

Current Status of Food Security in India

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ABSTRACT

Food security is indications that show the level of growth and development of people as well as country. The present paper discusses about the status of food security of India. The year wise food grains production, agriculture GDP, global hunger index, poverty line, undernourishment and food deficit observed are received. The data collected from various agriculture information sources. The figures of observations were utilized for the study from 2000-2018 years. The food grains production of 285.20 million tonnes was reported with an area of 123.22 million hectare in 2018-19 year. The agriculture GDP of 17.39% was obtained in 2018-19 year. 23% percent of populations were observed in undernourishment in 2004-05 year. 14.8% percent of populations were observed in undernourishment in 2018-19 year. 37.2% populations were reported under poverty line in 2005-06 year and 21.9% populations were recorded under poverty line in 2017-18 year. The GHI value of 38.2% was observed in 2017 year and of 31.1% was recorded in 2018 year. The food deficit of 152 kilocalorie was obtained in 2006-07 year and food deficit of 105 kilocalorie was obtained in 2018-19 year. The government food scheme and the programme are outreached to poor people and remote villages, establishment of food rehabilitation centre in state, district and block to serve food at low price and encouraging farmers for more crop yield. These aspects will improve food security of India.

Keywords: Food grains production, GDP, Undernourishment, Poverty line, Global hunger index, Food deficit

INTRODUCTION

Food security is the positive aspect of the world that aims to produce food for livelihood, mitigation of malnutrition, upliftment of nutrient intake with elevated population, mitigation of hidden hunger and improving

share of agriculture GDP, Food security programme initiated in 16 October 1945 by FAO and it was started in India in 2007. Food security is monitored in India by the Department of food and public distribution under the ministry of consumer affairs.

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The government of India initiated many food security schemes to provide food in villages, poor family, school, labours and pregnant woman that is brought under essential commodities act, 1955, Integrated child development scheme, 1997; Mid day meal, 1996-97 & 2004; National food for work programme 2000; Antyodaya Anna Yojana 2000; Sampurna Gramin Rozgar Yojana 2001; National rural employment guarantee act 2005; and in National food security mission 2007. The government focused for thriving food security to improve food grain production with science and technology. The scientists, researchers, university, professors, institutes and directorates develop high yield varieties (HYVs) food security. The scientists, researchers, universities, institutes and directorates released many high yielding varieties, hybrids of agriculture and horticultural crops to food security. These high yielding varieties or hybrids of agriculture and horticultural crops were released for country to produce sufficient food.

The goal of the government is to make country of food self sufficient for providing food grains to Indian populations and to overcome undernourishment and abnormal health. The aim of this study is to determine the transformation of food grains production, to determine the nutrient intake, to determine mitigation of hunger and malnutrition. Catherine and Jose (2018) reported area under cultivation, production and yield of food grains production. The department of agriculture cooperation & farmers welfare has published area under cultivation, production and yield of food grains (Annual report, 2017). Maheshwar and Biswajit (2018) studied food security programme of India. The government of India reported the national nutrition strategy. They discussed below poverty line, national nutrition mission and severe acute malnutrition (Niti Aayog, 2017). Srivastava and Ramesh (2017) reviewed the calorie intake transitions in households of India. Various eminent economists have stated the topic of food deficit and its implications. The food deficit measures the undernourishment in

kilocalories (Inndex project, 2018). The government of India studied the nutrient intake of several years (NSSO, 2012). The global food policy discussed (Global hunger index methodology and Global hunger index severity scale (Global Hunger Index, 2018). Purnima *et al.* (2008) reported hunger index score of India. The planning commission mentioned the share of agriculture Gross Domestic Product (GDP) of India (Statistics times, 2019). Lathi and Parag (2010) studied the concepts, realities and innovation of food security of India. With this literature, the following objectives taken for experiment i.e.,

- 1) Estimation of Year wise food grains production
- 2) Estimation of Year wise agriculture Gross Domestic Product (GDP)
- 3) Estimation of Year wise undernourishment, food deficit, Poverty line and Global Hunger index

MATERIALS AND METHODS

The figure of food grains production, global hunger index score, poverty line (% of population), share (%) of GDP constant price, food deficit kilocalorie per person per day and undernourishment (% of population) compiled with different agriculture information sources. The raw data collected from 2000 to 2018 years. The observation data tabulated from 2000-2009 and from 2010-2018.

RESULTS AND DISCUSSION

1) Estimation of Year wise food grains production

The data of cultivation areas and production of food grains showed in Table 1 and Fig. 1. Every year variable production was recorded with an different areas. The range of production areas 121.05-129.23 million hectares and the production 174.78-285.20 million tonnes were obtained from 2000-2018 years in India. The food grains production of 285.20 million tonnes was reported with an area of 123.22 million hectare in 2018-19 year. The good food grains production are because of proper applications of agriculture inputs, encouraging farmers by central & state

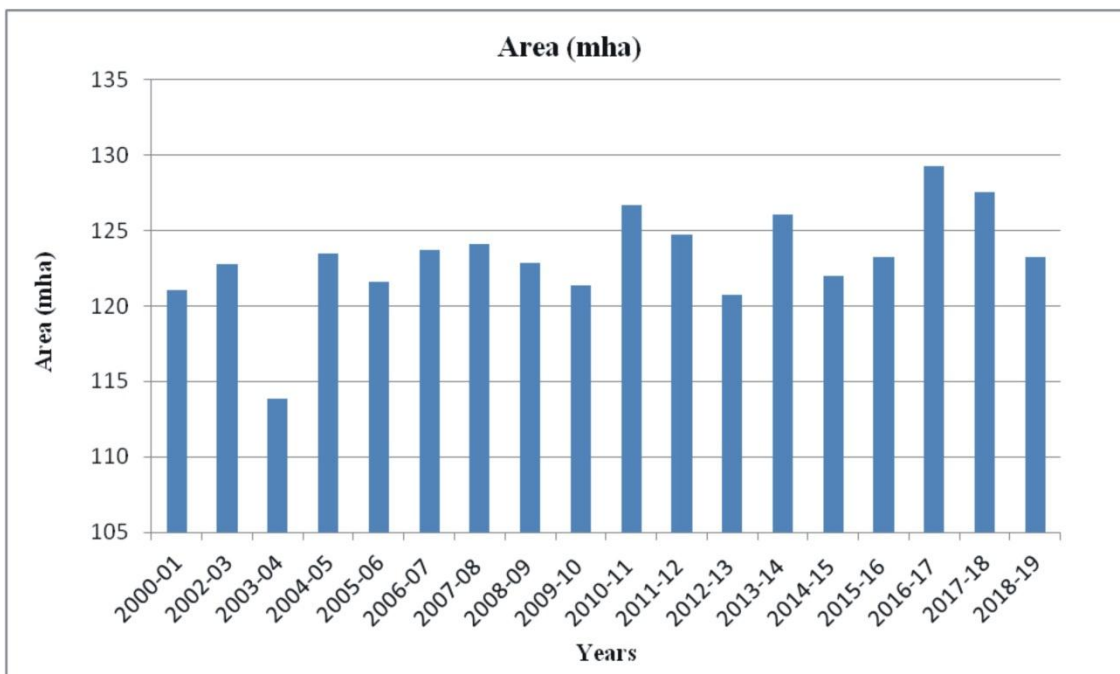
government, providing subsidy in agriculture inputs to farmers, offering benefit of schemes to farmers, offering benefits o schemes to farmers, connecting farmers to gilt market, providing training to farmers for crops and providing good Minimum support price (MSP) to farmers for doubling income. The department of economics and statistics,

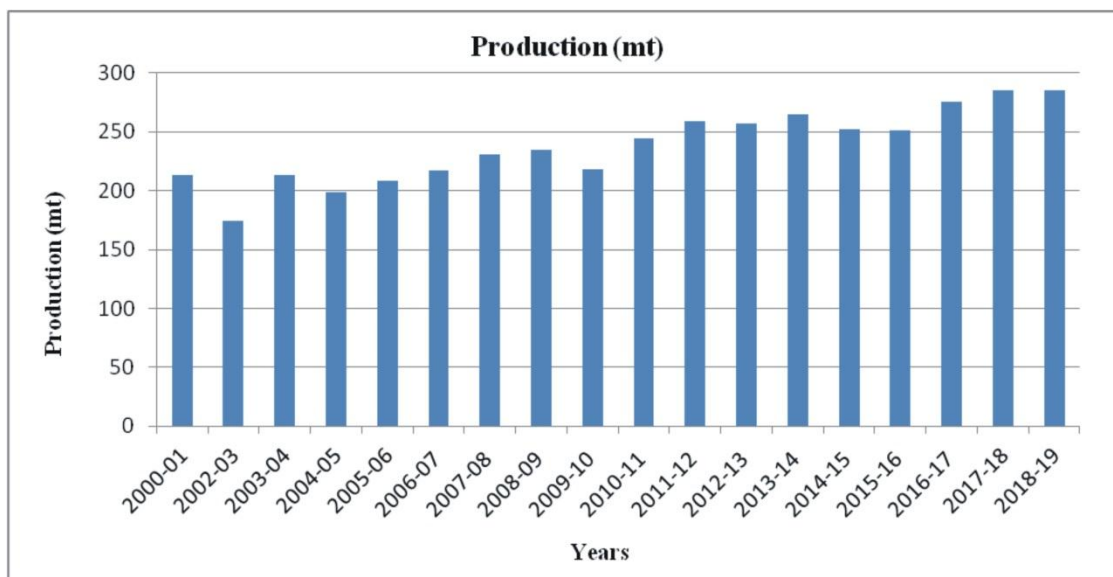
Bangalore estimated the food grains production year wise of India as well as Karnataka (DES, 2018). The Hindu highlighted the food grains production of India 2017-18 and 2018-19 (The Hindu, 2018). The department of agriculture and cooperation estimated food grains production year wise in India (Agriculture Statistics, 2014).

Table 1: Area under Cultivation, Production and Yield of Total Food Grain Production in India from 2005-06 to 2018-19

Year	Area	Production	Year	Area	Production
	(million hectares)	(million tonnes)		(million hectares)	(million tonnes)
2000-01	121.05	212.85	2010-11	126.67	244.49
2002-03	122.77	174.78	2011-12	124.75	259.29
2003-04	113.87	213.19	2012-13	120.70	257.13
2004-05	123.45	198.36	2013-14	126.04	265.04
2005-06	121.60	208.60	2014-15	122.00	252.02
2006-07	123.70	217.28	2015-16	123.21	251.57
2007-08	124.06	230.78	2016-17	129.23	275.11
2008-09	122.83	234.47	2017-18	127.57	284.83
2009-10	121.33	218.11	2018-19	123.22	285.20

Source: RBI Annual Report 2017-18; The Times of India 2018; The Hindu 2018





2) Estimation of Year wise agriculture Gross Domestic Product (GDP)

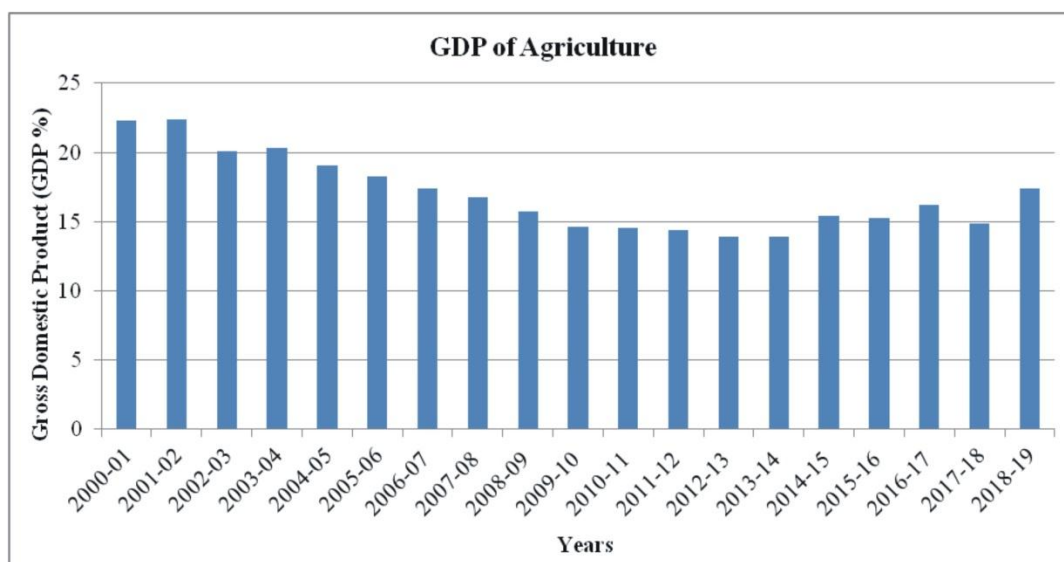
The data of agriculture GDP with constant price depicted in Table 2 and fig. 2. The range of agriculture GDP 13.94-22.42% was obtained in 2000-2018 year. The agriculture GDP of 17.39% 2018-19 was obtained in 2017-18. The good food grains production and allied sectors progresses the agriculture GDP. The elevation of agriculture goods, implementation of industries, business and

rising of services progresses the agriculture GDP of India. The economic survey discussed the gross domestic product year wise of agriculture and allied sectors (CSO, 2017). Madhusudhan (2015) communicated agriculture GDP of 2013-14. The agriculture provides employment over 60% populations and 70% rural population depends on agriculture. The good and services promotes the growth of agriculture GDP (Kekane, 2013).

Table 2: Share of Agriculture GDP % (Constant Price)

Year	% GDP	Year	% GDP
2000-01	22.31	2010-11	14.59
2001-02	22.42	2011-12	14.37
2002-03	20.13	2012-13	13.95
2003-04	20.32	2013-14	13.94
2004-05	19.03	2014-15	15.40
2005-06	18.27	2015-16	15.26
2006-07	17.37	2016-17	16.20
2007-08	16.81	2017-18	14.89
2008-09	15.77	2018-19	17.39
2009-10	14.64		

Source: World Bank Group (Data World Bank Group)



3) Estimation of Year wise Undernourishment, Poverty line, Global Hunger index and food deficit

3.1) Estimation of Year wise Undernourishment (% of population)

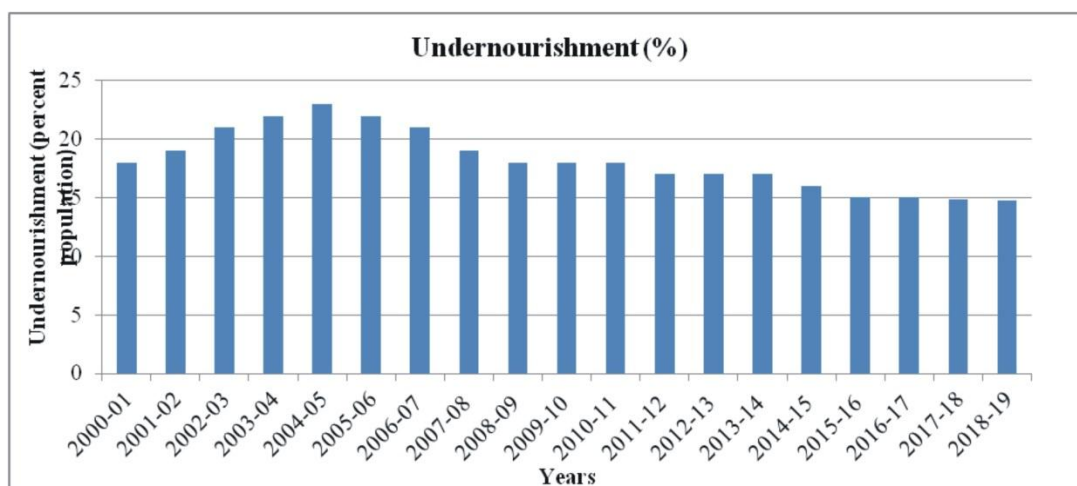
The data of percent of population undernourishment showed in Table 3 and fig. 3. The undernourishment ranges of 14.8-23% were observed in 2000-2018 year. 23% percent of populations were observed in undernourishment in 2004-05 year. 14.8% percent of populations were observed in undernourishment in 2018-19 year. The lower

undernourishment found because of achieving benefit of scheme under National food security mission, attaining complete diet from ration hoop, achieving domestic facility from government, eradicating middle men from National food security mission for people health development, improving of rural facility and improvement of food grains production & allied sectors. Srivastava and Ramesh (2017) observed undernourishment year wise of population. The USDA economic department observed percent of population of food security of 2017 (Birgit & Karen, 2017).

Table 3: Undernourishment (% of Population)

Years	Undernourishment (% of population)	Years	Undernourishment (% of population)
2000-01	18	2010-11	18
2001-02	19	2011-12	17
2002-03	21	2012-13	17
2003-04	22	2013-14	17
2004-05	23	2014-15	16
2005-06	22	2015-16	15.2
2006-07	21	2016-17	15
2007-08	19	2017-18	14.9
2008-09	18	2018-19	14.8
2009-10	18		

Source: The State of food security and nutrition in the world 2017, www.fao.org; Hunger in India food banking network, www.india food banking.org/hunger



3.2) Estimation of Year wise Poverty line (% of population)

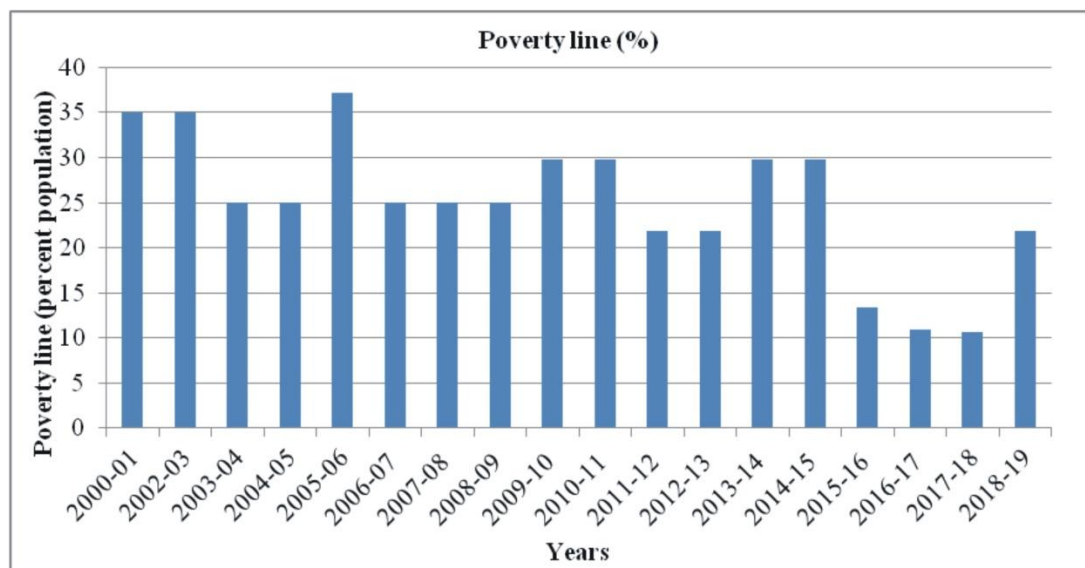
The figure of poverty line showed in Table 4 and fig. 4. The poverty line ranges of 13.4-37.2% were observed in 2000-2018 years. 37.2% populations were reported under poverty line in 2005-06 year and 21.9% populations were recorded under poverty line in 2017-18 year. The rural electrification, increasing daily wages of people with

government scheme, progress per capita income of people, improvement of standard of living, providing loan to people under government scheme and establishment of macro or micro scale business. The department of statistics estimated percent poverty line year wise (CSO, 2018). The government of India estimated rural and urban poverty line year wise and total poverty line year wise (Planning commission, 2014).

Table 4: Percent of Population Poverty Line

Years	percent of population poverty line	Years	percent of population poverty line
2000-01	35	2010-11	29.8
2002-03	35	2011-12	21.9
2003-04	25	2012-13	21.9
2004-05	25	2013-14	29.8
2005-06	37.2	2014-15	29.8
2006-07	25	2015-16	13.4
2007-08	25	2016-17	29.8
2008-09	25	2017-18	29.8
2009-10	29.8	2018-19	21.9

Source: Allcountries.org/world fact, world data bank; India-population below poverty line-historical data graphs per year (www.indexundi.com); poverty and shared prosperity 2018; www.worldbank.org



3.3) Estimation of Year wise Global Hunger index

The data of global hunger index showed in Table 5 and fig. 5. The GHI ranges of 17.8-38.2% were obtained in 2000-2018 years. The GHI value is determined through GHI severity scale. The GHI severity scale is prepared by UN agencies such as FAO, UNICEF, WHO and World Bank. The GHI value of 38.2% was observed in 2017 year and of 31.1% was recorded in 2018 year. The hunger problem in India is because of lack of awareness of food

nutrition department; people are received one meal a day because of low daily wages. The department of food and health does not provide food nutrition programme regular in remote rural region, scarcity of food rehabilitation centre for poor people and improper categorization & distribution of food from ration shop. Purnima et al. (2008) observed global hunger index score of 2008. The global food policy reported global hunger index score of India (IFPRI, 2017).

Table 5: Global hunger index

Years	GHI (%)	Years	GHI (%)
2000-01	38.2	2010-11	32.2
2001-02	24.2	2011-12	23.7
2002-03	38.8	2012-13	22.9
2003-04	25.73	2013-14	21.3
2004-05	21.2	2014-15	17.8
2005-06	24	2015-16	29
2006-07	22.2	2016-17	28.5
2007-08	25.03	2017-18	38.2
2008-09	23.7	2018-19	31.1
2009-10	23.9		

Source: GHI, www.im4change.org/hunger-overview-40 (hunger overview- im4change-page-2); The state of food security and nutrition in the world, www.fao.org
Data on above indicators are mainly obtained from UN agencies such as FAO, UNICEF, WHO and World Bank.

GHI Severity Scale (as per GHI 2017 Report which is different from GHI 2014 Scale)				
≤ 9.9 Low	10.0-19.9 Moderate	20.0-34.9 Serious	35.0-49.9 Alarming	50.0 ≤ Extremely Alarming

Source: Global hunger index, 2018



3.4) Estimation of Year wise Food deficit

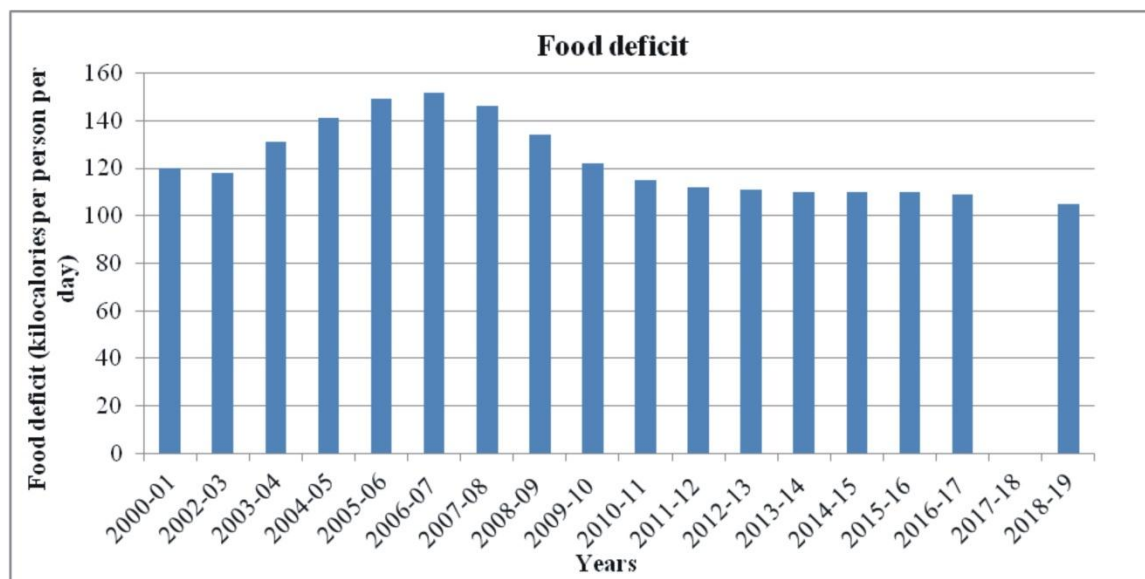
The figures of food deficit depicted in Table 6 and fig. 6. The ranges of food deficit 105-152 kilocalories were obtained in 2000-2018 years. The food deficit of 152 kilocalorie was obtained in 2006-07 year and food deficit of 105 kilocalorie was obtained in 2018-19 year. The food deficit was lesser compare to 2006-07 and 2016-17 year. The daily wages of worker are low in India. The public servant is not provided benefit of government nutrition scheme to rural populations. The improper distributions of meal from ration shop. The limited macro and micro scale industries that

provide employment to people. The bank is not sanctioned loan to extremely poor and poor people for establishing business. The government is very less attention towards poor people. The government should establish food rehabilitation centre in every state and district with low price meal. So that, the poor and extremely poor people will get food with low price. Hannah *et al.* (2018) abstracted that the productivity of the crops should be increased for eradicating food deficit. The farm crisis discussed year wise energy intake of rural and urban persons of India (Economic survey, 2017-18).

Table 6: Food deficit

Year	Food Deficit (kilocalories per person per day)	Year	Food Deficit (kilocalories per person per day)
2000-01	120	2010-11	115
2002-03	118	2011-12	112
2003-04	131	2012-13	111
2004-05	141	2013-14	110
2005-06	149	2014-15	110
2006-07	152	2015-16	110
2007-08	146	2016-17	109
2008-09	134	2017-18	
2009-10	122	2018-19	105

Source: World Bank Data



CONCLUSION

Food security is fundamental inherent of the country that progresses food grains production, overcome malnutrition, improve agriculture GDP, overcome poverty line and hunger index score. The progress of food grains production because of farmers' encouragement and supplying scheme to farmers. The Good and Services growth rate are increased the agriculture GDP %. The proper awareness of diet, proper dissemination of government programme & schemes and proper food supply that improve the role of food security.

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