Crop Situation Update

Joint Assessment Mission of 2013 Summer Crops and Outlook of 2013/14 Winter Crops

Ministry of Agricultural Development

Food and Agriculture Organization

World Food Programme

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Highlights

The 2013 summer crop (paddy, maize, millet, and buckwheat) output was estimated at 7.67 million metric tons (mt), an increase of 12.10 percent compared to last year and 11.90 percent compared to the five-year average or 'normal' level[1].

Out of the total summer crop production of 7.67 million mt, the production of paddy, maize, millet, and buckwheat was estimated at 5.04 million mt, 2.3 million mt, 0.30 million mt, and 0.010 million mt respectively. Compared to the normal level, the largest production gain was observed in maize (13.80 percent) followed by paddy (11.74 percent), buckwheat (7.22 percent), and millet (0.33 percent).

Adequate and timely rainfall coupled with better availability of fertilizers is considered the key reason for increased production in 2013. Average rainfall during July-September 2013 was the largest in the last five years and was recorded at 115 percent of the normal level[2].

A majority (96 percent) of the summer crop output comes from paddy and maize. The largest crop output was from the eastern region (2.16 million mt) followed by the central and western regions. Jhapa and Bhojpur are the largest paddy and maize producing districts with their respective production estimated at 365 thousand mt and 124 thousand mt.

Despite aggregate production increases, some districts (especially Dhanusa, Bhaktapur, Kavre, and Jumla) observed localized production drops in paddy. In Dhanusa, 19 Village Development Committees (VDCs) incurred a production loss of 56,000 mt due to a dry spell.

In Kavre and Bhaktapur 2,200 ha of paddy was infected by *Neck Blast* and *Bacterial Leaf Blight* as some hybrid varieties, ***DY-69, DY 28,*** and ***DY 18***, recommended for the Terai, could not adapt to the local agro-ecological conditions. In Bhaktapur alone, crop damage was estimated at NPR 97 million.

The value of cereal imports during the first four months (July-October) of the Nepali Fiscal Year 2070/71 stood at 4.7 billion NPR, a marginal drop compared to the same period last year. With an import value of 2.4 billion NPR, rice occupies the largest share (51 percent) in total cereal imports.

As estimated by the Food and Agriculture Organization (FAO) global cereal production increased by 8.4 percent and stood at 2,500 million metric tons (710.8 million mt of wheat, 1294.8 million mt of coarse grains, and 494.2 million mt of milled rice).

In India, according to the first advance estimate, the 2013 *Kharif* crop output was 129.32 million mt, marginally higher compared to last year. Production of paddy, however, has declined marginally.

[1] Normal acreage and production refers to the average area and production of the preceding five years, i.e. 2008 to 2012.
[2] Normal level of rainfall refers to the average rainfall of the preceding 30 years

Background and objectives

The Crop Situation Update is produced by the Ministry of Agricultural Development (MoAD), World Food Programme (WFP), and Food and Agriculture Organization (FAO). It is published twice a year and focuses on production and associated opportunities and challenges of summer and winter crops in Nepal. While periodic updates on crop performance and the food security situation are provided through the Nepal Food Security Bulletin (issued by MoAD and WFP on a trimester basis) the Crop Situation Update provides a comprehensive overview of the food supply situation by looking into production and trade of major summer and winter crops in Nepal.

This edition of the Crop Situation Update covers the 2013/14 (Nepali Fiscal Year 2070/71) summer crop production and the outlook of winter crops for the same period. In addition, it also looks at the trade of key cereals between the period of 2012 and 2013.

The Crop Situation Update is available in print as well as electronic format at: https://sites.google.com/site/nefoodsec/home/crop-situation-update

Methodology

The Crop Situation Update relies on primary as well as secondary sources of information. The preliminary estimates of summer crop production released by MoAD in December 2013 provided nationwide data on production of summer crops. In addition, it also provided information related to input supplies like fertilizer and seeds. Information collected regularly through *Nepal Khadya Suraksha Anugaman Pranali (*NeKSAP) District Food Security Networks (DFSNs) provided an early indication on crop performances and the food security situation. Weather-related information, especially on rainfall, was provided by the Department of Hydrology and Meteorology (DHM). For trade information, data from the Trade and Export Promotion Centre (TEPC)[3] of the Ministry of Commerce and Supplies was used.

In addition, a joint crop assessment mission comprised of representatives from MoAD, WFP, FAO, International Rice Research Institute (IRRI), and International Maize and Wheat Improvement Centre (CIMMYT) undertook field verification and stakeholder consultations that helped substantiate the secondary information and capture key issues, constraints, and opportunities of the summer crop production in 2013.

The mission undertook the following activities:

- Consultation with District Agricultural Development Officers (DADO) and other authorities to get an overview of agricultural production (summer crops) and understand the reasons behind deviations (if any) in the production of summer crops;

- Discussion with district line agencies and stakeholders, including the Chief District Officer (CDO), Local Development Officer (LDO), District Chamber of Commerce and Industries

[3] www.tepc.gov.np

(DCCI), etc., on issues related to crop production and associated impacts on food supply and food security.

- Community interactions to verify information obtained through DADO and other stakeholders and to get community perceptions on issues of agricultural production, weather conditions, livelihoods, and food security.

Field verifications were undertaken in 15 districts (3 districts from each development region), which were purposively selected so as: (i) to cover districts that were anticipated to observe production losses of summer crops; (ii) to ensure coverage from each of the five development regions; and (iii) to cover districts that were not covered in earlier missions. The field mission was undertaken during the first and second weeks of December 2013. The field mission also observed three crop cuttings in Dhanusa (1) and Saptari (2). A sample crop cutting report is presented in Annex I.

Prior to the field mission a series of meeting at MoAD were organized to create a common understanding on the process and outputs among the mission members. Following the field mission a debriefing meeting was organized to share the preliminary findings and impressions from the field.

The following districts were covered in the field mission:

Table 1: Districts covered by the 2013/14 summer crop assessment mission

Ecological belt	**Development regions and districts**				
	Eastern	Central	Western	Mid-Western	Far Western
Terai	Saptari	Dhanusa, Makwanpur	Nawalparasi	Banke, Dang	Kanchanpur
Hill	Panchthar	Bhaktapur, Kavre	Arghakhanchi, Palpa	n/a	Doti
Mountain	Taplejung	n/a	n/a	Jumla	Darchula

National summer crop output

According to MoAD, the 2013/14 total summer crop output (paddy, maize, millet, and buckwheat) was estimated at 7.67 million metric tons, of which there were 5.04 million mt of paddy, 2.3 million mt of maize, 304 thousand mt of millet, and 10.3 thousand mt of buckwheat. Aggregate summer cereal production reflects an increase of 12.10 percent compared to last year and 11.90 percent compared to the five-year average or normal level. It should be noted that the summer crop production in 2012/13 plummeted due to dry spells and delayed monsoon that confined the total summer crop output to 6.82 million mt. Production increases in 2013/14 are largely attributed to timely and adequate rainfall, timely availability of fertilizers, and use of improved seed varieties.

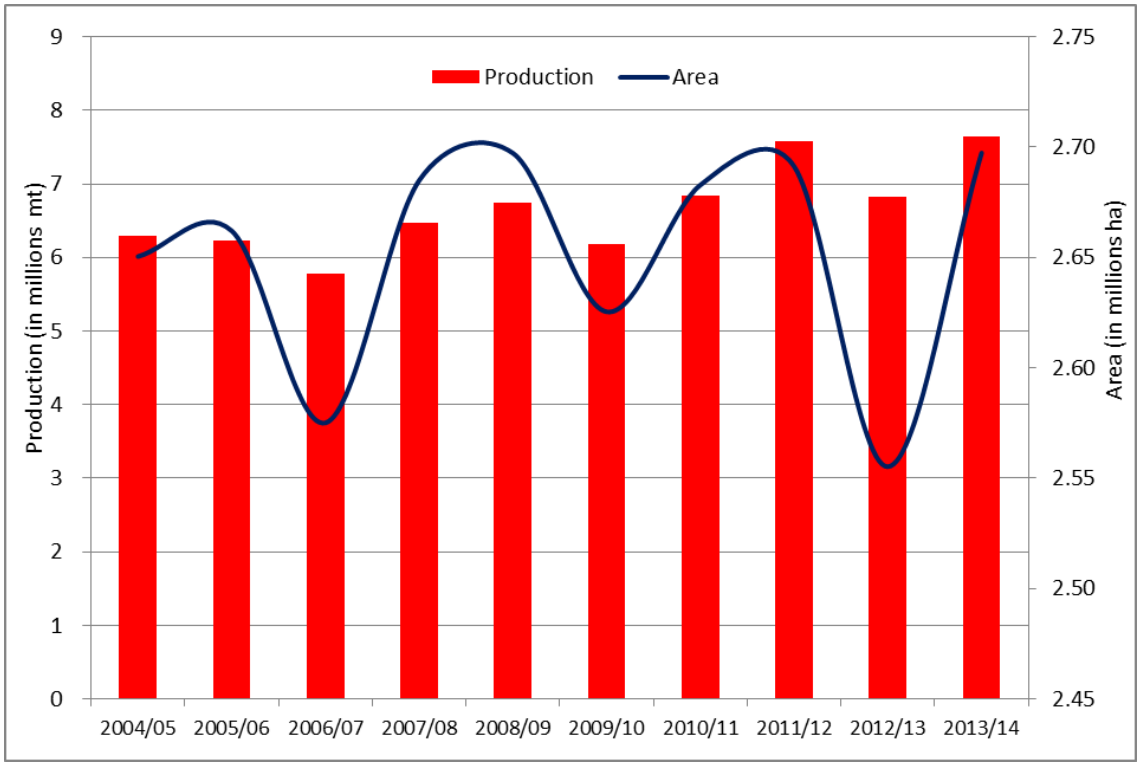

Figure 1: Acreage and output of summer cereals for the last ten years. (Source: MoAD)

In 2013/14 the acreage under summer cereals (paddy, maize, millet, and buckwheat) increased and stood at 2.7 million ha, an increase of 5.56 percent compared to last year and 1.78 percent compared to the normal level. The area and production of summer crops this year reflects a record level increase over the last 10 years. It should be noted that the area under summer cereals had dropped to a record level in 2012/13 due to the poor and late monsoon (**Figure 1**).

Figure 2 shows a regional breakdown of summer cereal production. The largest production was in the eastern region (2.16 million mt) followed by the central (2.01 million mt), western (1.92 million mt), mid western (0.97 million), and far western (0.58 million mt) regions. At a sub-regional level the largest cereal producing belts were the eastern Terai, western hills, and central Terai at 1.25 million mt, 1.11 million mt, and 1.08 million mt respectively.

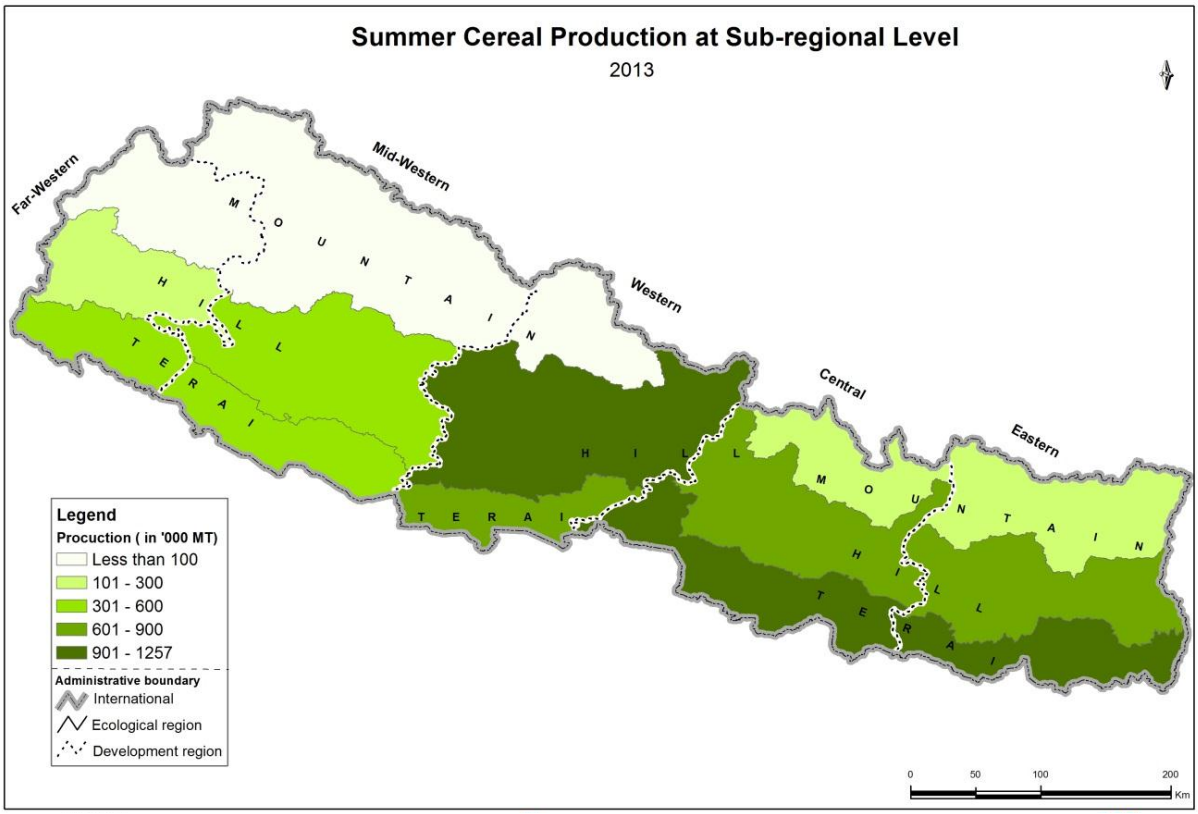

Figure 2: Summer cereal production at sub-regional level

Area and production of summer crops in 2013/14

Paddy and maize, which are the two most important crops of Nepal, are grown in the summer. Millet and buckwheat are the other cereals grown during the summer; however, their acreage and contribution to overall food availability is marginal (**Figure 3**).

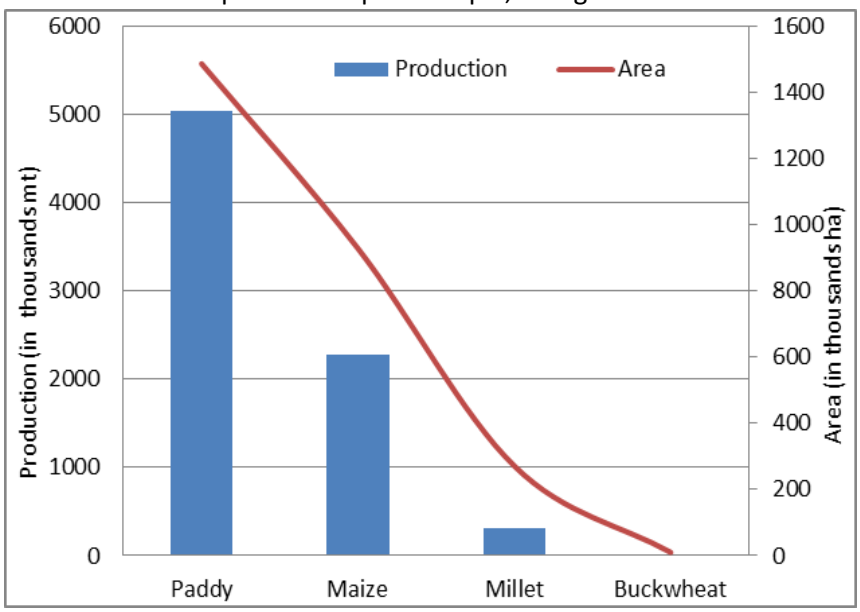

Figure 3: Area and production of summer cereal crops in 2013/14

Figure 4 shows the share of crop area for summer cereal crops in 2013/14. Paddy had the largest share of cultivated land (55 percent) followed by maize (35 percent). The area allocated to millet and buckwheat was marginal.

Summer crop production is dominated by paddy (**Figure 5**). With an estimated production of 5.04 million mt, paddy's share in the national summer crop output was 66 percent of the total. With a total production of 2.3 million mt, maize's share in the national summer crop output was 30 percent. The share of millet and buckwheat in the total summer crop output was 4 percent (305 thousand mt) and 0.13 percent (10 thousand mt) respectively.

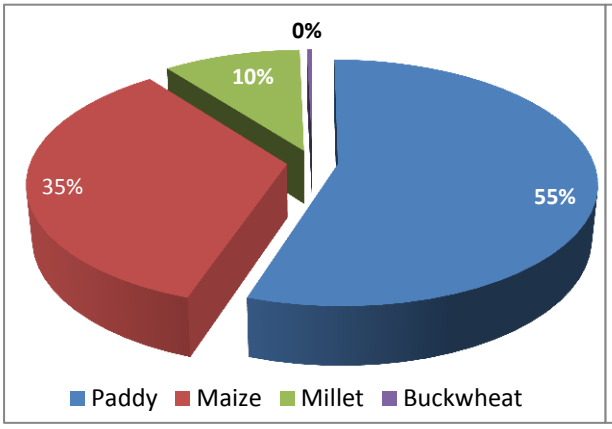

Figure 4: Share of crop area for summer cereal crops

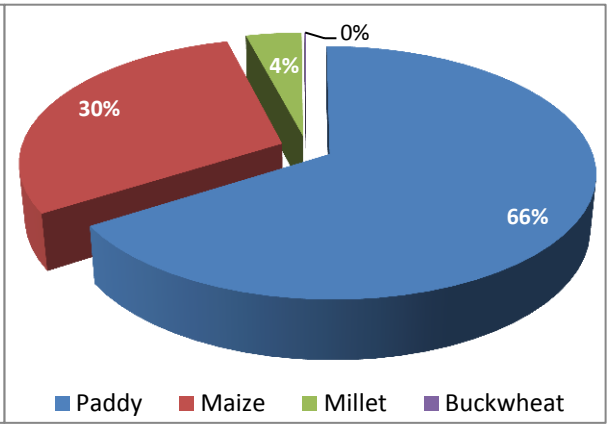

Figure 5: Share of different cereals in the total summer crops

Table 2 shows the change in area and production of summer cereal crops over the past six years. With an average annual increase in area of 1.77 percent, production of cereal crops increased by 11.89 percent compared to the normal level. Compared to last year, i.e., 2012/13, the production and acreage gains in 2013/14 are even higher at 12.11 percent and 5.56 percent respectively.

Table 2: Change in area and production of summer cereal crops

YEAR	Paddy		Maize		Millet		Buckwheat		Total	
	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
2008/09	1555940	4523693	875428	1930669	265889	292683	NA	NA	2697257	6747045
2009/10	1481289	4023823	875660	1855184	268473	299523	NA	NA	2625422	6178530
2010/11	1496476	4460278	906253	2067522	269820	302691	10304	8841	2682853	6839332
2011/12	1531493	5072249	871387	2179414	278030	315067	10339	10021	2691249	7576751
2012/13	1420570	4504503	849635	1999010	274350	305588	10681	10056	2555236	6819157
2013/14	1486951	5047047	928761	2283222	271183	304105	10510	10335	2697405	7644709
Average	1497154	4516909	875673	2006360	271312	303110	10441	9639	2650403	6832163
Change from normal	-0.68	11.74	6.06	13.80	-0.05	0.33	0.66	7.22	1.77	11.89
Change from 2012/13	4.67	12.04	9.31	14.22	-1.15	-0.49	-1.60	2.77	5.56	12.11

Compared to the normal level, individual crop wise acreage and production changes indicate the largest production gains for maize and productivity gains for paddy. While production of maize increased by 13.80 percent with a corresponding acreage increment of 6.06 percent, production of paddy increased by 11.74 with an acreage loss of 0.68 percent. Compared to last year (i.e., 2012/13), the largest acreage and production gains in 2013/14 were observed in maize at 9.31 percent and 14.22 percent respectively. Though the area under paddy increased by 4.67 percent, millet and buckwheat, however, observed marginal acreage losses at 1.15 percent and 1.60 percent respectively.

Paddy

In 2013, paddy was planted in 1.48 million ha of land, which is an increase of 4.67 percent over last year's acreage of 1.42 million ha. Paddy production, however, increased by 12.04 percent compared to last year and reached 5.04 million mt, near the production of 2011/12, which, at 5.07 million mt, was the highest for last three decades.

Figure 6 shows the share of national paddy production by development region. At 1.4 million mt the eastern region had the largest share (28 percent) in national paddy production. Production of paddy in this region increased by 23.37 percent compared to last year.

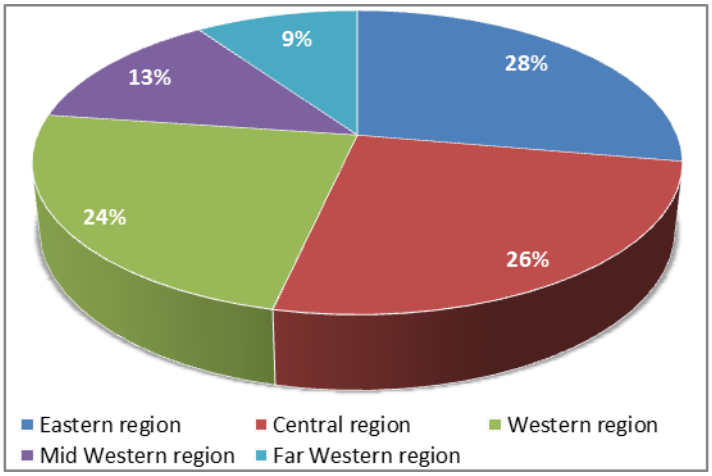

Figure 6: Share of development regions in national paddy production

Among the ecological belts, the eastern Terai produced the largest amount of paddy this year, accounting for 1.06 million mt. In 2012, however, the central Terai was the largest paddy producing belt. At a district level, with a production of 365 thousand mt, Jhapa was the largest paddy producing district followed by Morang (332 thousand mt) in 2013.

Though overall paddy production increased considerably, some paddy producing districts like Dhanusa observed an acreage and production loss, largely due to localized dry spells. The preliminary estimate of the summer crops released by MoAD reports an acreage and production loss in the district of 11.26 percent and 6.72 percent respectively. The crop assessment mission, however, estimated an acreage loss of 32 percent and production loss of 56,000 mt, which is much higher than that estimated by MoAD. In Dhanusa 19 VDCs are reported as the worst affected as paddy was planted only in 45-60 percent of the area. Similarly, in Jumla, the DADO estimated paddy loss of 45 percent in five VDCs (Talium, Lamra, Hyakun, Taatopaani, Kudari, and Raralihi) due to heavy rainfall and hailstones on October 10, 2013. Other districts reporting large paddy losses include Mahottari (22.16 percent), Okhalghunga (21.25 percent), Kavre (16.32 percent), Sunsari (12.17 percent), and Kalikot (4 percent).

Though there were no major disease or pest outbreaks reported in paddy, some areas observed blast, blight, zinc deficiency, floods, mealy bugs, leaf roller, and stem borer. However, the effect on overall production remained marginal except for Bhaktapur and Kavre, where a hybrid seed variety could not tolerate neck blight and bacterial leaf blight that caused significant loss. The issue was widely covered in the media and a probe committee was also commissioned by MoAD.

Case I: Hybrid paddy brings production loss to farmers

A portion of the standing paddy crop in Bhaktapur and Kavre was reportedly destroyed by neck blast and bacterial leaf blight diseases. The crop assessment mission found significant paddy loss of 724 ha (out of 4,352 ha) in Bhaktapur and 1,388 ha (out of 10,100 ha) in Kavre. In Bhaktapur, where the overall production increase is estimated at 5 percent compared to last year, up to a 90 percent loss is estimated in Bhaktapur municipality and 80 percent in Tathali, Sudal, Sipadol, Jhaukhel, and Katunje VDCs. Similarly, in Kavre, a 70 percent crop loss was estimated in 1388 ha, worth NPR 97 million.

MoAD formed a committee to probe the issue in September. It was found that hybrid varieties of paddy (DY 69, DY 28, and DY 18) originally recommended for the Terai and inner Terai were used in Bhaktapur and Kavre. Hence, the variety was not able to perform due to adaptation problems. The local climatic conditions in 2013 rendered the crops susceptible to neck blast and bacterial leaf blight. The potency of the variety in suitable climate, however, has been affirmed as it has done well in Makwanpur this year and was reported promising in Bhaktapur and Kavre in previous years. DY 69 is a Chinese hybrid variety produced by Daewoo Seed Company.

Maize

Maize is an integral crop of the hill farming system and can be grown both under rain fed (upland) and irrigated conditions. Traditionally, maize forms the most important staple cereal in the hills. In recent years, however, maize is being increasingly used for poultry feed and hence demand for maize is on the rise with proliferating poultry businesses.

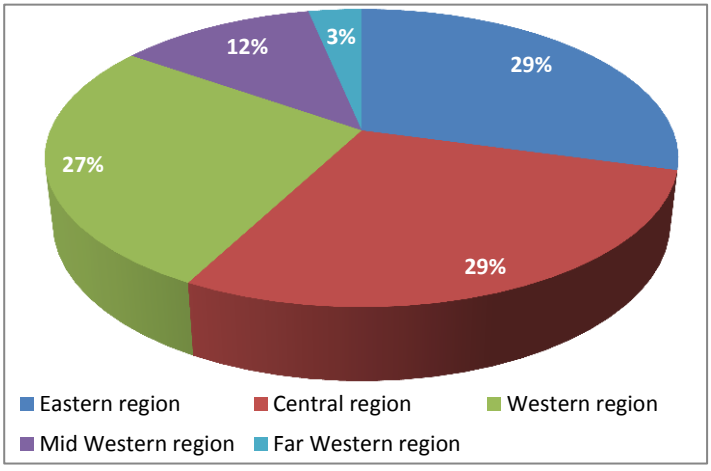

Figure 7: Share of different regions in national maize production

Figure 7 shows the share of national maize production by development region. In 2013, 2.28 million mt of maize was harvested from 928 thousands ha of land. Total area and production represent a respective increase of 9.31 percent and 14.21 percent compared to last

year. A large portion of the maize harvest comes from the eastern (667 thousand mt) and central development regions (650 thousand mt) with their share of national production estimated at 29 percent each.

Among the sub-regions, however, with a total production of 577 thousand mt, the western hills makes the largest contribution with 27 percent of the total national maize production, followed by the central hill and eastern hill sub-regions. At the district level Bhojpur was the largest maize producing district (124,050 mt) followed by Jhapa (95,000 mt), Bara (86,260 mt), Syangja (81,377 mt), and Tanahun (71,630 mt).

Millet and Buckwheat

Millet and buckwheat are considered an underutilized and under exploited crops in Nepal and are mainly cultivated in marginal uplands of the hills and mountains regions. Both are believed to be hardy crops and hence bear potential for increasing cereal production in the context of adapting to climate change.

In 2013/14, 304 thousand mt of millet was produced from 271 thousand ha of land. Area and production of millet dropped by 1.15 percent and 0.48 percent respectively compared to last year. However, compared to the normal level, there was a marginal production increase (0.33 percent) despite a marginal acreage drop (0.05 percent).

Figure 8 shows the share of national millet production by development region. With 103 thousand mt of millet production, the western region had the largest share (34 percent) of national millet production. The eastern and central regions have the next largest share at 29 percent and 22 percent respectively. The western hills, eastern hills, and central hills are the largest millet producing ecological belts with their production recorded at 102,635 mt, 69,124 mt, and 38,970 mt respectively.

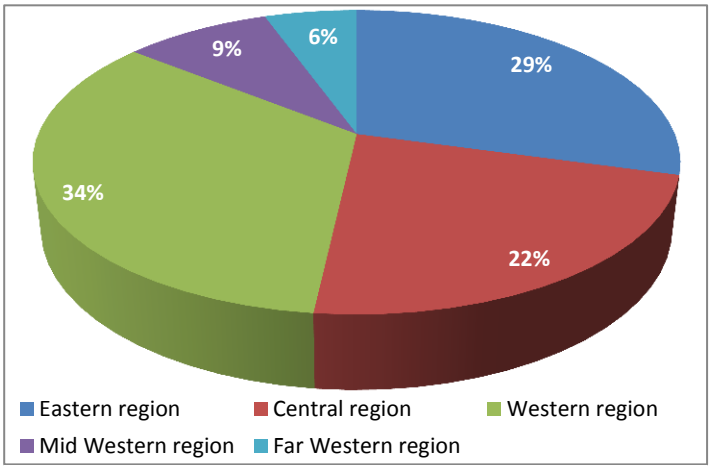

Figure 8: Share of different regions in national millet production

Buckwheat plays a marginal role in country's overall cereal availability. In 2013/14, 10 thousand mt of buckwheat was harvested from 10 thousand hectares of land. The western region produced the largest volume of buckwheat at 3,344 mt.

Weather

Agricultural performance in Nepal largely depends upon the timeliness and intensity of rainfall. The monsoon, which is the biggest source of precipitation in Nepal, normally enters the country on June 10 from the eastern region and extends towards the west, covering the entire country normally in a week's time. Monsoon rains originate along the Bay of Bengal in the last week of May, travel along the northeastern parts of India before hitting the Himalayas.

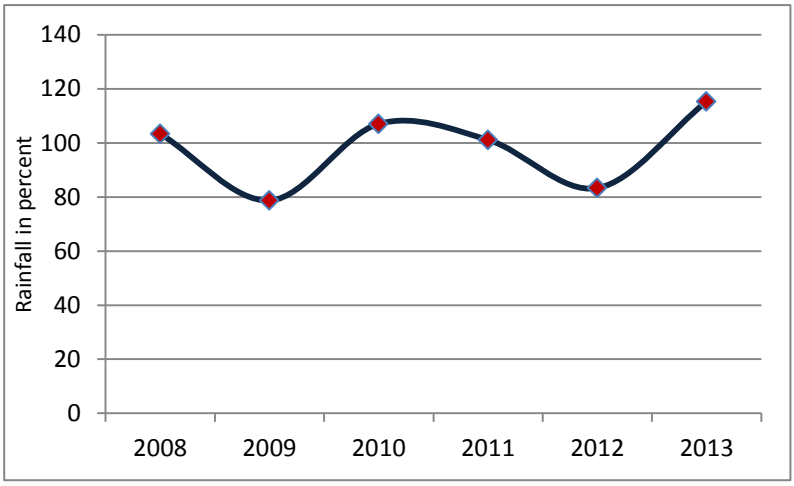

Figure 9: Yearly rainfall (monsoon) 2008- 2013 (in percent)

Figure 9 shows the yearly monsoon rainfall as a percent of the normal level from 2008-2013. At 115 percent the average monsoon rainfall during July-September 2013 was the highest in the last five years. Hence, overall monsoonal precipitation for the summer crops in 2013 is believed to be adequate. Though the monsoon made a slightly delayed entry (by 3 or 4 days), it was very active during the start (i.e. June) that provided a conducive environment for paddy.

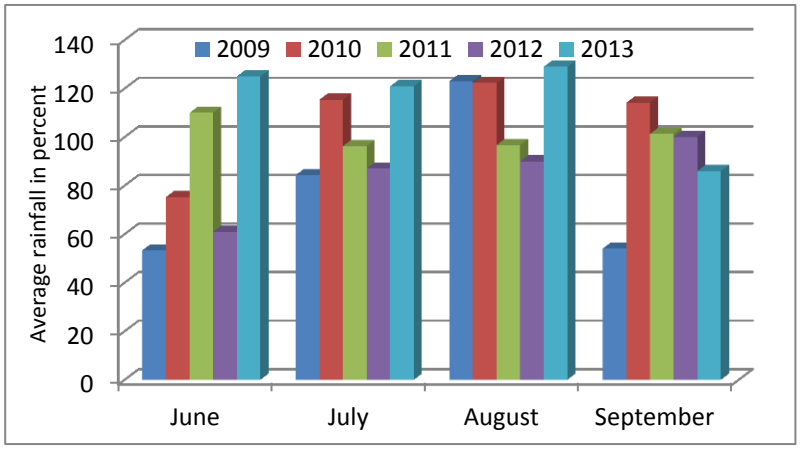

Figure 10: Average rainfall distribution (in percent) from 2009-2013

June and July are the paddy transplanting months in Nepal and received ample rainfall this year allowing for timely transplanting. The average rainfall in these months, which was recorded at 125 percent and 121 percent of the normal level respectively, is the highest in the last five years (**Figure 10**). Nevertheless, some districts in the eastern and central development regions, like Siraha, Saptari, Dhanusa, Mahottari, and Sarlahi, had insufficient rainfall that affected paddy plantation. These districts have a perennial problem of insufficient, untimely, and intermittent rainfall thereby compromising production potential and productivity. According to the 2013 summer crop assessment mission, in Dhanusa district alone, 32 percent (19,520 ha) of the paddy area remained fallow due to untimely and insufficient rainfall. The estimated production loss arising from the drought is estimated at 56,000 mt.

On the other hand, the torrential rainfall in the upper catchments of the Mahakali and Seti Rivers during 16-18 June caused flooding in those rivers which affected crops, livelihoods, and lives downstream. For instance, in Kanchanpur, heavy rains caused damage to early paddy and seed beds.

Agricultural Inputs

The Agriculture Perspective Plan (APP) has identified fertilizer, irrigation, technology and services, roads and power, and credit as the priority inputs for agricultural growth and development in Nepal.

Fertilizer

Though the APP has targeted a fertilizer use of 131 kg/ha, actual fertilizer use as of the first trimester of 2013/14 was estimated at 57.3 kg/ha. Fertilizer use in 2012 was 46.8 kg/ha[4]. However, it is to be noted that two-thirds of the fertilizer supply in Nepal is met through the informal sector[5].

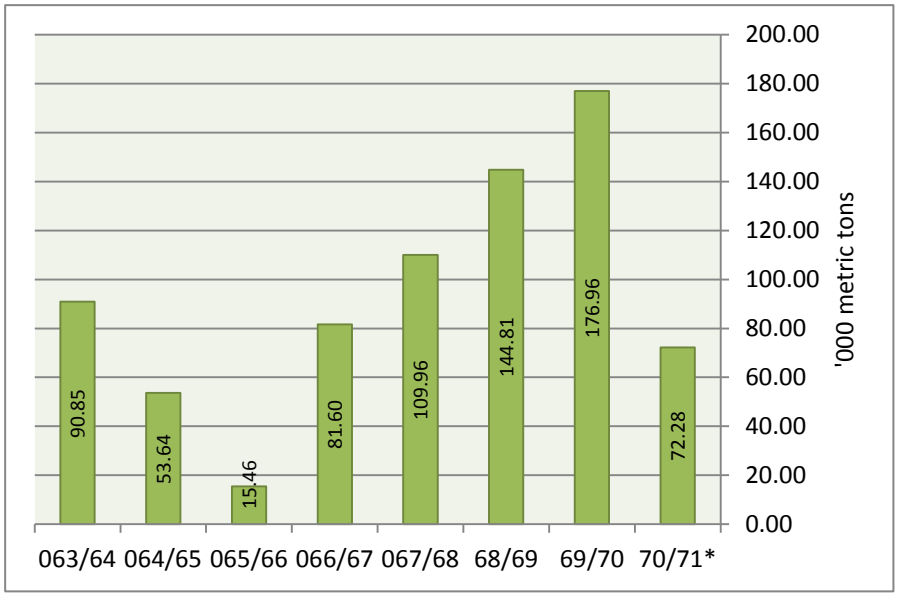

Figure 11: Fertilizer supply (* first trimester only)

Fertilizer supply, which was reportedly lagging behind the demand for summer cereal crops in 2012, has significantly improved this year. While only 42,516 mt of chemical fertilizer was supplied during June-November 2012[6], supply has significantly increased to 72,282 mt in 2013 (**Figure 11**). The community interactions undertaken during the crop assessment mission also affirmed the larger availability of chemical fertilizer this year.

Seed

Seed supply in Nepal is largely dominated by the informal sector, with almost 92 percent of the total seed supply maintained this way. Informal sector supply includes farmers keeping their own seeds and/or exchanging seeds amongst each other. Informal sector as the predominant seed supply system in Nepal is also documented by Sapkota

Case II: Local seed sufficiency initiatives

To meet the local seed demands, District Agriculture Development Offices (DADOs) are facilitating local level seed production programmes through producer groups. The crop assessment mission interacted with one of such group in Mudhegaun of Doti, the Kalika Seeds Producers Group, where 45 farming households formed a group to initiate organized seed production in the district. In 2011, DADO Doti introduced the source seed. However, due to poor rainfall, production was not as expected and similarly in 2012 the production was not that good as farmers sowed seeds too close. This year, however, production increased significantly and farmers were able to sell seeds for NPR 30/kg.

[4] Based on calculations of the fertilizer supplied by the Agricultural Inputs Company Limited (AICL)
[5] Agriculture Sector Performance Review
[6] Summer Crop Assessment Report 2012

et al (2011), where they report that 92.3 percent of paddy seed requirement was met through the informal system[7]. Similarly, Pokhrel (2013) reports a seed replacement rate of 11.3 percent for maize[8]. The Seed Replacement Rate (SRR) of major field crops is very low, about 8 percent[9]. The crop assessment mission also found a large number of farmers keeping their own seeds and/or replacing seeds through informal exchanges. Most of the interactions indicated 60 to 85 percent of farmers using their own seeds in the cereal crops. For vegetables, however, seed replacement rate is significantly higher. Information obtained from Nepal Seed Company indicate that the official sales of improved seeds in the first quarter of the fiscal year was 650 mt (paddy only), which is almost half of that in 2012, during which it had supplied 1200 mt.

Agricultural mechanization

Agricultural mechanization is gradually gaining pace in Nepal. However, the pace of mechanization is higher in the Terai compared to the hills and mountains, which is largely due to the topographic advantage of the Terai for mechanization. While mechanization is a deliberate evolution for commercialization, it is also a response to the increasing rate of migration as well.

The stakeholder and community interactions undertaken during the crop assessment missions indicated a rapid rate of agricultural mechanization in the Terai regardless of administrative boundaries, especially for cultivation and threshing. For instance, in Kanchapur and Nawalparasi districts, almost 80 percent of crop area is cultivated by tractor, power tiller and rotavetor. Threshing of paddy and wheat is almost entirely done by threshers; similarly this is the case in most of the Terai districts. The cost benefit analysis of mechanization, however, needs to be analyzed in detail. During the interaction in Kanchanpur it was known that the rental charges of machines were quite high, e.g., 2000 NPR/hour for a rotavetor, 1400 NPR/hour for a big tractor, 600 NPR/hour for a power tiller, and 1500 NPR/hour for a thresher.

[7] Sapkota S, PP Regmi, S Pandey, B Tripathi, and SK Sah, 2011, Prospects and constraints of formal rice seed system in Nepal, *Agronomy journal of Nepal*, Vol. 2; http://www.nepjol.info/index.php/AJN/article/view/7531; Accessed: January 2, 2014

[8] KC D, Ferrara G, Gadal N, Neupane S, Puri R, Khatiwada B, Sharma H, and HMRP/CIMMYT Int., 2013, Maize seed production communities in hills towards a new path of contracted seed production in Nepal, *Agronomy journal of Nepal*, Vol. 3.

[9] Pokhrel S., 2012, Role of DISSPRO and CISB on current seed supply situation in Nepal, *The Journal of Agriculture and Environment*, Vol. 13; http://www.moad.gov.np/journal/Article_9.pdf; Accessed: January 2, 2014

Trade

According to the Trade and Export Promotion Centre (TEPC), the value of foreign trade during the first four months of Nepali Fiscal Year 2070/71 stood at 239.43 billion NPR, an increase of 18.70 billion compared to the same period last year. Share of export and import in the total trade remained at 12.4 percent (29.62 billion NPR) and 87.6 percent (209.80 billion NPR), which shows a large trade deficit.

Key agricultural commodities contributing to the national exports include lentil, cardamom, tea, and ginger with a combined export value of 2.9 billion NPR (9.85 percent of total exports during the period). The export value during this period is a drop by 0.43 billion NPR compared to the same period last year, with the largest drop recorded in lentils (more than 50 percent). Cardamom and tea, however, recorded an increase in the export values.

The share of cereals in national imports during this period is estimated at 2.26 percent with a corresponding value of 4.7 billion NPR, a marginal drop compared to the same period last year, which could be due to better crop harvests this year compared to the last one. The provisional data[10] from TEPC indicates more than half of the value of cereal imports consisting of rice (**Figure 12**). Import volume of rice, maize, wheat, and buckwheat and millet is recorded at 75 thousand, 61 thousand, 23 thousand, and 4.2 thousand mt respectively (**Table 3**). Cereal exports during this period, however, were nominal compared to that of imports. Total value of cereal exports (rice, buckwheat, and millet) is estimated at 2.7 million NPR, a large portion of which (90.47 percent) comes from buckwheat.

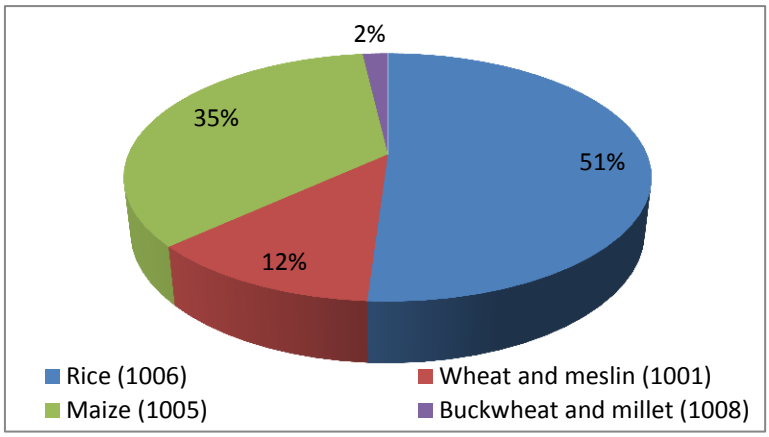

Figure 12: Value of cereal import during the first four months of Nepali Fiscal Year 2070/71

Table 3: Export and import of key cereals during July to October 2012 and 2013

Commodity	HS code	July- October 2012				July- October 2013			
		Export		Import		Export		Import	
		Volume (mt)	Value ('000 NPR)	Volume (mt)	Value ('000 NPR)	Volume (mt)	Value ('000 NPR)	Volume (mt)	Value ('000 NPR)
Rice	1006	109	7,163	121,020	3,444,067	0.2	21	75,528	2,424,682
Maize	1005	16	196	63,948	1,328,247	-	-	61,069	1,659,799
Wheat and meslin	1001	0.1	1	6	122			22,823	578,512
Buckwheat and millet	1008	-	-	-	-	112	2,700	4,218	87,977
Total		**126**	**7,360**	**184,974**	**4,772,436**	**112.5**	**2,721**	**163,638**	**4,750,970**

[10] Yet to be published officially

Food market situation

Figure 13 presents the price trends for major summer crops, paddy and maize from 2009 to 2013[11]. Prices of both crops increased marginally in 2013 over last year: the price of paddy increased by 4 percent in 2013 compared to an increase of 5.2 percent last year, while the price of maize increased by 6.4 percent this year compared to a 3.5 percent increase last year.

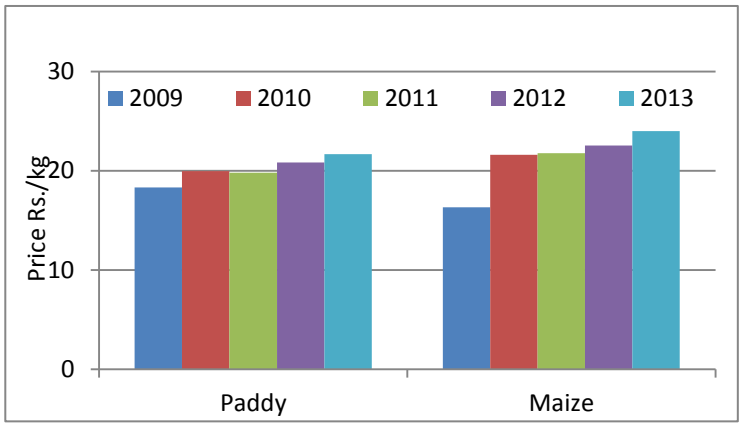

Figure 13: Price trends from 2009 to 2013

Figure 14 presents the wholesale price index (WPI) in December 2011, 2012, and 2013. The overall year-on-year WPI increased by 9.2 percent in December 2013 as compared to 8.3 percent over the same period last year. The WPI of agricultural commodities in 2013 sharply increased by 14.1 percent, while that of food grains increased by 5.7 percent as compared to a 11.3 percent increase in 2012.

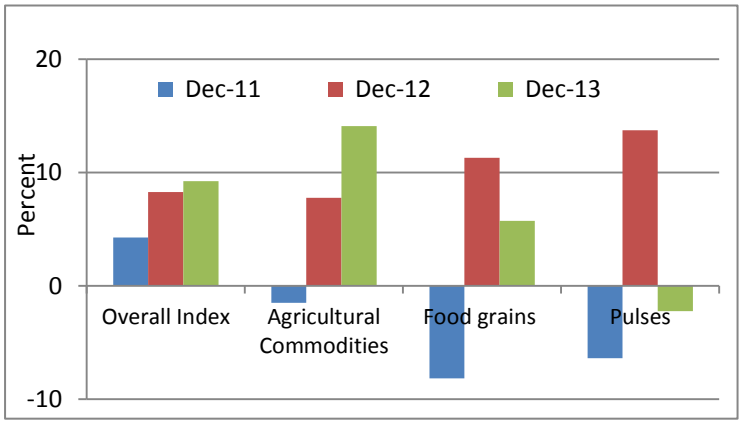

Figure 14: Wholesale Price Index

Figure 15 presents the year-on-year wage rate index (WRI) in December 2012 and 2013. The overall WRI increased by 8.5 percent in December 2013 compared to an increase of 13 percent over the same period last year. The WRI of agricultural labour increased by 7.3 percent in December 2013 compared to an increase of 13.5 percent over the same period last year. Of note is the difference between the WRI for male and female labours.

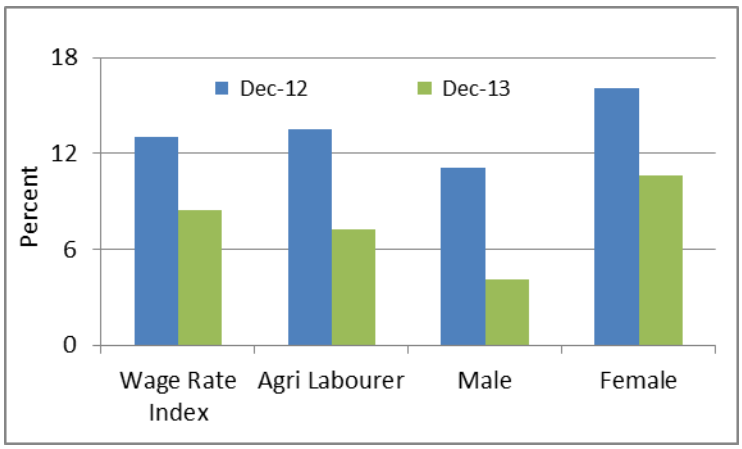

Figure 15: Wage Rate Index

[11] These prices are the average of nine markets in the Terai and Kathmandu sold by farmers at the market centre.

Global and regional overview

According to the Food and Agriculture Organization's latest forecast, global cereal production is estimated at 2,500 million mt (including rice in milled terms), an increase of 8.4 percent compared to last year[12]. At 2,500 million mt, production of wheat, coarse grains, and rice (milled) is estimated at 710.8, 1294.8, and 494.2 million mt respectively. Asia makes the largest contribution to global cereal production (**Figure 16**).

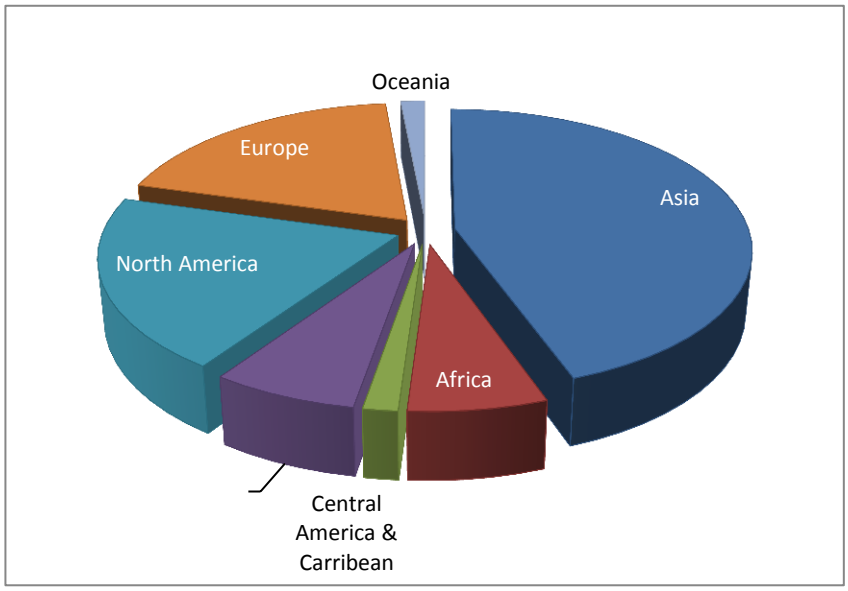

Figure16. Share of different regions in global cereal production in 2013. Source: FAO

India

According to the Ministry of Agriculture, the first advance estimate of the *Kharif* crop output in 2013-14 was 129.32 million mt, marginally higher (by 0.9 percent) compared to 2012-13, during which the *Kharif* crop output was 128.2 million mt. The latest estimates are significantly higher than the average of 116.78 mt for the last five years.

Despite aggregate production increases, paddy, which is the major *Kharif* crop in India, experienced a marginal production decline compared to last year. With a 0.5 percent decline, production of rice has been estimated at 92.32 million mt. Other *Kharif* crops like maize, pulses, soybean, groundnut, cotton, and sugarcane saw increased production compared to last year. For instance, production of maize increased by 10.8 percent and was estimated at 17.78 million mt. Similarly, with a 1.7 percent increase, production of pulses was estimated at 6.01 million mt.

According to India's Central Rice Research Institute (CRRI), the key reason for the production drop in rice was Cyclone Phailin that reportedly damaged the crop in Odisha. Similarly, heavy rains followed by the Cyclone led to decline in production in Punjab and Haryana. The eastern states of Bihar, Jharkhand, West Bengal and Assam that had drier-than-normal weather in 2012/13 are also expected to experience declines in production in rice[13].

[12] Food and Agriculture Organization (FAO), 2013, Crop Prospects and Food Situation, No.4, December 2013
[13] http://oryza.com/news/rice-news/india-2013-14-rice-production-likely-decline-100-million-tons#; Accessed on 26 December 2013

2013/14 winter crop outlook and food security situation

Wheat and barley are the major winter crops of Nepal, generally grown during November-December. By the time the 2013/14 summer crop field assessment missions were undertaken, wheat sowing was almost completed in the mid western and far western regions. In the eastern, central, and western regions wheat was also sown normally. Conditions for sowing and crop growth were reported as normal, largely on the basis of a prolonged monsoon that provided adequate soil moisture for germination and crop growth.

An aggregate gain in summer crop production is expected to have a positive effect on the food security situation of the country, especially by improving food availability at local levels. Since the prospect for winter crops (especially wheat) also appears promising, food availability is expected to improve in 2013/14. However, domestic production is not the sole factor determining the country's food security. Issues of trade, access to food, and its utilization are other important variables that affect overall food security.

Conclusion

Growing conditions for summer crops were favourable in 2013: average rainfall during July-September was the largest in the last five years and the supply of fertilizer by Agricultural Inputs Company Limited (AICL) improved dramatically compared to last year. Hence, farmers were able to have a better harvest of paddy, maize, millet, and buckwheat. As a result, the production of summer cereals this year, at 7.67 million mt, was at record levels. As such, the 2013 summer cereal production surpassed the normal level and last year's production by 11.90 percent and 12.10 percent respectively.

Cereal production has not only increased in Nepal but has also climbed globally by 8.4 percent compared to last year. FAO has estimated global cereal production at 2,500 million mt. In India, also, the 2013 *Kharif* crop production has increased, though marginally (i.e., 0.9 percent), and is estimated at 129.3 million mt.

As usual, the summer cereal output in Nepal is overwhelmingly paddy and maize. With a production of 5.04 million mt and 2.3 million mt, the share of paddy and maize in summer cereal production is estimated at 66 percent and 30 percent respectively. Jhapa and Bhojpur are the largest paddy and maize producing districts with their production recorded at 365 thousand mt and 124 thousand mt respectively.

Trade of cereal crops, as usual, has shown a large deficit: export value of 2.7 million NPR versus imports of 4.7 billion NPR during July-October 2013. Despite this large sum, the value of cereal imports to total national imports stands at 2.26 percent, a marginal drop in the value over the same period last year.

With an increased summer crop output and good prospects for the winter crop (wheat and barley), 2013/14 is expected to experience better availability of food grains.

Annex I- Paddy crop cutting report

Saptari district

Methodology

Six plots of one square meter were chosen using the standard crop area selection technique. Sample plots were chosen from two locations, Kochabakhari (4) and Belha (2), and three crop varieties were covered.

The crop cut survey showed the productivity was higher than that of district average, which is 2.57 mt/ha.

Location: Kochabakhari- one of the productive areas of the district

Sample 1: Sona Masuli

Sona Masuli is one of the most widely cultivated rice varieties in the area. Following observations were taken:

- Weight without moisture reduction= 0.45 Kg
- Weight after moisture reduction (15%)= 0.3825 kg
- Yield= 3.825 Mt/ ha
- Crop Intensity = 36 / m^2
- Average number of tillers per sowing = 11

Sample 2: Radha 12

This is also a widely used variety in the area. Following observations were obtained after the crop cut survey:

- Weight without moisture reduction= 0.625 Kg
- Weight after moisture reduction (15%)= 0.53125 kg
- Yield= 5.3125 mt/ ha
- Crop Intensity = 31 / m2
- Average number of tillers per sowing = 13

Sample 3: Radha 12

Another sample of Radha 12 was also taken. Following observations were obtained after the crop cut survey:

- Weight without moisture reduction= 0.55 Kg
- Weight after moisture reduction (15%)= 0.4675 kg
- Yield= 4.675 mt/ ha
- Crop Intensity = 30 / m2
- Average Number of tillers per sowing = 11

Sample 4: Kariya Kamad

Kariya kamad- a scented variety is one of the local varieties that farmers cultivate for their own consumption. Following observations were obtained after the crop cut survey:

- Weight without moisture reduction= 0.3 Kg
- Weight after moisture reduction (15%)= 0.255 kg
- Yield= 2.55 mt/ ha
- Crop Intensity = 32 / m2
- Average number of tillers per sowing = 8

Location: Belha, Negada VDC

This area has received insufficient rainfall for the last four years. Hence, summer crop production was significantly lower compared to the normal level. Two sample plots (representing the best and worst) were selected and following results were obtained (average of two samples).

Sample: Sona Mansuli

Weight without moisture reduction = 0.225 Kg

Weight after moisture reduction (15 %) = .19125 kg

Average yield = 0.956 mt/ha

Crop intensity = 30 / m^2

Average number of tillers per sowing = 7 tillers

Annex II: Preliminary estimate of paddy, maize, millet, and buckwheat (2070/71)

	Paddy		Maize		Millet		Buckwheat		Total
DISTRICT	Area	Prod	Area	Prod	Area	Prod	Area	Prod	
TAPLEJUNG	6,950	13,861	16,075	49,408	3,290	4,418	120	170	67,857
SANKHUWASHAVA	13,775	35,458	12,470	17,000	7,171	7,314	18	15	59,787
SOLUKHUMBU	1,620	3,564	12,955	32,517	2,100	2,688	230	150	38,919
E.MOUNTAIN	***22,345***	***52,883***	***41,500***	***98,925***	***12,561***	***14,420***	***368***	***335***	***166,563***
PANCHTHAR	10,322	30,127	18,627	29,931	4,805	9,046	56	36	69,140
ILLAM	14,185	44,966	28,200	69,654	3,000	3,000	25	20	117,640
TERHATHUM	10,180	27,576	12,410	27,302	2,800	3,300	35	30	58,208
DHANKUTA	10,660	24,244	5,450	14,975	8,000	8,000	0	0	47,219
BHOJPUR	17,150	48,340	42,776	124,050	5,500	5,000	17	12	177,402
KHOTANG	15,202	42,600	41,060	70,378	21,315	23,377	700	400	136,755
OKHALDHUNGA	4,350	11,310	11,580	25,476	7,751	12,401	105	90	49,277
UDAYAPUR	15,250	52,850	9,500	23,500	2,580	5,000	20	20	81,370
E.HILLS	***97,299***	***282,013***	***169,603***	***385,266***	***55,751***	***69,124***	***958***	***608***	***737,011***
JHAPA	88,500	365,250	36,850	95,000	1,750	1,800	1,270	1,270	463,320
MORANG	83,525	332,100	15,000	50,000	1,500	1,800	70	70	383,970
SUNSARI	51,550	180,200	7,800	26,500	1,200	1,100	400	400	208,200
SAPTARI	35,000	90,500	3,500	7,800	250	215			98,515
SIRAHA	38,788	98,303	2,000	4,000	650	575			102,878
E.TERAI	***297,363***	***1,066,353***	***65,150***	***183,300***	***5,350***	***5,490***	***1,740***	***1,740***	***1,256,883***
Eastern region	**417,007**	**1,401,249**	**276,253**	**667,491**	**73,662**	**89,034**	**3,066**	**2,683**	**2,160,457**
DOLAKHA	3,175	5,874	5,450	11,718	3,600	4,250	430	390	22,232
SINDHUPALCHOK	12,235	28,446	24,907	53,958	19,320	21,252			103,656
RASUWA	1,305	3,240	2,430	5,080	900	833			9,153
C.MOUNTAIN	***16,715***	***37,560***	***32,787***	***70,756***	***23,820***	***26,335***	***430***	***390***	***135,041***
RAMECHAP	9,508	25,862	21,480	57,352	5,060	4,402	19	19	87,635
SINDHULI	14,200	46,860	23,642	59,577	11,618	9,526	532	272	116,235
KAVRE	10,100	30,418	24,278	51,592	3,505	3,501	605	605	86,116
BHAKTAPUR	4,352	26,958	1,969	8,860	106	153			35,971
LALITPUR	4,680	26,442	8,589	24,908	575	575	54	53	51,978
KATHMANDU	7,940	45,245	9,923	33,164	852	852	5	5	79,266
NUWAKOT	14,695	63,167	19,615	58,845	5,120	9,728	200	226	131,966
DHADING	12,645	48,100	19,445	48,613	6,930	6,953			103,666

MAKWANPUR	11,125	38,381	23,648	67,870	2,645	3,280	170	189	109,720
C.HILLS	***89,245***	***351,433***	***152,589***	***410,781***	***36,411***	***38,970***	***1,585***	***1,369***	***802,553***
DHANUSHA	40,635	116,647	2,019	6,663	300	300			123,610
MAHOTTARI	36,144	65,060	700	1,400					66,460
SARLAHI	45,500	112,985	5,440	25,283	950	950			139,218
RAUTAHAT	30,500	95,607	1,700	5,500	60	52			101,159
BARA	54,680	259,781	13,478	86,260	78	105			346,146
PARSA	43,710	158,814	4,075	14,262	86	86			173,162
CHITWAN	29,575	100,555	9,750	29,250	1,650	1,600			131,405
C.TERAI	***280,744***	***909,449***	***37,162***	***168,618***	***3,124***	***3,093***			***1,081,160***
Central region	**386,704**	**1,298,442**	**222,538**	**650,155**	**63,355**	**68,398**	**2,015**	**1,759**	**2,018,754**
MANANG			176	345			225	355	700
MUSTANG			530	770			585	1,020	1,790
W.MOUNTAIN	***0***	***0***	***706***	***1,115***	***0***	***0***	***810***	***1,375***	***2,490***
GORKHA	12,765	41,250	19,353	45,480	11,605	13,928	393	396	101,054
LAMJUNG	16,453	47,115	22,725	52,984	7,919	7,523	19	19	107,641
TANAHU	16,415	58,604	26,045	71,630	6,350	5,715	191	187	136,136
KASKI	22,050	80,560	20,573	52,549	14,767	17,278	14	16	150,403
PARBAT	9,595	26,501	14,285	30,405	8,770	7,893	38	37	64,836
SYANGJA	18,030	63,662	30,905	81,377	16,805	18,815	230	172	164,026
PALPA	9,430	35,267	21,583	40,879	2,538	2,587	448	418	79,151
MYAGDI	3,895	12,464	11,134	40,900	2,743	3,425	58	98	56,887
BAGLUNG	5,927	18,897	20,349	58,835	18,615	21,965	80	116	99,813
GULMI	10,484	25,339	24,844	52,519	2,900	2,900	210	252	81,010
ARGHAKHANCHI	8,672	26,306	16,915	49,448	505	606	275	240	76,600
W.HILLS	***133,716***	***435,965***	***228,711***	***577,006***	***93,517***	***102,635***	***1,956***	***1,951***	***1,117,557***
NAWALPARASI	48,350	196,775	10,750	25,310	500	515	200	127	222,727
RUPANDEHI	70,500	329,500	2,650	10,500	120	125			340,125
KAPILBASTU	72,000	235,436	1,370	3,302					238,738
W.TERAI	***190,850***	***761,711***	***14,770***	***39,112***	***620***	***640***	***200***	***127***	***801,590***
Western region	**324,566**	**1,197,676**	**244,187**	**617,233**	**94,137**	**103,275**	**2,966**	**3,453**	**1,921,637**
DOLPA	276	590	220	250	390	285	680	690	1,815
MUGU	1,500	3,751	617	1,061	4,488	4,937	506	506	10,255

HUMLA	572	966	113	178	1,278	1,163	670	603	2,910
JUMLA	2,950	6,490	4,500	7,650	3,890	4,279	85	85	18,504
KALIKOT	2,466	5,932	2,525	5,228	1,232	1,295	105	155	12,610
MW.MOUNTAIN	***7,764***	***17,729***	***7,975***	***14,367***	***11,278***	***11,959***	***2,046***	***2,039***	***46,094***
RUKUM	3,562	9,974	16,289	30,994	915	1,573			42,541
ROLPA	4,715	11,787	11,881	26,138	1,061	1,273	122	120	39,318
PYUTHAN	6,520	19,737	12,058	18,462	1,984	2,006	13	15	40,220
SALYAN	6,934	24,497	16,280	33,495	2,204	2,004	65	71	60,067
JAJARKOT	4,042	10,812	8,266	10,539	1,932	2,297	19	20	23,668
DAILEKH	8,307	25,464	20,150	37,291	2,422	2,643	27	19	65,417
SURKHET	14,600	59,322	16,100	38,243	2,095	2,832			100,397
MW.HILLS	***48,680***	***161,593***	***101,024***	***195,162***	***12,613***	***14,628***	***246***	***245***	***371,628***
DANG	38,230	156,292	25,300	46,600	19	19	20	20	202,931
BANKE	36,500	128,700	8,500	15,300					144,000
BARDIYA	52,000	199,575	1,200	2,500					202,075
MW.TERAI	***126,730***	***484,567***	***35,000***	***64,400***	***19***	***19***	***20***	***20***	***549,006***
Mid Western region	**183,174**	**663,889**	**143,999**	**273,929**	**23,910**	**26,606**	**2,312**	**2,304**	**966,728**
BAJURA	3,310	7,993	790	1,848	2,610	2,610	7	13	12,464
BAJHANG	7,006	22,769	3,652	3,871	2,286	2,057	7	4	28,701
DARCHULA	4,480	10,631	3,558	6,404	1,310	893	100	82	18,010
FW.MOUNTAIN	***14,796***	***41,393***	***8,000***	***12,123***	***6,206***	***5,560***	***114***	***99***	***59,175***
ACHHAM	16,572	34,795	3,652	10,163	3,415	3,427			48,385
DOTI	10,665	22,396	2,748	5,221	5,121	6,145	12	12	33,774
BAITADI	7,000	15,680	14,500	23,417	700	980			40,077
DADELDHURA	6,221	18,066	3,744	10,895	300	300			29,261
FW.HILLS	***40,458***	***90,937***	***24,644***	***49,696***	***9,536***	***10,852***	***12***	***12***	***151,497***
KAILALI	71,450	209,757	5,540	5,755	377	380	25	25	215,917
KANCHANPUR	48,796	143,704	3,600	6,840					150,544
FW.TERAI	***120,246***	***353,461***	***9,140***	***12,595***	***377***	***380***	***25***	***25***	***366,461***
Far Western region	**175,500**	**485,791**	**41,784**	**74,414**	**16,119**	**16,792**	**151**	**136**	**577,133**
N E P A L :	**1,486,951**	**5,047,047**	**928,761**	**2,283,222**	**271,183**	**304,105**	**10,510**	**10,335**	**7,644,709**

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