ISSN: 2278-4632
Vol-10 Issue-5 No. 4 May 2020

AGRICULTURAL STATUS OF TOP TEN ECONOMIES IN THE WORLD

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Introduction:

Agriculture is important not only for the supply food and fiber for lives but also for the availability of raw materials to industry. It is not only an occupation for rural people but also a way of survival. Agriculture is culture of human being, most customs and cultures of human revolve around agriculture in world. It plays a vital role in economic growth of any nation. Agriculture and allied activities are consists in primary sector of an economy which contributes a significant share in employment, foodgrain production, export, input to industry and other sectors and Gross Domestic Product (GDP). Many developing countries in the world have agrarian; agriculture is backbone of these countries. Without a sound agricultural base any nation will find it difficult to sustain its economic development. Improvements in agriculture are fundamental to self sufficiency in foodgrain, poverty alleviation, employment generation, environment protection and overall sustainable development of the nation. This paper attempts to assess agricultural scenario of top ten economies on the basis of total agricultural area, arable area, irrigated area as well as average size of land. Furthermore, study also evaluates the agriculture share in GDP and rural population depends upon agriculture in the selected economies of the world.

Objectives of the Present Study:

Following are the main objectives of the present study.

- To assess the present position of top ten economies in the world.
- To study the agriculture scenario of the top ten economies in the world.
- To study the comparative agriculture status of selected economies in the world.
- To study trends in area, land use pattern, production, cropping pattern, average land size of top economies of the world.
- To study the employment, share in GDP and export from agriculture of top ten economies.

Database and Research Methodology:

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Present study is based on secondary data which was collected from books, journal, and reports of international institutions. The collected secondary data was processed with the help of computer by using excel and SPSS to analysis the top ten economies in the world. The statistical tools such as percentage, growth rate, averages, correlation and S.D. etc. are used for analysis. The study is restricted to top ten economies on basis of nominal GDP in the world.

World Agriculture Scenario:

US, Canada and Brazil are in the Americas. Germany, UK, France and Italy are economically largest countries are located in Europe, while China, Japan and India these three economies are located in Asia. The US is world largest economy with $ 22.20 Trillion GDP. US have 4.25% world population with third rank. In GDP per capita, US ranks 10th in the world and it are 6 times more than China and 30 times more than India. The fast changing service sector of US contributes 80% to its GDP. Agriculture sector contributes 0.9% and 18% rural population is engaged in agriculture sector in 2019.

It plays vital role in world economic development. It provides food, employment and income to their rural population. The low productivity, growing population agriculture continues to expand into fragmentation and subdivision of land. Total 67% world's population is engaged in agriculture and it contributes 39% world GDP and that 43 % of all exports consist of agricultural goods. About a-fourth of earth's terrestrial surface is now under cultivation with more land converted to crop production. About 90% of land is found in Latin America and sub Saharan Africa, Congo, Angola, Sudan, Argentina, Colombia and Bolivia have leading countries in land areas. The annual growth rate of agricultural production has been observed between 2% to 4% in last five decades. The agriculture sector has counted for only 2.9% of increase in GDP while share of industrial sector and services sector accounted about 25.3% and 71.8% respectively in the world economy. The highest agriculture growth rate was observed in Africa (14%) followed by Latin America (5.9%) and Asia (5%), while less than 2% agriculture growth rate was in Europe and US.

China is the leading rice produce country in the world. In terms of total production, the US is third in wheat and first in corn and soybeans. Africa and Asia especially India and Nigeria are the leading millet producing countries. US is capitalist country while it is highest agriculture goods export country followed by Netherlands, Germany, France and Brazil. These are the amongst world's top ten economies except Netherlands. Netherlands is small country, it produce

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high value of flowers, live plants and vegetables especially tomato and chilies. It is most supplier of tomato and chilies as we as flowers and live plants to the world. Half of the global export of Corn as well as Soybeans and 18% wheat has come from US and 51% and 35% share of Palm Oil and rice has export by Indonesia and Thailand respectively to the world economy.

Table 1 Land use Pattern of Top Ten Countries in the World 2019

Sr. No	Country	Area km^2	Population Crore (% to World)	GDP % Agril	#Agriculture land % to land Area	#Arable Land % of Land Area	# % Irrigated Land to Agri. Land	#Arable Land per Person/ha	*% Rural Population
	1	2	3	4	5	6	7	8	9
1	United States	93,72,610 (6.1)	33.05 (4.25)	0.9	44.4	16.6	5.5	0.47	18
2	China	97,06,961 (6.3)	143.80 (18.47)	7.2	56.2	12.7	10.5	0.09	41
3	Japan	3,77,930 (0.2)	12.65 (1.62)	1.2	12.3	11.5	34.8	0.03	08
4	Germany	3,57,114 (0.2)	8.37 (1.07)	0.8	47.7	33.7	2.7	0.14	23
5	India	32,87,590 (2.4)	137.67 (17.7)	14.6	60.4	52.6	36.8	0.12	66
6	United Kingdom	2,42,900 (0.2)	6.78 (0.87)	0.6	71.7	24.9	0.3	0.09	17
7	France	5, 51,695 (0.4)	6.52 (0.84)	1.6	52.4	33.5	4.9	0.27	20
8	Italy	3,01,336 (0.2)	6.04 (0.78)	1.9	43.2	22.4	19.1	0.11	30
9	Brazil	85,15,767 (5.6)	21.22 (2.73)	4.4	33.9	9.7	1.6	0.39	13
10	Canada	99,84,670 (6.1)	3.76 (0.48)	1.7	06.9	4.8	1.4	1.21	19
	World	51,00,72,000	734.62 (100)	3.4	37.4	11.1	NA	0.19	45

Sources: https:data.worldbank.org
IMF: World Economic Outlook Database April 2019
UN: National Accounts Main Aggregates Database
#Figures in bracket ( ) indicate % to world total
#- Data 2016, * -Data 2018

Russia (1,70,98,242 km^2) is largest country in world by area. It total area is 11 % of world landmass and it is near about double than US. US, Canada, China and Brazil are the largest countries by area among top ten economies, they holds more than 5% world's area each. India is 7^{th} largest country by area in world. It means US, Canada, China, Brazil and India holds one-fourth area of the world; while France, Japan, Germany, UK and Italy are aggregately hold only 1.2 % world's area. Japan, Germany, UK and Italy small countries their area is slightly larger than area of Maharashtra state. It clearly indicates that geographical area is not single factor responsible for largest economy in the world. US holding 6.1 % world's area and it ranked third with total area of 93,72,610 km^2 . It is slightly smaller (by about 4 lakh 65 thousand km^2)

ISSN: 2278-4632
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than China and Canada (by about 7 lakh 10 thousand km^2) while smaller than Brazil. Its geographical area is covered by 93.24 % of land and remaining 6.76 % by water. Out of total land area, 44.4 % is agricultural land, only 16.6% and 5.5 % land is arable and irrigated respectively in US. Total 18 % population is rural population which contributes 0.9% to US GDP. Per capita land holding was observed 0.44 hectare in US.

The world population is reached at 7.4 billion people as of March 2020. It has experienced continuous growth. China is most populous county followed by India in the world. China and India having 36.2 % world population where as US is largest economy with 4.25 % world population. These three most populous countries are holding about 40% of world population. Canada is highest area country with lowest population of 3.76 crore in top ten economies. UK, France, Italy are having population about 6 crore while Brazil have 21.22 core population followed by Japan (12.65 crore) and Germany (8.37 crore) have slightly more populous country. Population of Japan is equal to Maharashtra state while Germany, UK, France, Italy small countries than Maharashtra state by population. Out of top ten economies Populations of five economies are less or equal to Maharashtra state. World population is currently growing by around 1.05 % per year. Population growth rate in all the top economies are less than world average accept Japan. Highest population growth rate was observed in Japan (1.62%) followed by India and Canada in top ten economies on one side and on the other side population of China, Germany, France and Italy is growing by less than 0.5 %. Population of top ten countries is growing by less than one percent except Japan, even declined trend is observed in Italy. The correlation between total population and rural population was observed high positive (0.833) while correlation between GDP and rural population was less than moderate positive (0.028). It indicates that the increasing population in burden on rural area and it eats increasing GDP.

The contribution of agriculture sector to total GDP of top ten economies is less as compare to other developing countries in the world. India's agriculture sector contributes highest share (14.6 %) to its GDP followed by China (7.2%) and Brazil (4.4%). Only India, China and Brazil have higher contribution of agriculture sector to their GDP than world average and remaining top economies have less than 2% agriculture contribution to their GDP. The average share of agriculture sector to GDP is 3.4% in world. It was also observed that the United Kingdom's agriculture sector contributed lowest (0.6%) to its GDP.

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Out of total, average 45% of the world's people have live in rural area. Highest rural population was observed in India (66%) followed by China (41%) while remaining all top economies are below the world average (45%). Lowest rural population is located in Japan (8%) followed by Brazil (13%). In the US 98 % population is non agriculturalists among them 80% are live on 3.6 % area which is known as urban area. Per capita land holding size of world is 0.19 hectare while highest average land holding size was observed in Canada (1.21%) followed by US (0.47%) and lowest was observed in Japan (0.03%) followed by China and UK (0.09%). India's per capita land holding size is 0.12 hectare, which is less than world average. The average land holding size in Canada, Brazil, France and US is higher than world average while remaining top economies have less than world average land holding size.

In US, 39.15 crore acres are cropland, and that the number represents about one-fifth of its land mass. Cropland area are divided into fallow land 5.2 crore acres, ethanol or biodiesel production on 3.81 crore acres land, foodgrain production on 7.73 crore acres land and 12.74 crore acres are used for livestock feed.

The highest proportions of irrigated land was observed in India (36.8%) followed by Japan (34.8%), Italy (19.1%) and China (10.5%) while remaining US, UK, Canada, Brazil, Germany and France have less than 5% in top ten economies of the world. In numbers, 690.07 thousand square km of irrigated land is in China, which was highest in the world followed by India with 667 thousand square km and US with 264 thousand square km and Brazil 54 thousand square km while Italy (39.5 thousand square km), France (26 thousand square km), Japan (24.69 thousand square Canada (8.7 thousand square km), Germany (6.5 thousand square km), UK (0.95 thousand square km) have least irrigated land, especially UK rank 99th for irrigated land in the world. The correlation between agriculture lands to arable land was observed 0.645, while correlation of GDP to arable land and irrigated land was observed less than moderate negative 0.225 and 0.076. It means with increase in GDP, the arable land and irrigated land has declined. The standard Deviation of agriculture land, arable land and irrigated land was observed 20.3895, 14.4780 and 13.8384 respectively in top ten economies of the world.

Agricultural Production in World

Total wheat production of world is projected in March 2020 was 764.5 million metric tons (MMT), last year is was 731.5 MMT. China is highest wheat producer (133.6 MMT) followed by India (103.6 MMT) and US (52.3MMT) in the world. Russia is third largest wheat

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produce country in the world after China and India. US and Canada have fourth and fifth ranks respectively in wheat production in the world economy. It means China, India, US and Canada are more wheat produce country among top ten economies. World rice and milled production projected 499.3 MMT in March 2020; it is slightly less than last year. China (146.7MMT) and India (118MMT) have more than half of the world rice and milled production, while US produce only 5.9 MMT. The share of coarse grains in total grains is always more. This year, total 1402.7 MMT coarse grains production is projected in world it is 6.5 MMT more than 2018-19. US (361.2MMT) is largest coarse grain produce country followed by China (268.2MMT) and India (45.4MMT). Total foodgrain production of the world is projected 2666.5 MMT in March 2020, which is 1.3 % more than last year. China has 548.5MMT total foodgrain production followed by US (419.3MMT) and India (267MMT). It means 46.3 % world foodgrain production is produced by China, US and India; these are among the top ten economies in the world. Total 580.1 MMT and 121.6 MMT (metric tons to 480 lb bales) productions of oilseeds and cotton respectively projected in 2020, these are slightly less than 2019.Brazil is largest oilseeds producing country followed by US (107. 4MMT), China (62.6 MMT) and India (36.7MMT). Argentina (59.1MMT) is fourth largest oilseeds producing country in the world. India (29.5MMT) is highest cotton producing country in the world followed by China (27.3 MMT) and US (19.8 MMT), while these three countries produced 63% of world's cotton production. Brazil (13MMT) is fourth largest cotton produce country in the world.

Income of the farmers depends upon volume of production and prices in markets, like this agricultural production has determined by area under cultivation and yield rate. Productivity or yield rate is most important component of agriculture development. It is again determined by various inputs, soil fertility, irrigation, improved variety of seeds, fertilizers, weather condition etc.

World average yield of total coarse grain was 4150 kg per hectare in 2017. US and China have 10460 kg and 5960 kg per hectare yield of coarse grain respectively, while India has lowest yield of coarse grain which is less than world average. World's average cereals yield was observed 4074.18 per hectare/kg. in 2017. The highest cereals yield was 9050.70 kg per hectare in Belgium followed by Bahamas (8817.80kg) per hectare cereal yield in US was 8280.80kg followed by Germany and UK. Lowest yield was observed in India (3160.80kg) followed by Canada (4042.50 kg) in top ten countries of the world even it is less than world average.

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Conclusion: Agriculture is culture of human being, most customs and cultures of human revolve around agriculture in world. Half of the world population is engaged in agriculture where GDP per capita is very less, even though they are in the top ten economies. Share in GDP and employment opportunities in agriculture have been decreasing with increase in GDP. It indicates inequality in economy because increasing population is burden on rural economy and it eats increasing GDP. The developed countries are producing more agricultural production than developing countries though they are capitalist. The developing countries are neither superior in agriculture nor in industry and services.

References:

- Carin, Martiin (2013), 'The World Agricultural Economics: An Introduction', Routledge Publication, London.
- Khanna, Neha and Solanki, Praveen (2014), 'Role of Agriculture in the Global Economy', 2nd International Conference on Agricultural & Horticultural sciences, Radisson Blue Plaza Hotel, Hyderabad, India (03 -05 Feb. 2014).
- Maddison, Angus (2001), 'The World Economy: A Millennial Perspective', Development Centre of the Organization for Economic Cooperation and Development.
- Pingali, Prabhu L. and Evenson, Robert E. (2010), 'Handbook of Agricultural Economics', Elsevier Publication, North Holland.
- Ramge, Thomas and Schewohow, Jan with Adrian Garcia-Landa (2018), The Global Economy: As You've Never Seen it, The Experiment, New York.
- United States Department of agriculture (2020), 'World Agricultural Production', Foreign Agricultural Service, Circular Series WAP 3-20, Washington.
- US census Bureau (2019), How the US census Measures Poverty, US Census Bureau; Income, Poverty, and Health Insurance Coverage in the United States: (p. 18-19).
- IMF: World Economic Outlook Database April 2019
- UNDP, HDI Report 2019
- Hdr.undp.org
- https://ophi.org.uk
- https://www.downtoearth.org.in
- World.bymap.org-Irrigatedland

