

Dominance of Globalization on Farming Sector in Uttar Dinajpur District, West Bengal, India: A Critical Synthesis.

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Abstract:

The word 'Globalization' means International Integration (II). Globalization can greatly improve the role of agriculture as an engine of growth in low-income peoples' by making it possible for agriculture to grow considerably faster than domestic consumption. In the district, about 67% of the population still depend on agriculture for their livelihood, and out of 312,470 hectares of geographical areas of the district 272,564 hectares (i.e., 87.23%) area is under cultivation (**Census of India, 2011**). Uttar Dinajpur Krishi Vigyan Kendra (UBKVK) is vested with the responsibilities to bring forth agricultural vis-a-vis rural development in the rural blocks through its mandated activities on the training of practicing farmers, rural youth and extension functionaries, front line demonstration, and on farm adaptive trials to enhance the total production of the district as well as self-employment generation. Therefore, the present study analyses the dominance of globalization on agriculture in Uttar Dinajpur District. The statistical analysis of the data was carried out in an MS Excel sheet and maps are prepared in ArcGIS software (version 10.3.1). The main theme of this paper is to study the growth rate of production, enhanced cropped area, and enhanced irrigated area from 1981-2016 based on secondary information and impact on agriculture of globalization.

Keywords: Agriculture, Dominance, Enhanced, Globalization and Technology.

I. INTRODUCTION:

"Globalization" is most commonly applied to the economy of international markets and the various impacts it has on social and cultural life as well as agricultural depended families. The term globalization refers to the integration of economies of the world through uninhibited trade and financial flows, as through the mutual exchange of technology and knowledge. Globalization thus is a multidimensional concept in a multicultural and multi-layered society conveying different meanings to different people. Agricultural development has emerged as a distinctive field of research and acquired a central role in the theory and practice of agriculture development from the 1960s when it began with a stress on the community development approach; the pursuit of which has been following ever changing perspective on development over these years. In the district, presently globalization plays an important role in the agricultural sector. Accordingly, there have been concomitant changes in agricultural fields and approaches to farmer development. The current phase of globalization aims towards a uniform integrated production in agricultural sectors and supplying different crops to the global markets.

1.1 Globalization aspects

The main spirit of globalization is to believe that all people are equal and deserve equal rights and opportunities. Globalization is a fact today for the initial step of improved crop quality and quantity. It ensures strongly interrelated economic facts with agriculture. In this regard it has two aspects, like;

a. Positive aspects

- i. An indirect result of globalization is the improvement of agricultural infrastructure.
- ii. Due to globalization, it has become more modernized as new technology can quickly be adopted.
- iii. There have been signs of improvements in living standards in the farmer people as a result of agricultural growth and globalization.

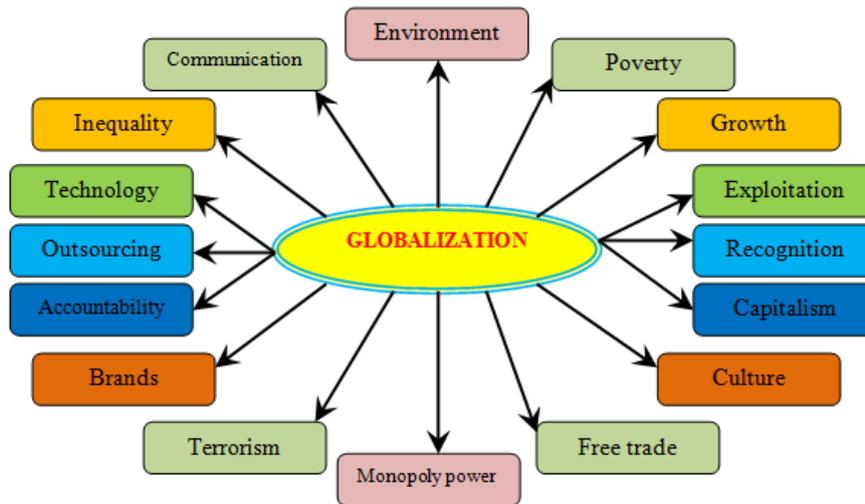


Fig. 1A: Different sector of Globalization
Source: Ghosh, 2016



Plate 1A: Positive result of globalization (a good result of globalization).

- iv. Consumers also profit from globalization. Products have become cheaper and can get new goods more quickly, especially agricultural modernization instruments (**Author's observation**).
- v. Globalization gives a larger market. Farmers can sell their agricultural products and make additional money and create new jobs (**plate 1A**).

b. Negative aspects

- i. Globalization has led to the agricultural sector spoiling. Due to large scale industrialization, urban area extension and water & air pollution have also increased. (**Author's field observation**).
- ii. International firms have exploited agricultural resources belonging to the district and led to land degradation.
- iii. Household property such as agricultural labour may be oppressed by huge production-based firms. These firms may moreover abuse natural resources and use them excessively.
- iv. Globalization causes joblessness in the agricultural sector because firms progress their factories to places where they can get cheaper labour (**District Human Development Report, 2010**).



Plate 1B: Negative result of globalization (create environmental pollution).

v. Lastly, human, animal, and plant diseases can increase extra rapidly through globalization for the use of the marvellous rate of chemical fertilizer & pesticides, smokes of tractors, and harvesters in agricultural fields (**plate 1B**).

II. REVIEW OF LITERATURE:

Bhattacharya, M. (ed.), 2004 in his book “*Globalization*” discuss the essential concepts and method of applying the globalization on agriculture and allied sectors. It also identifies in his book the framework of significance as well as the comparative profitability of the result of globalization.

Shivani, M., 2019 has shown in her paper “*The effects of globalization on India*” that the effects of globalization on India. It also focuses on the benefits of globalization and the challenges in her study area.

Ghosh, S., 2016 in his book “*Janaprasasan: Tatta o proyog*” considers the basic information and applying of globalization to different sectors.

Patjoshi, P.K., 2017 in his paper entitled “*A study on globalization & its impact on the Indian economy*” that the positive and negative effects of globalization have discussed. Moreover, he has chosen the annual growth rate of GDP for relating the trend in the study of globalization.

III. OBJECTIVES OF THE STUDY:

Present inquiries have specific as well as clear focus concentrating on population growth in the district and demand stable food security for the day-by-day increasing population. The development of agriculture is being given due importance by the government. The agriculture sector has been studied with the belief that they hold the largest share in development activity. Therefore, the major objectives of the inquiry can be pointed up as follows:

- 3.1. To assess how a farm implements.
- 3.2. To measure the enhancement of the cropped area.
- 3.3 To assess and study the growth rate of production.
- 3.4. To assess the expansion of the irrigated area.
- 3.5. Impact on agriculture in the district with the effects of globalization.

IV. A GEOGRAPHICAL OUTLOOK OF THE STUDY AREA:

Uttar Dinajpur District is occupying the northern position in the north part and it is part of West Bengal is the true representative of North Bengal. The district is located between 25° 17' 10'' and 26° 35' 15'' North latitudes and between 87° 48' 37'' and 88° 20' 10'' East longitudes with the shape of hen neck in the middle part to the north part (**fig. 1B**). The total area coverage of the district is 3,140 sq. km (**Census of India, 2011**). The whole district is divided into two sub-divisions namely; Raiganj and Islampur consisting of nine (9) C.D. Blocks i.e., covering 1,577 villages, 4 statutory towns, and 5 census towns (**fig. 1B**). The area has a mostly levelled landscape having slopes from north to the southern part. Normally, the district does not exit above 32 M above mean sea level and there are no mountains are found in the district.

Climatically, the district lies just outside the tropics and its climatic situation approximates more easterly. The cold weather sets in early November and continues until the end of February. Although in a normal year the days begin to be hot from about the 20th of February, the night remains cool till well into April and oppressive hot summer (38°C in May) and monsoon rainfall dry and cold winter season (15°C in January) one some of the tropical characteristics (**Strong, 1965**). River of the district is Nagar, Gamari, Mahananda, Chhiramati, and Tangan.

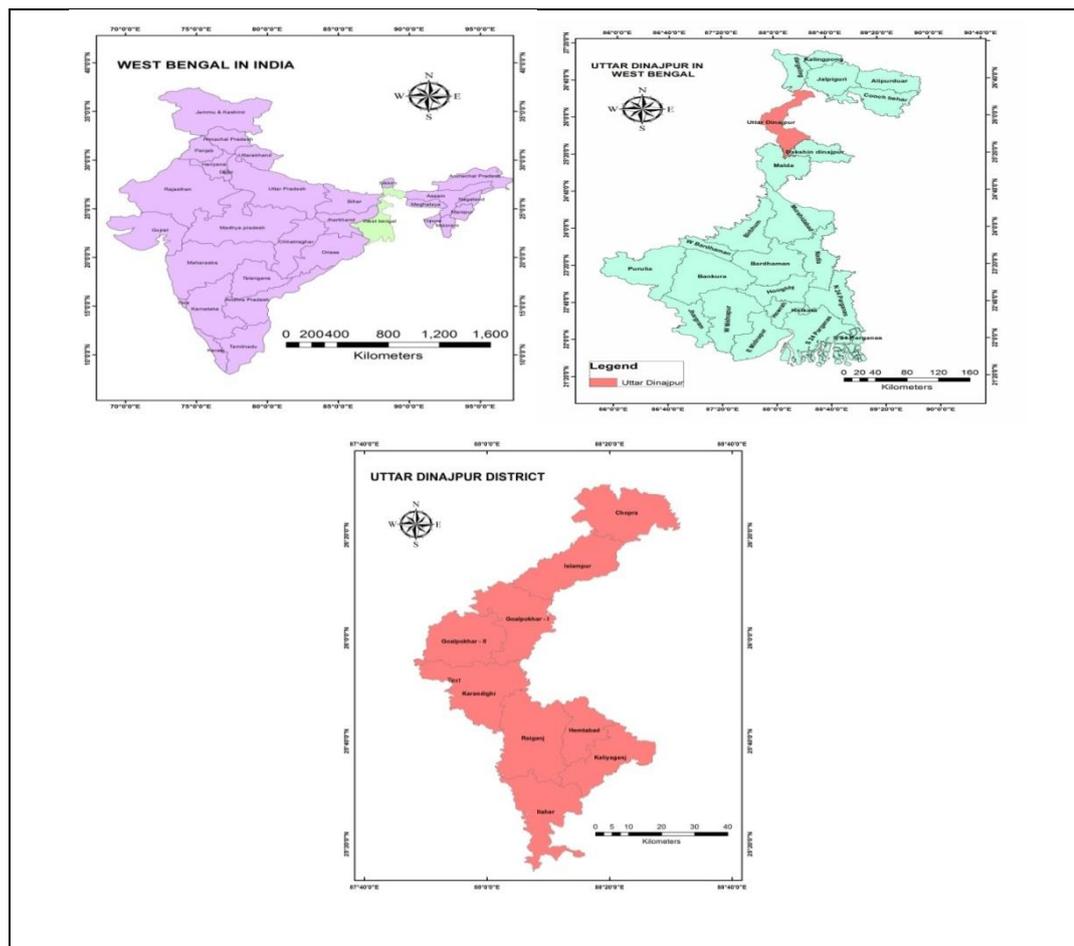


Fig.1B: Location map of the study area (Prepared by the author).

V. DATABASE AND METHODOLOGY:

The present study was undertaken by collecting data from different secondary sources. In the present study, an attempt has been made to analysis globalization and its dominance on agriculture in the district. The study has been conducted regarding the data related to the performance of farmers with new branded seeds, pesticides, and fertilizers i.e., farm implements. For this reason, the author conducted field observation and meet the farmers. Data related to the growth rate of production has been collected from secondary sources like; Principal of Agricultural Officer (PAO), Raiganj, Uttar Dinajpur, Office of the Bureau of Applied Economics & Statistics, Government of West Bengal, Karnojora, Uttar Dinajpur, and some aspect of productivity of crops in Uttar Dinajpur District have been tabulated, calculated and interpreted. Enhanced cropped area related data has been collected from the Horticulture Department, Raiganj, Uttar Dinajpur, and Directorate of Agriculture, Karnojora, Raiganj, Uttar Dinajpur. Data related to the expansion of irrigation areas in the district has been collected from Minor Irrigation Department, Jalasampad Bhawan, Karnojora, Uttar Dinajpur, and Assistant Engineering Agriculture Office, Karnojora, Uttar Dinajpur and Irrigation & Waterways Directorate, Karnojora, Uttar Dinajpur. The data collected from the period of 1981-2016 (35 years) and based on secondary information and the statistical analysis of the data was carried out in MS Excel sheet and maps are prepared in ArcGIS software (version 10.3.1).

VI. RESULTS AND DISCUSSION

Financially viable improvement is openly related to the growth of agriculture in the district. The different agricultural sector provides to people's employment opportunity. Uttar Dinajpur District has also been motivated to develop agriculture since the 1960s when the Green Revolution (GR) started in agriculture. Agriculture played a key role in our planned economy with its advantage of low investment and the base of industries. Globalization and its grades are as follows:

6.1 Farms implements

Before the Green Revolution (GR) farmers are used generally local timber plough, harrow, spade, weeding hook, sickle baskets, etc. in an agricultural operation. The local wood does not cost much and is prepared locally with the help of hardwood obtained from the jungle trees. The ploughs and harrows are pulled by the bullocks for preparing the agricultural field along with plough. Spade has various uses for digging purposes and others. In inter-culture operations spade has its significance after plough. However, the cultivators of their area use a weeding hook locally known as Khurpe. A weeding process on waterlogged paddy lands is performed by village female labours. To lift water from wells, a high height of baskets or Kunri with timber Latha and rope are used. And the carrying of crops and goods, bullock driven wooden carts are used in the study area.

The results of globalization on the above works by farmers are viewed easily and some changes in farm sector implements have occurred. Now-a-days iron plough, iron-weeding wheels, electric, diesel, and kerosene pump sets for irrigation, and modern developed sprayers, etc. are being used by the many cultivators in the district. Recently, for the mechanization of agricultural goods government has supplied tractors, harvesters to the farmers on either a loan basis or on subsidy. The use of tractors in ploughing land is increasing in the overall district. The traditional indigenous farm implements lack efficiency but modern tools have brought efficiency in agricultural operations like ploughing, weeding, sowing, harvesting, threshing, and transportation is efficiently performed by farmers.

6.2 Enhanced of crops area

During the primary stage of the Green Revolution (GR) the crop area does not change at high rates. For the effects of globalization crop areas increase day to day in the district.

Table 1: Growth of crops area 1981 to 2016
(Area '000 hectares)

Crops \ Years	1981	1991	2001	2011	2016
Rice	183.56	277.80	283.20	294.30	296.65
Wheat	17.36	28.00	37.50	38.93	53.33
Fibre (Jute, Mesta)	23.89	45.90	61.50	45.27	44.35
Pulses	21.28	22.60	9.10	6.44	6.01
Oil seeds	32.45	55.00	45.40	63.08	65.48
Miscellaneous crops	08.90	10.12	11.90	20.07	25.59
Total	287.44	439.42	448.60	468.09	491.41

Source: PAO, Uttar Dinajpur.

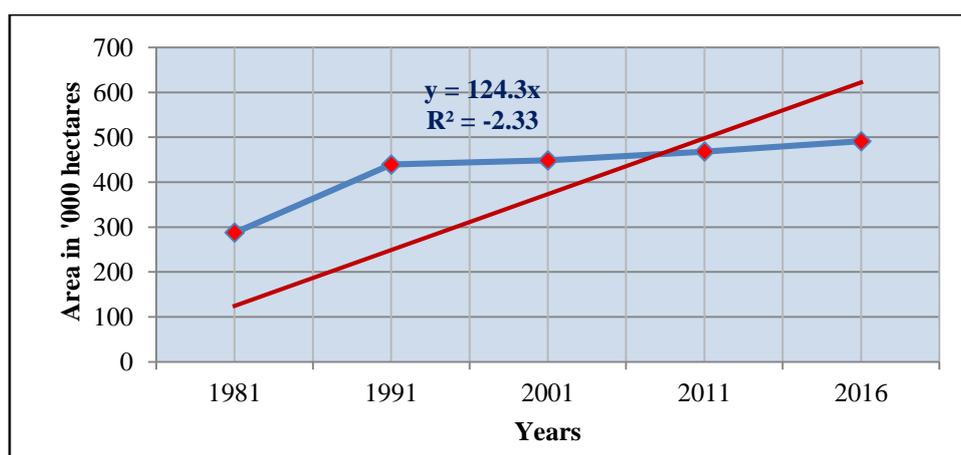


Fig. 1C: Growth of crops area 1981 to 2016

It is established that in 1981, the area of crops was 287.44 thousand hectares. But it has increased to 439.42 thousand hectares in 1991 and 448.60 thousand hectares in 2001 respectively. In 2011, the total area again increased to 468.09 thousand hectares and in 2016 it again increased to 491.41 thousand hectares. The total net increased area of crops is 157.41 thousand hectares over the study period (table 1 & fig. 1C). Because globalization helps provide the availability of irrigation facilities in crop areas, the use of High Yield Varieties

(HYV) seeds of farmers, uses of chemical fertilizer, and pesticides help to increase the total crop area. Not only that, the local seed farms and different governmental policies and financial subsidies by the local bank in the district also helpful to the expansion of crop areas of farmers.

6.3 Growth of production

In recent times agricultural growth with stability has been a matter of concern in the strategy of agricultural development in the district. It is being contended more than 60 percent of cultivator's families that the nineties and twenties had noted high rates of growth in agricultural production. It is further argued that during the last three decades irrigation has increased two-fold or three-fold which is expected not only to increase the level of production but also to bring about extensive stability in it. Globalization is helpful to provide various multi-branded seeds and fertilizers which supply by the government to the farmers. Growth rates of production in different decades of Uttar Dinajpur District given a table as below:

Table 2: Growth rates of crops from 1981 to 2016
(Production '000 tonnes)

Crop \ Years	1981	1991	2001	2011	2016
Rice	431.78	568.40	628.60	655.50	673.35
Wheat	23.98	67.20	86.20	176.50	189.32
Fibre (Jute, Mesta)	188.56	299.10	473.70	468.81	452.12
Pulses	12.78	10.90	4.60	5.70	6.30
Oil seeds	29.30	49.90	32.40	54.20	59.78
Miscellaneous crops	156.76	189.65	166.40	179.95	180.54
Total	843.16	1,185.15	1,391.90	1,540.66	1,561.41

Source: i. Office of the Directorate of Agriculture, Government of West Bengal, Karnojora, Uttar Dinajpur.
ii. District Statistical Hand Book, Uttar Dinajpur, Bureau of Applied Economics & Statistics, Government of West Bengal.

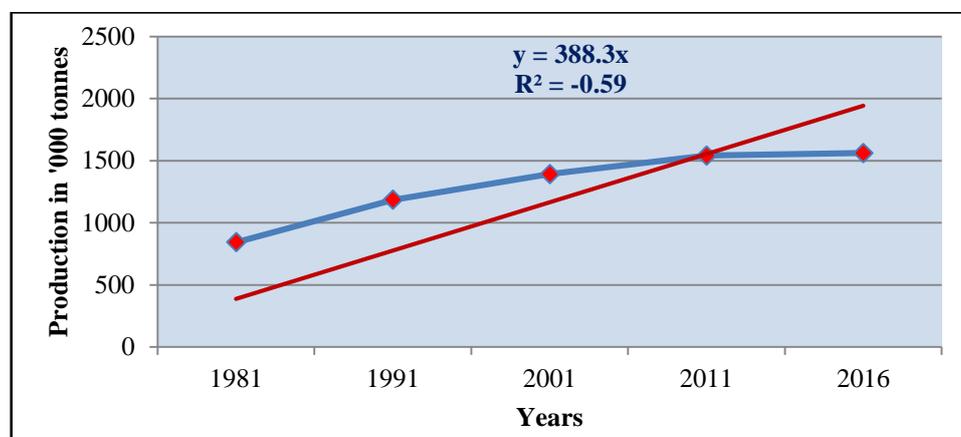


Fig. 1D: Growth of crop production 1981-2016.

As observed an overall picture of Uttar Dinajpur District is the spatial analysis of the volume of change in crop cultivation. Growth rates of rice have increased from 431.78 thousand tonnes in 1981 to 673.35 thousand tonnes in 2016. Wheat is also another important food grain in Uttar Dinajpur District and its production was in 1981 only 23.98 thousand tonnes but it has increased to 189.32 thousand tonnes in 2016. But pulse production decreased from 1981 to 2001, a total of 12.78 thousand tonnes of crop production was in 1981 and 4.60 thousand tonnes of crop production in 2001. It again increased to 6.30 thousand in 2016 (**table 2 & fig.1D**). It is clear that with the help of globalization, the amount of crop production growth per hectare, as well as total production, has improved in comparison to the past times.

6.4 Expansion of irrigated area

Globalization takes a key role in the expansion of irrigation in the district. With the adoption of improved agriculture, the agricultural fields must be irrigated. Irrigation ensures high productivity and

production of crops. Before the 1980s the system of irrigation was old and primitive (PAO, Uttar Dinajpur) in the district.

But the effects of globalization (agricultural inputs increased) irrigation area cover have increased today. The government has launched various schemes for developing irrigation through medium and minor irrigation projects. Such types of schemes are better for the perennial supply of water in crop areas both during the Kharif and Rabi season.



Plate 1C: Modernization steps in an irrigation system.

**Table 3: Area expansion of irrigated area by different sources from 1981 to 2016
(Area '000 hectares)**

Years \ Diff. Sources	1980-81	1990-91	2001-02	2010-11	2015-16
Govt. Canal	-	-	6.00	0.04*	1.26
Tanks	03.68	09.60	14.83	2.39	2.87
HDTW**	-	-	-	11.29	12.08
MDTW***	-	-	-	0.06	0.09
STW****	54.12	91.16	96.36	115.86	123.21
Others	10.45	18.43	41.20	37.90	34.47
Total	68.25[#]	119.19	158.39	167.54	173.98

Sources: i. Office of the Asstt. Engineer, Agricultural Mechanization, Jalasampad Bhawan, Karnojora, Uttar Dinajpur.

ii. District Statistical Hand Book 1991-2011, Uttar Dinajpur, Bureau of Applied Economics & Statistics, Govt. of West Bengal.

iii. Third Minor Irrigation Office, Jalasampad Bhawan, Karnojora, Uttar Dinajpur.

68.25[#]= Source wise data not available, based on the author's calculation 1981

(-) A sign denotes data not available.

*irrigation suffered due to severe drought situation.

**HDTW=High Capacity Deep Tubewell.

***MDTW= Middle Capacity Deep Tubewell.

****STW= Shallow Tubewell.

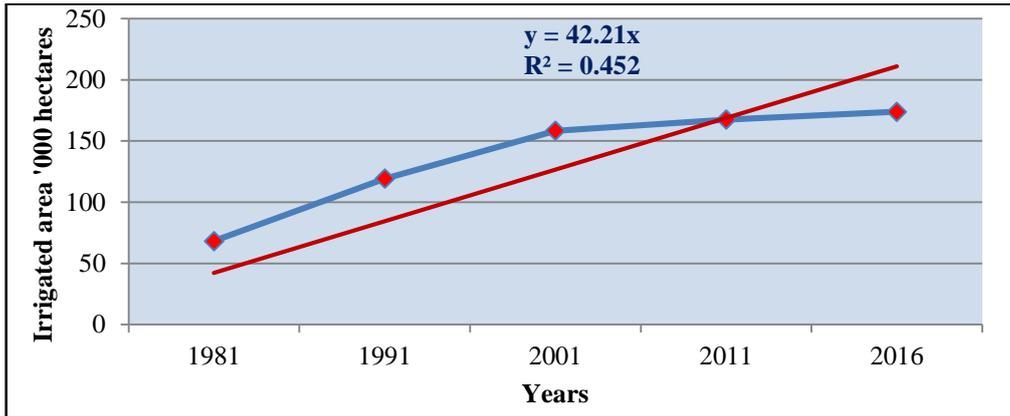


Fig.1E: Expansion of irrigation area 1981-2016.

The expansion of irrigated areas by different sources has increased from 68.25 thousand hectares in 1981 to 119.19 thousand hectares in 1991. Whereas 158.39 thousand hectares irrigated area was in 2001 but it has increased to 167.54 thousand hectares in 2011 and it again increased to 173.98 thousand hectares in 2016 (**Table 3 and figure 1E**). This has happened due to the rise of irrigation modernization as well as due to government subsidy for irrigation in this district.

VII. EFFECT OF GLOBALIZATION ON AGRICULTURE SECTOR:

The study of globalization and its effects would be incomplete without considering its impact on the most important sector of agriculture. The agricultural sector is known to be the backbone of the Uttar Dinajpur economy with an employment of more than 68per cent of the population in various agricultural, horticultural, and allied activities. Its contribution to the Gross Domestic Product (GDP), however, has been declining gradually over the past decades due to low productivity. The Agreement on Agriculture of the World Trade Organization (WTO) was the first multilateral agreement, meant to curb unfair practices in agricultural trade and set off the process of reforms in the agricultural sector. It contained the following broad areas:

7.1 Agrarian Crisis

The government started disinvesting in farming and the industrial part allowing the isolated sector to take over. The government reduced altered types of subsidies to agriculture which increased the production cost of cultivation. This lead to the agrarian crisis as it harmed the agricultural sector. Several million hectares of food-growing land were converted to exportable crops leading to falling in food grains output. Uttar Dinajpur District being self-sufficient started exporting wheat and rice to other districts of the country. But the rate of growth of the GDP in agriculture and allied sectors was just near about one percent per annum during the year 2015-16 in Uttar Dinajpur District. As a result, per capita availability of food grains decreased; the growth rate of the population became higher than that of food grains. Moreover, trade liberalization with a thrust on exports has been conducive to this district as well as Indian markets causing a steep fall in prices of farm goods.

7.2 Agricultural Unemployment

As a result of globalization, agricultural unemployment increases day by day because of the implementation of more modern tools in agriculture. In 1991, about 7.56 per cent of the total population was agricultural labour but it increased to 14.58 per cent (i.e., 2,27,634 in 1991 and 4,38,591 in 2011). Not only has that, increasing in the instance of farmers' suicides been major fallout of stagnation in agriculture. Side by side, expropriation of HYV seeds, shift in farming from organic farming to chemical farming, global competition is killing our farmers literally. Since agriculture is not drawing remunerative income, farmers have become desperate, turning to suicide as an escape from the debt trap.

7.3 More efficient markets

Efficient markets should be what every economy strives for essentially, the sign of an efficient market is where there is equilibrium between what buyers are willing to pay for a good or service and what sellers are willing to sell for a good or service in agricultural sectors. To avoid the adverse effect of tariffs on certain special products, importing countries have given a current access commitment by establishing a tariff quota, up to which imports are allowed at a lower rate and above which higher tariffs are charged. Under minimum access, commitment countries had to import a minimum quantity of their most restricted products.

7.4 Available of HYV Seeds supply

Seed supply has, therefore, become more efficient at the wholesale level but not at the level of the small scale farm. Supplying seeds to small-scale farmers is fraught with difficulties. Small quantities of different varieties are required to meet the individual farmer's needs. This involves complicated inventory problems, considerable transport costs, and wastage. There are few suppliers of the less profitable seed types of non-hybrid maize, millet, pulses, sorghum, oilseeds, potatoes and bananas. In 1991, a total of 2.45 tonnes of HYV seeds supply in the markets and it reached 6.89 tonnes in 2016 in the district (**PAO, Uttar Dinajpur**). Now-a-days, there are many distributors but this has made it more difficult to control quality.

VIII. FINDINGS AND CONCLUSION:

Many specialists say that we need a different kind of globalization in our world today. There must be ways to make sure that all countries profit from the good sides of globalization. Uttar Dinajpur District is not an exception. The increasing trend of development (1981-2016) in agricultural modernization, agriculture production (except a few crops), crops area, and irrigation area is a result of globalization. We should help poorer countries by giving them a better path and showing them how new technology works. Globalization, thus, is a reality. In spite of there are so many disadvantages of Globalization; one must admit that no country can afford to ignore the wave of globalization. However, adequate care, caution, and measures should be taken to mitigate the ill effects of globalization so that every nation can take the fullest advantage of globalization. In the district, before modernization farmers are used in the wooden plough, harrow, to lift water from wells, a high height of baskets or Kunri with timber Latha and rope are used but after the globalization, some changes in farm sector implements have occurred. Now-a-days farmers are used iron plough, iron-weeding wheels, electric pumps, sub-marshal pump sets for irrigation, and modern developed sprayers, etc. Not only that, effects of globalization on area of crops. In 1981, the area of crops was 287.44 thousand hectares. But it has increased to 439.42 thousand hectares in 1991 and 448.60 thousand hectares in 2001 respectively. In 2011, the total area again increased to 468.09 thousand hectares and in 2016 it again increased to 491.41 thousand hectares. The total net increased area of crops is 157.41 thousand hectares over the study period. On the other hand, growth rates of rice have increased from 431.78 thousand tonnes in 1981 to 673.35 thousand tonnes in 2016. Wheat production was in 1981 only 23.98 thousand tonnes but it has increased to 189.32 thousand tonnes in 2016. The irrigation area by different sources has increased from 68.25 thousand hectares in 1981 to 119.19 thousand hectares in 1991. Whereas, 158.39 thousand hectares irrigated area was in 2001 but it has increased to 167.54 thousand hectares in 2011 and it again increased to 173.98 thousand hectares in 2016. Finally, total changes in agriculture sector have occurred by the globalization in the district.

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