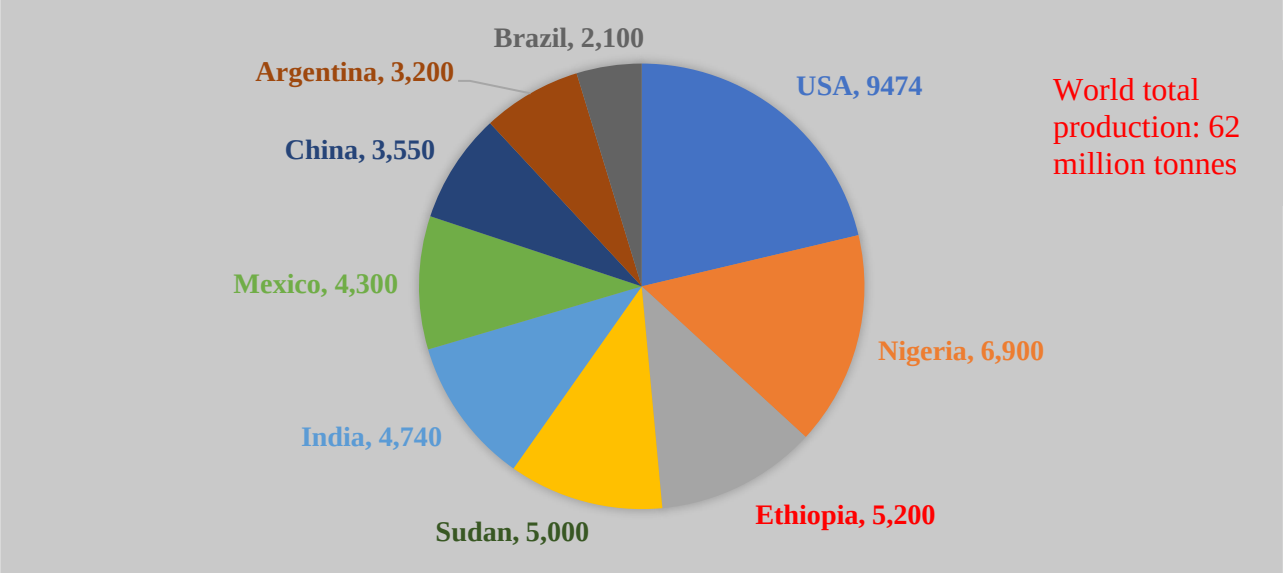
SORGHUM OUTLOOK REPORT – January to December 2020

Sorghum (*Sorghum bicolor)* also known as Jowar was originated in Africa and has since spread throughout the globe. Sorghum is a genus of about 25 species of flowering plants in the grass family Poaceae. Some of these species have grown as cereals for human consumption and some in pastures for animals. Global demand for sorghum increased dramatically between 2013 and 2015 when China began purchasing US sorghum crops to use as livestock feed as a substitute for domestically grown corn.

Globally, Sorghum production was 62 million tonnes in 2020. United States of America stands first in total production with 9.4 million tonnes (15%) followed by Nigeria, Ethiopia, Sudan. India ranks fifth in total sorghum production with 4.7 million tonnes. (USDA, 2020). Andhra Pradesh produced 3.25 lakh tonnes in an acreage of 1.11 lakh hectares and productivity of 2928 kg/hectare in 2020-21. (Third Advance Estimates, 2020-21, DES-AP).

Figure 1: India's position in production ('000 tonnes) of Sorghum in the World during 2020



Source: USDA, 2020.

Table 1 explains about the balance sheet of sorghum in India. The beginning stocks in the market year 2019 (begins from November) were 1.53 lakh tonnes and ending stocks were 3.94 lakh tonnes and the ending stocks in market year 2020 (begins from November) were 5.84 lakh tonnes. Total consumption in 2019-20 and 2020-21 was 45 lakh tonnes each. The ending stocks in market year 2021 (begins from November) were estimated as 4.34 lakh tonnes.

Table 1. Balance sheet of Sorghum in India (in '000 tonnes)

Sorghum	2019/2020	2020/2021	2021/2022*
Market Year Begins	**Nov 2019**	**Nov 2020**	**Nov 2021**
Beginning Stocks	153	394	584
Production	4772	4740	4600
MY Imports	0	0	0
TY Imports	0	0	0
Total Supply	4925	5134	5184
MY Exports	31	50	50
TY Exports	31	50	50
Feed and Residual	500	500	500
FSI Consumption	4000	4000	4200
Total Consumption	4500	4500	4700
Ending Stocks	394	584	434
Total Distribution	4925	5134	5184

*Forecast FSI: Food, Seed and Industrial
MY = Marketing Year, begins with the month listed at the top of each column.
TY = Trade Year, begins in October for all countries; TY 2021/22 = October 2021-September 2022.
Source: US Department of Agriculture (USDA)

Table 2 shows that the contribution of sorghum to total coarse cereals is 8.1 per cent in 2018-19. Over the decades, there is decline in cultivated area under sorghum since the farmers are shifting to more profitable cereals (rice, wheat, corn, and pulses) and competing crops (oilseeds and cotton). Also, Karnataka is the largest producer contributing 26 per cent of the total production of sorghum followed by Maharashtra (25%), Rajasthan (14%). Andhra Pradesh contributes 7 per cent to total sorghum production.

Table 2: Area and production of major Sorghum producing states (Area- lakh ha, production-lakh tonnes, Yield-kg/hectare)

States	1990-91		2000-01		2010-2011		2018-19			Total coarse cereals production	%share (2018-19)
	A	P	A	P	A	P	A	P	Y		
Karnataka	21.55	13.53	17.82	15.47	12.43	14.67	9.43	8.92	1475	55.4	16.1
Maharashtra	63.31	59.48	50.94	39.88	40.6	34.52	16.32	8.72	945	32.2	27.1
Rajasthan	9.31	5.18	6.74	1.35	7.27	5.09	5.64	4.7	2189	70.6	6.7
Tamil Nadu	5.41	5.49	3.31	3.06	2.44	2.47	3.86	4.64	535	33.8	13.7
Andhra Pradesh	11.9	8.51	6.77	6.19	2.54	3.07	1.35	3.00	2230	19.9	15.1
Uttar Pradesh	5.27	4.93	3.47	3.3	2.01	2.07	1.47	1.83	1204	39.5	4.6
Madhya Pradesh	16.48	14.9	6.38	4.6	4.32	6.16	0.75	1.64	1247	50.2	3.3
Other states	10.34	4.79	3.13	1.45	2.21	1.98	2.11	1.3	616	127.9	1.0
India	**143.57**	**116.8**	**98.56**	**75.29**	**73.82**	**70.03**	**40.93**	**34.75**	**849**	**429.5**	**8.1**

Source: Indiastat, 2020.

Table 3: Area, production and yield of Sorghum in Andhra Pradesh

Year	Area ('000 ha)	Production ('000 tonnes)	Yield (Kg/ha)
2010-11	254	307	1211
2015-16	174	357	2049
2018-19	135	300	2230
2019-20	115	389	2510
2020-21*	111	325	2928

** Third Advance estimates, 2020-21 Source: www.apagrisnet.gov.in*

Table 3 shows that, the sorghum acreage in Andhra Pradesh before bifurcation was 2.54 lakh hectares which has come down to 1.11 lakh hectares in 2020-21 and production has been increased from 3.07 to 3.25 lakh tonnes during 2010-11 to 2020-21, which can be attributed to increased productivity levels due to hybrids and are been grown under irrigation in some areas of Guntur district of Andhra Pradesh.

Table 4: District wise area and production of Sorghum in Andhra Pradesh (2019-20)

District	Area ('000 ha)	Position	Production ('000 tonnes)	Position	Yield (kg/ha)	Position
Guntur	40	2	240	1	5962	1
Kurnool	55	1	94	2	1705	2
Kadapa	20	4	25	3	1300	4
Ananthapuram	30	3	19	4	642	6
Prakasam	8	5	7	5	821	5
Nellore	1	6	1	6	1444	3
Other districts	1		3			
Andhra Pradesh	**155**		**389**		**2510**	

Source: apagrisnet.gov.in

Table 4 shows that in Andhra Pradesh, sorghum production is highest in Guntur district with 2.4 lakh tonnes in 0.4 lakh hectares followed by Kurnool and Kadapa. The productivity of sorghum is highest in the Guntur district (grown as ID crop) with 5962 kg/ha followed by Kurnool and Nellore.

The seasonal indices of arrivals and prices sorghum from major markets of Kurnool district (Allagadda, Alur, Banaganapalli, Koilkunta, Nandyala) are presented in Table 5 and Figure 2. In April, 2020 the arrivals and prices are 0 as the markets are closed due to lockdown.

Table 5: Seasonal indices of Sorghum arrivals and prices in major markets of Kurnool district in 2020

Months	Arrivals	Price
January	226.34	113.69
February	87.60	110.18
March	36.61	110.80
April	0.00	0.00
May	79.94	108.93
June	91.79	107.07
July	79.66	107.42
August	123.46	104.89
September	115.64	108.13
October	119.67	110.89
November	115.68	111.02
December	123.62	106.98

Source: Data obtained from AMCs of major markets of Kurnool district

Figure 2: Trends in Sorghum arrivals and prices in major markets of Kurnool district in 2020

Source: Data obtained from AMCs of major markets of Kurnool district

Sorghum cultivation is declining, with acreage shifting to more profitable cereals (rice, wheat, corn, and pulses) and competing crops (oilseeds and cotton). Over the years, the human consumption was also declined due to the availability of fine cereals through Public Distribution System (PDS). Sorghum and millet production, mostly unirrigated, fluctuates yearly depending on the monsoon's performance. These crops have not experienced any major productivity-enhancing technological (varietal or agronomic) breakthroughs, nor increased

demand for industrial or commercial usage. With rising supplies of subsidized rice and wheat through India's food security programs, consumers are shifting away from sorghum and millet, eroding these crops' profitability.

Traditionally, sorghum and other coarse grains were the staple diet for rural and lower-income, semi-urban households in India. However, with the Green Revolution's production gains and food security programs' subsidized rice and wheat, the other coarse grains are being replaced in food baskets. However, there is increased consumption of sorghum and millet (i.e., nutri-cereals) among a small population of 'health conscious,' urban consumers seeking to incorporate into their diets high-fiber and nutrient rich grains.

India exports small quantities of feed grade sorghum and barley to neighbouring countries and the Middle East.

Under these circumstances, the Agricultural Market Intelligence Centre, ANGRAU expects that Groundnut is likely to trade in the price range between Rs. 1850-2100 per quintal in April and May 2021.

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