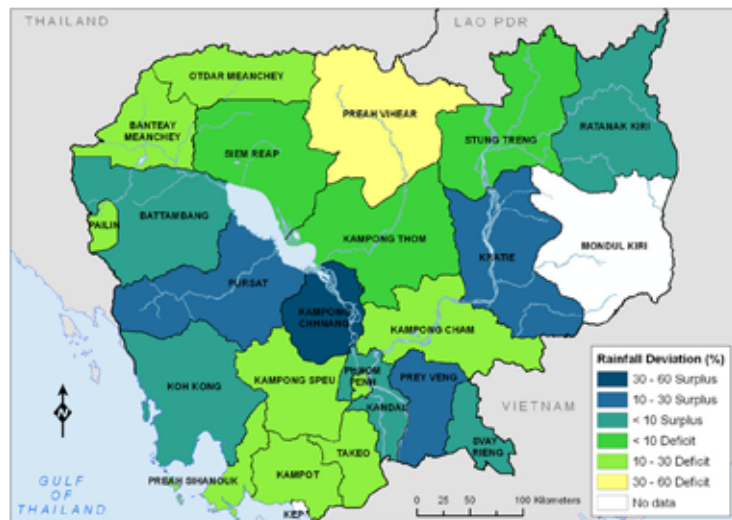
	Month	2011 (mm)	2012 (mm)	2000-2011 Average (mm)
Cambodia	Oct	227.3	170.7	237.7
	Nov	62.2	112.1	70.8
	Dec	10.7	6.9	25.6
	Average	100.1	96.6	111.4
Kampot	Oct	144.2	202.6	262.1
	Nov	157.4	98.4	107.1
	Dec	30.6	10.6	34.9
	Average	110.7	103.9	134.7
Prey Veng	Oct	116.7	263.6	271.3
	Nov	52.6	238.0	89.7
	Dec	5.4	8.6	52.0
	Average	58.2	170.1	137.7
Banteay Meanchey	Oct	292.4	137.8	190.2
	Nov	4.5	48.5	24.0
	Dec	0.0	0.0	7.6
	Average	99.0	62.1	74.0
Kratie	Oct	239.0	139.9	182.5
	Nov	26.4	144.2	41.5
	Dec	0.0	0.0	21.3
	Average	88.5	94.7	81.8

Source: Ministry of Water Resources and Meteorology

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

Map 1 shows the rainfall surplus and deficit amount in quarter four compared to the historical average. Nine out of 24 provinces across Cambodia had a rainfall surplus in this quarter.

**Map 1:** Rainfall surplus and deficit, October-December 2012



Source: Ministry of Water Resources and Meteorology

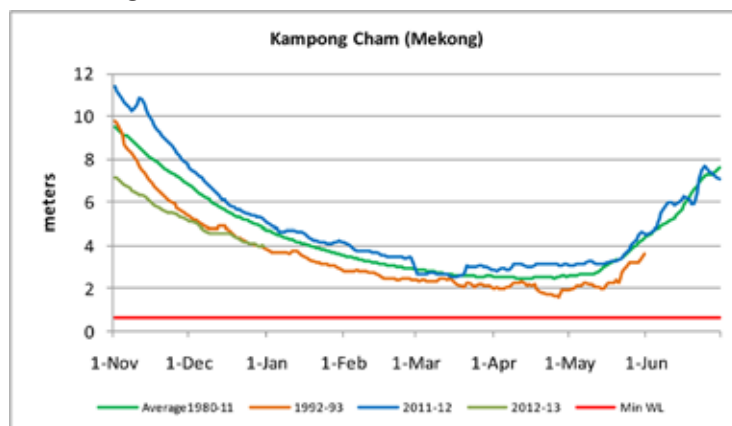
**River Water Levels**

Overall, water levels of the Mekong and Tonle Sap Rivers in 2012 were lower than in 2011 and the historical average (1980-2011). The maximum Mekong River water level at Kampong Cham monitoring station was 13.5 meters, 2.56 meters lower than in 2011 and 0.22 meters lower than the historical average. The maximum Tonle Sap River water level at Prek Kdam monitoring station was 7.76 meters, 2.43 meters lower than in 2011 and 0.72 meters lower than the historical average.

In quarter four, the water level of both the Mekong and Tonle Sap Rivers decreased due to the start of the dry season. Figure 2 and 3 present the river water levels in the dry season in two monitoring stations (Kampong Cham on the Mekong and Prek Kdam on the Tonle Sap).

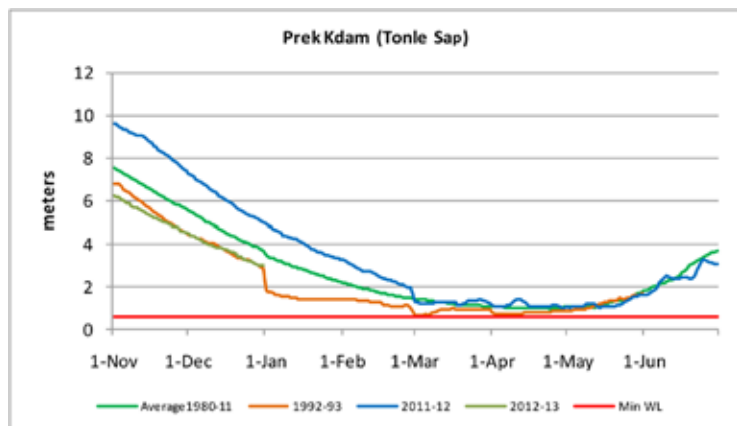
The Mekong River water level in Kampong Cham monitoring station was 3.97 meters on 31 December 2012, 1.17 meters lower than the water level in 2011 and 0.79 meters lower than the historical average during the same period. The Tonle Sap river water level at Prek Kdam monitoring station was 2.95 meters on 31 December 2012, 2.03 meters lower than the water level in 2011 and 0.73 meters lower than the historical average in the same period.

**Figure 2:** Water level at the Kampong Cham monitoring station on the Mekong River



Source: Ministry of Water Resources and Meteorology

**Figure 3:** Water level at the Prek Kdam monitoring station on the Tonle Sap River



Source: Ministry of Water Resources and Meteorology

**Disasters**

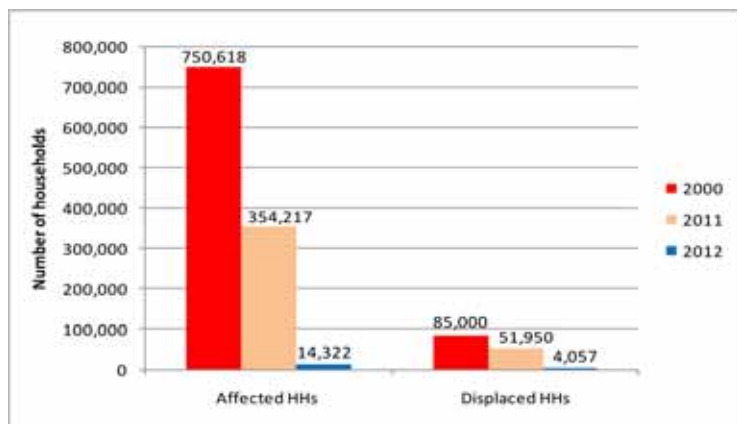
Table 2 shows the impact of flash floods by province in September and October 2012. Flash floods affected 14,322 households, of which 4,057 were displaced. There were 27 deaths. Floods also affected infrastructure, including 12,274 houses, 122 schools, 7 pagodas, 3 health centers, and 223 kilometers of rural roads. Banteay Meanchey was the most affected province. Figure 4 and 5 present the total number of households and houses affected by floods in 2012 compared to the last two years with major floods (2000 and 2011).

**Table 2:** Flood impact by province, September-October 2012

Province	Population			Infrastructure						
	Affected households	Displaced households	Deaths	Affected houses	Destroyed houses	Affected Schools	Affected Pagodas	Affected Health centers	Affected rural roads (m)	Destroyed rural roads (m)
Preah Vihear	317	250		265						
Kampong Thom	140	140	6	140		11				
Banteay Meanchey	13,710	3,667	19	11,714	2	108	7	3	160,696	2,711
Siem Reap			1			3				
Takeo	10			10						
Preah Sihanouk	76			76						
Pursat			1						63,096	
Pailin	69			69						
<b>Total</b>	<b>14,322</b>	<b>4,057</b>	<b>27</b>	<b>12,274</b>	<b>2</b>	<b>122</b>	<b>7</b>	<b>3</b>	<b>223,792</b>	<b>2,711</b>

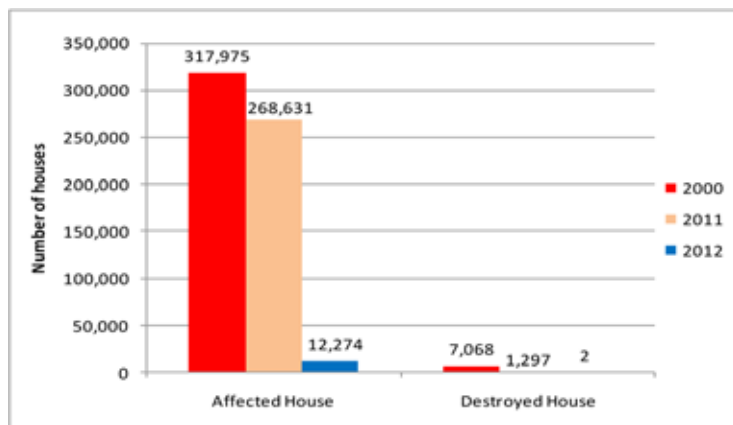
Source: National Committee for Disaster Management

**Figure 4:** Number of households affected by flood



Source: National Committee for Disaster Management

**Figure 5:** Number of houses affected by flood



Source: National Committee for Disaster Management

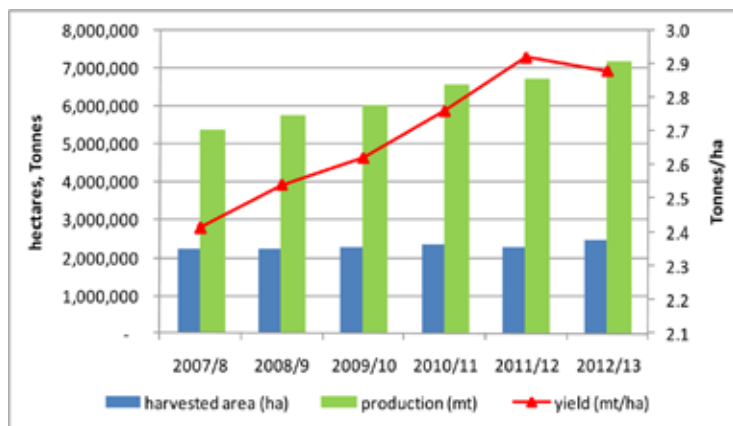
**FOOD PRODUCTION**

**Rice Cultivation**

The wet season rice cultivation was completed in October 2012. Wet season rice cultivated areas, harvested areas and production were higher than in 2011 due to the implementation of government policy, support and investment on agriculture, dissemination, mainstreaming, transfer and adaptation of agricultural technology among farmers and changing farmer behavior in relation to cultivation.

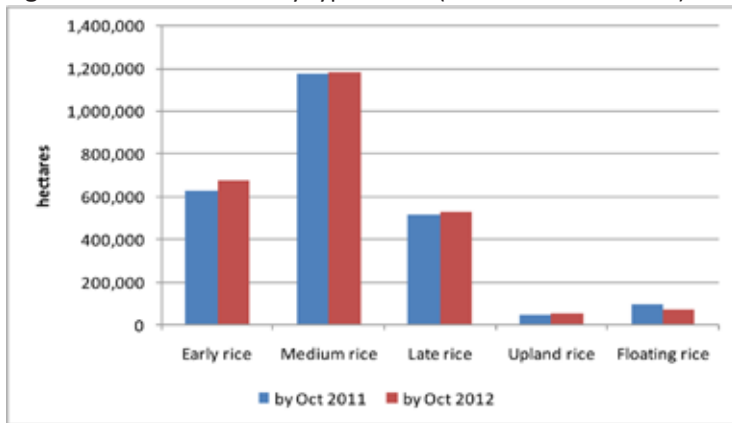
Figure 6 shows the harvested area, production and yield for wet season rice. Compared to 2011/12, the wet season rice cultivated area in 2012/13 increased by 0.67%, harvested area increased by 8.35% and total wet season rice production increased by 6.85%. The yield, however, decreased 1.38%.

**Figure 6:** Harvested area, production & yield for wet season rice



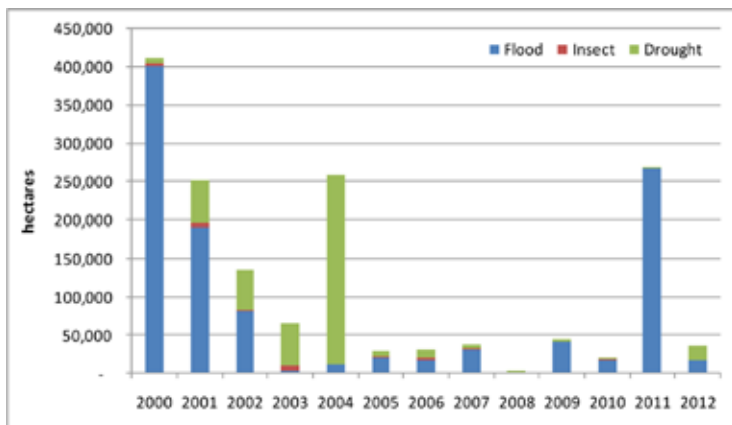
Source: Ministry of Agriculture, Forestry and Fisheries

Figure 7 presents the cultivated area by type of rice in October 2011 and 2012. The cultivated areas of early rice and upland rice increased 9.26% and 3.28%, respectively. The cultivated area of floating rice decreased 26% due to changing weather conditions and concerns about severe flooding. As a result, farmers increased their early rice planting rather than late or floating rice planting.

**Figure 7: Cultivated area by type of rice (October 2011 & 2012)**

Source: Ministry of Agriculture, Forestry and Fisheries

Drought and floods affected agricultural areas in several provinces in this quarter. According to the Ministry of Agriculture, Fisheries and Forestry, drought destroyed 39,196 ha (3,171 hectares of which were seedling) of wet season rice cultivated area, equivalent to 1.56% of total wet season rice cultivated areas in 2012 (Figure 8). Floods also destroyed 16,510 hectares of wet season rice cultivated areas, equivalent to 0.66% of total wet season rice cultivated areas in 2012.

**Figure 8: Rice cultivated areas affected & destroyed by disasters**

Source: Ministry of Agriculture, Forestry and Fisheries

Table 3 shows the total destroyed and replanted areas of wet season rice by province. Taking into account rice replanting, wet season rice cultivated areas were destroyed mainly in Monduliri, Banteay Meanchey, Battambang and Phnom Penh.

**Table 3: Destroyed and replanted area, by province**

Province	Destroyed/ cultivated (%)	Replanted/ destroyed (%)	(Destroyed- Replanted/ Cultivated (%)
Banteay Meanchey	6.6	6.8	6.1
Battambang	4.4	36.7	2.8
Kampong Speu	0.3	-	0.3
Monduliri	11.7	-	11.7
Phnom Penh	2.6	-	2.6
Prey Veng	0.9	100.0	-
Pursat	0.6	-	0.6
Siem Reap	0.2	19.2	0.2
Svay Rieng	0.3	60.0	0.1
Otdar Meanchey	1.1	60.0	0.5
Total	1.4	24.6	1.1

Source: Ministry of Agriculture, Forestry and Fisheries

Table 4 shows dry season rice cultivated area by province. The total dry season rice cultivated area in quarter four of 2012 was 367,428 hectares, or roughly 100% of the planned figure for 2012. Kampong Thom, Prey Veng and Svay Rieng cultivated more area than initially planned; other main rice producing provinces, such as Kampong Cham, Kampong Chhnang, Kandal, Kratie, Siem Reap and Takeo, were yet to achieve the planned cultivation figure for 2012.

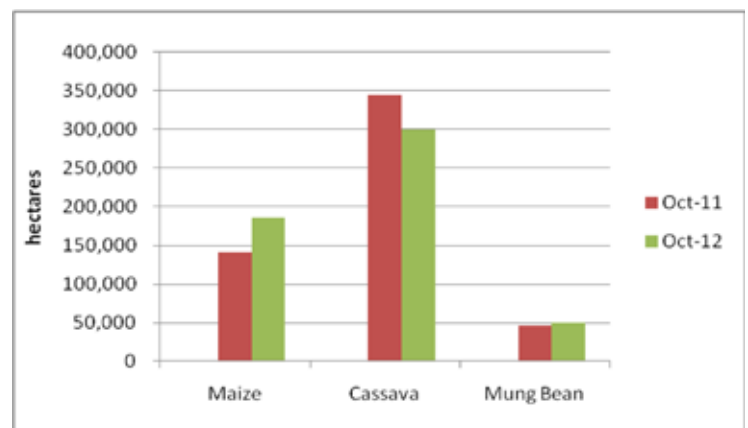
**Table 4: Dry season rice cultivated area (ha) by province, October-December 2012**

Province	Planned area (ha)	Cultivated area (ha)	% of planned
Kampong Cham	52,000	43,716	84.1
Kampong Chhnang	23,900	17,133	71.7
Kampong Thom	13,000	35,374	272.1
Kandal	61,000	39,895	65.4
Kratie	14,000	11,875	84.8
Prey Veng	75,000	78,027	104.0
Siem Reap	16,000	13,675	85.5
Svay Rieng	16,500	19,166	116.2
Takeo	72,000	62,700	87.1
Other provinces	23,141	45,867	198.2
Total	366,541	367,428	100.2

Source: Ministry of Agriculture, Forestry and Fisheries

### Subsidiary and Industrial Crop Cultivation

Figure 9 below compares the harvested area of three key industrial crops in the wet season in 2011 and 2012. On a year-on-year basis the harvested areas of maize increased by 31%, cassava decreased by 13%, and mung beans increased by 8%.

**Figure 9: Harvested area of key industrial crops, wet season**

Source: Ministry of Agriculture, Forestry and Fisheries

In quarter four the production figures for maize and cassava confirm the trend of harvested areas. On a year-on-year basis, the production of maize increased by 19% but the production of cassava and mung bean decreased by 10% and 13%, respectively (Table 5).

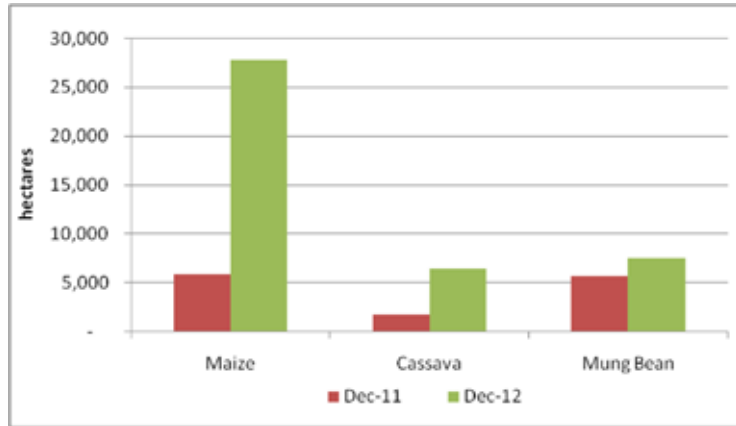
**Table 5: Production (mt) of key industrial crops**

	Maize (mt)	Cassava (mt)	Mung bean (mt)
2011	646,077	7,240,398	51,433
2012	770,860	6,491,106	44,864
% change	19.3%	-10.3%	-12.8%

Source: Ministry of Agriculture, Forestry and Fisheries

Figure 10 shows the cultivated area of three subsidiary and industrial crops (maize, mung bean and cassava) in the dry season. The cultivated area of maize in December 2012 was 27,750 hectares, 373% higher than in December 2011 due to increased maize prices, higher demand in neighboring countries and higher demand for animal feed. The cultivated area of cassava in December 2012 increased by 275% compared to the same period last year due primarily to the anticipated increase in the price of cassava in 2013. Cultivated area of mung bean increased by 34.9% on a year-on-year basis.

Figure 10: Planted area of key industrial crops, dry season



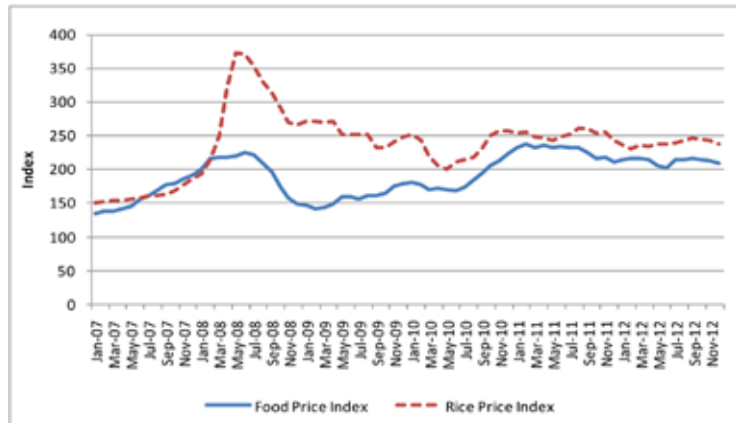
Source: Ministry of Agriculture, Forestry and Fisheries

**FOOD PRICES**

**International and Regional Food and Rice Prices**

The FAO Food Price Index<sup>2</sup>, measuring the international price level of a basket of key food commodities, averaged 209 points in December 2012, a decrease of 1.1% compared to last month (Figure 11). The decline was due to a decrease of cereal and oil prices. The International Rice Price Index, at 236 points, decreased by 2.5% on a month-on-month basis in December 2012.

Figure 11: FAO Food and Rice Price Indices (100 = 2002-04)



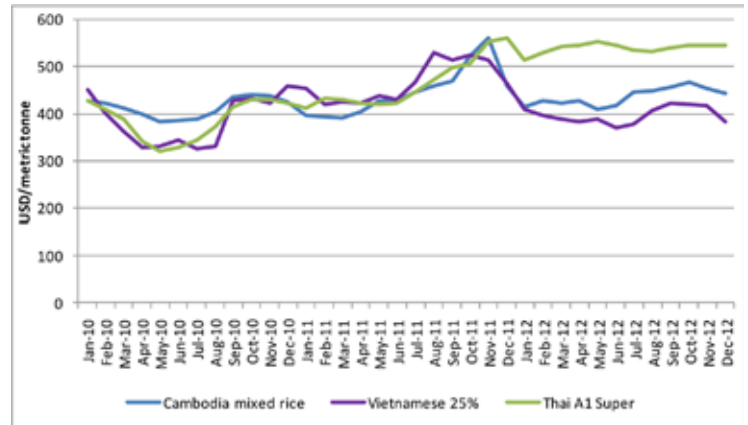
Source: FAO, <http://www.fao.org/worldfoodsituation/FoodPricesIndex/en/>

In December, the f.o.b. prices<sup>3</sup> of Thai A1 Super white rice (100% broken) and Vietnamese white rice (25% broken), two benchmark prices for Asia, were 546 USD/mt and 384 USD/mt, respectively (Figure 12).

In December, Thai Super A1 rice prices increased by 0.2% month-on-month and decreased 2.5% year-on-year. The Thai Rice Exporters Association stated that Thailand is facing greater competition from Vietnam and India, who are offering lower export prices for rice.

The price of Vietnamese white rice in this quarter decreased after increasing in the previous quarter. In December 2012, the price of Vietnamese rice decreased by 8% month-on-month and 17% year-on-year.

Figure 12: Wholesale price of Thai, Vietnamese and Cambodian white rice

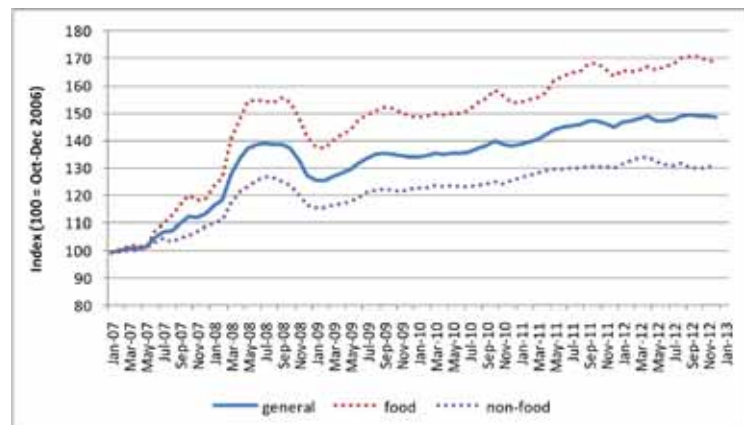


Source: FAO, <http://www.fao.org/es/esc/prices/PricesServlet.jsp?lang=en>

**Local Consumer Price Index and Food Price Index**

The general Consumer Price Index (CPI)<sup>4</sup> measures the cost of a consumption basket composed of 259 items. Each item is weighted based on their importance in an average household's expenditure<sup>5</sup>. In December 2012, the general CPI remained stable month-on-month. The inflation rate, as measured by the year-on-year increase in the CPI, was 2.5%. The Food Price Index (FPI) measures the cost of the food items in the general CPI consumption basket. Food items make up 43.2% of the total consumption basket. In December 2012, food prices decreased by 0.3% month-on-month but increased by 2.5% year-on-year (Figure 13). Gasoline prices in December 2012 decreased by 0.9% month-on-month, but were 3.8% above levels in the corresponding month last year.

Figure 13: Relative change in general consumer prices, food prices and non-food prices (base = Oct-Dec 2006)



Source: National Institute of Statistics

2 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.

3 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.

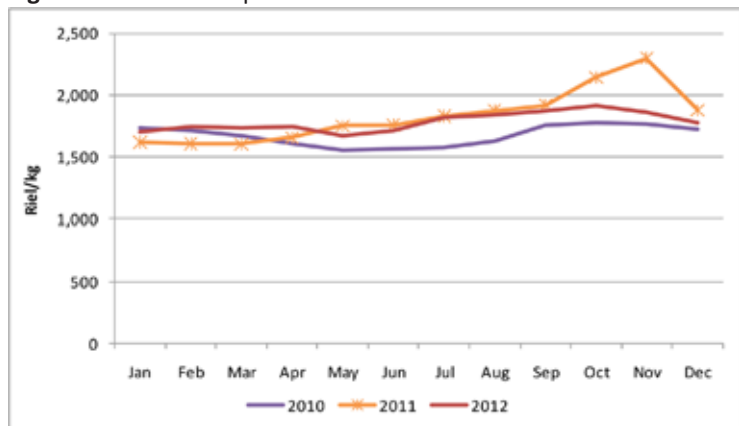
4 The CPI is collected and reported by the National Institute of Statistics (NIS).

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

### Local Wholesale Food Commodity Prices

Price reports from the Agricultural Marketing Office of the Ministry of Agriculture, Forestry and Fisheries (AMO MAFF) show that mixed rice<sup>6</sup> wholesale prices in the fourth quarter of 2012 were lower than in the previous quarter. In October 2012, prices increased by 2.2% on a month-on-month basis but in November and December, prices decreased by 2.7% and 4.6%, respectively, on a month-on-month basis (Figure 14). The downward pressure on rice prices this quarter was due to the start of the main wet season harvest, which will increase the supply of rice in local markets.

Figure 14: Wholesale price of mixed rice<sup>7</sup>

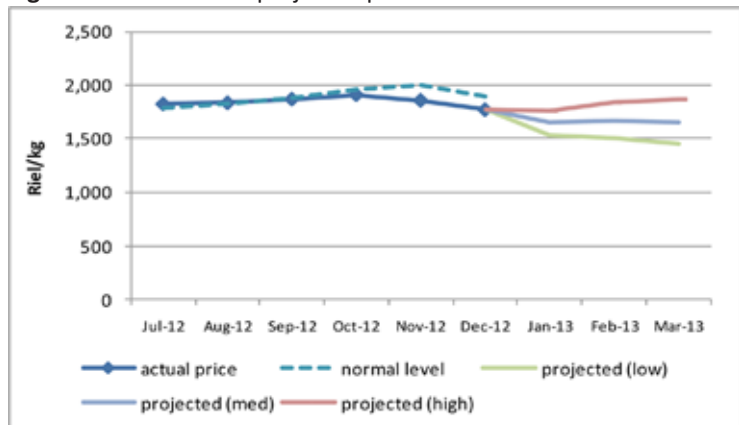


Source: Cambodia Agricultural Market Information Service, MAFF

### 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. In December 2012, the actual price of wholesale rice was 6.3% lower than the expected normal price, which indicates that price levels were below historically normal levels. Prices for the upcoming three months (January to March 2013) were projected by the price monitoring tool using the December 2012 price, current inflation rate, and seasonal factors. Rice prices are expected to decrease in January 2013. This is the usual trend in rice price fluctuation after the main wet season harvest. However, in February and March, rice prices are projected to slightly increase due to the increase in demand and depleting rice stocks (Figure 15).

Figure 15: Normal and projected prices of wholesale rice



Source: AMO, WFP, FAO

6 Mixed rice is considered a low-quality type of rice.

7 Wholesale rice prices are collected from urban markets or rice mills in Kampong Chhnang, Kampong Cham, Takeo, Siem Reap, Prey Veng, Phnom Penh, Kampot, Battambang, Banteay Meanchey.

### 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 provinces<sup>8</sup>. In this quarter the unskilled wage rate increased for three consecutive months (Table 6).

Terms of trade (ToT) is used to assess the food purchasing power of households that are dependent on wages from unskilled labour by using the ratio of the average daily wage rates of unskilled laborers and the average retail price of mixed rice in the market. This gives an indication of the amount of rice that an unskilled wage labourer can purchase with a daily wage.

In October, the ToT for unskilled labor and mixed rice increased by 4% month-on-month. In November, the ToT remained stable and significantly increased by 10.9% on a month-on month basis in December 2012. The increase in the ToT during this quarter was due to an upward trend in unskilled wage rates and a decrease in rice prices resulting in improving household purchasing power.

Table 6: Terms of trade of unskilled labour and mixed rice

	Sep-12	Oct-12	Nov-12	Dec-12
Unskilled wage (riel/day)	15,363	15,800	15,925	16,500
Mixed rice price (riel/kg)	2,011	1,999	2,008	1,875
Terms of Trade (kg rice/daily wage)	7.6	7.9	7.9	8.8

Source: Cambodia Agricultural Market Information Service, MAFF

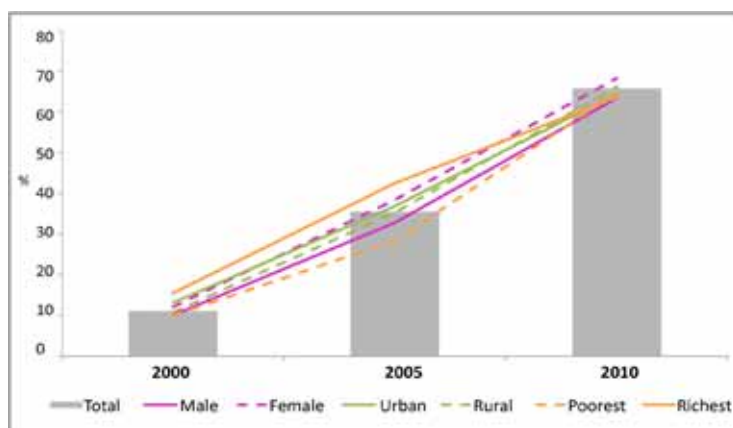
## HEALTH AND NUTRITION

The Cambodia Equity Analysis examined trends in key nutrition indicators in the CDHS 2000, 2005 and 2010. Findings related to breastfeeding are presented below.

### Early Initiation of Breastfeeding

Although in the past nearly all children receive breastfeeding, the majority of these children did not start breastfeeding quickly enough after birth. Figure 16 shows that early initiation of breastfeeding (within one hour of birth) has increased dramatically, from 11% in 2000 to 65% in 2010.

Figure 16: Early initiation of breastfeeding

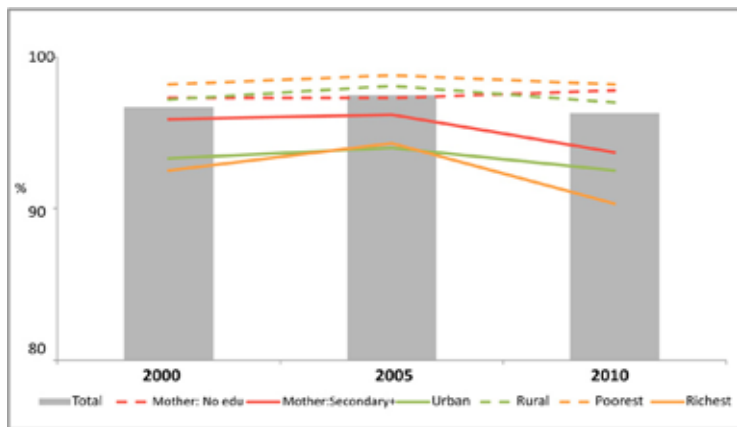


Source: Cambodia Demographic and Health Survey

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

The largest equity gap for children ever breastfed in 2010 was according to household wealth. Children born to mothers in the poorest households were 9% more likely to have ever been breastfed. Children born to women with secondary or higher education and to those living in urban areas were slightly less likely to have ever been breastfed. Girls were 8% more likely to have initiated breastfeeding within the first hour compared to boys.

**Figure 17:** Percentage of children ever breastfed



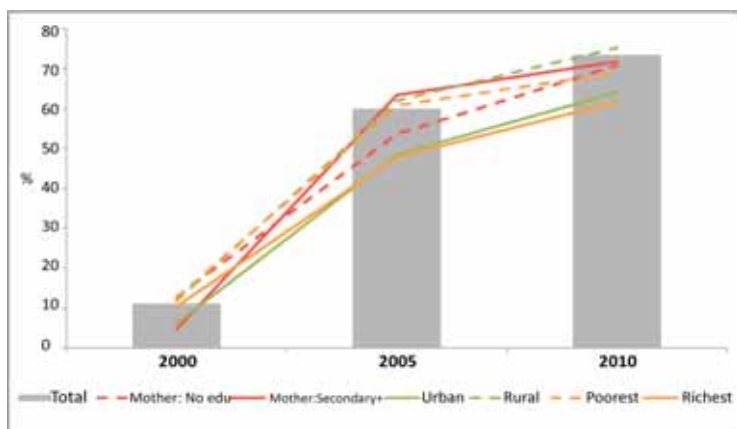
Source: Cambodia Demographic and Health Survey

### Exclusive Breastfeeding

The proportion of exclusively breastfed children aged 0–5 months improved significantly between 2000 and 2010, from 11% to 74%. Most of this improvement was realized between 2000 and 2005 and there has been a steady gain of 3% points per year since 2005.

The only significant equity gap for exclusive breastfeeding in 2010 was residence, with rural children being 1.2 times more likely to have been exclusively breastfed compared to urban children. In 2000, there were differences in exclusive breastfeeding by maternal education, but by 2005 the gap closed and there was no maternal education equity gap for exclusive breastfeeding in 2010. Although the wealth equity gap for exclusive breastfeeding was never significant, children living in the middle wealth quintiles have seen the most improvement between 2000 and 2010.

**Figure 18:** Exclusive breastfeeding (0-5 months)

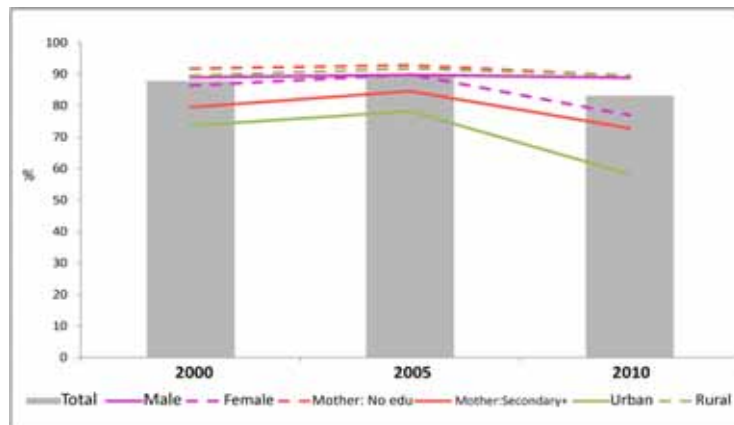


Source: Cambodia Demographic and Health Survey

### Continued Breastfeeding

Continued breastfeeding at one year (i.e. children aged 12–15 months) decreased significantly between 2000 and 2010, from 88% to 83%. In 2010, the largest equity gaps in continued breastfeeding were according to household wealth and residence: children living in rural areas, and those living in the poorest households, were 1.6 times more likely to be breastfeeding at one year. The maternal education and gender equity gaps for continued breastfeeding were also significant in 2010, such that children, whose mothers had no education, and boys, were 23% and 15%, respectively, more likely to be breastfeeding at one year.

**Figure 19:** Continued breastfeeding (1 year)



Source: Cambodia Demographic and Health Survey