

Impact of Globalization on Methods of Cultivation with Special Reference to Theni District

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Abstract: Globalization is a process that has brought a lot of changes in all sectors including agriculture sector. It results the interdependence of world trade through which cross border business, access to high quality technologies and new culture in both business and in personal life of an individual have been developed. Social transformation has also taken place due to globalization factors. Food habits and life style of the people and culture have also been changed. Hence farmers have also changed their attitudes towards traditional cultivation and they have gone for new method of cultivation. This is only because of globalization factors. New package program in agriculture was developed and cash crop cultivation was popularized among farmers. Giant seed companies like Monsanto, Syngenta and Cortiva Agriscience have replaced the application of traditional and farm seeds in production. Adoption of new methods of cultivation has taken place in the form of using scientific methods, chemical fertilizers and improved farm techniques. These changes have totally eroded the subsistence farming and traditional farming. Instead the new package program caused to use high quality seeds, high intensive water crops, application of chemical fertilizers to a large quantity and pesticides. The outcome of those changes are increasing cost of production and coming out from the field.

Key Words--- Globalization, Cost, Seed, Fertilizer, Yield, Fertility of the land and soil, Pesticides and Analysis

Introduction

Globalization is a process that has brought a lot of changes in all sectors including agriculture sector. It results the interdependence of world trade through which cross border business, access to high quality technologies and new culture in both business and in personal life of an individual have been developed. It is inevitable in day today life and everybody has to travel along with it. Industrialist, Educationist, Agriculturalist and the common people have rich experience in globalization and have addressed the sparkle and darkness of globalization. However farmers are largely forced by globalization factors. The traditional farming system, seed saving method, cultivation method and cost of cultivation have been totally changed. New package program in agriculture was developed and cash crop cultivation was popularized among farmers. Giant seed companies like Monsanto, Syngenta and Cortiva Agriscience have replaced the application of traditional and farm seeds in production. More than 57 percent of the total population in India depends on agriculture for their lively hood and most of them are marginal farmers holding less than 1 acre of land and engaged in subsistence farming. But globalization has totally eroded such kind of farming due to dictating farming developed by globalization. Hence an attempt has been made by the authors to bring out the impact of method of cultivation (Production). Though cost of production and cost of cultivation are interchangeable,

there is a small difference between them. Cost of production includes the factor costs and costs incurred on marketing also. But cost of cultivation covers the factor cost and cost incurred the various activities till harvesting. Both have brought changes in method of cultivation. So how farmers have changed themselves and adopted the ongoing changes in agriculture sector is presented in this paper. 1200 farmers comprising marginal, small, medium and large have been taken using stratified random sampling in Theni District for the purpose of study.

The production and productivity largely depends on the method of cultivation right from the selection of seeds, preparation of land, sowing, irrigating the plant, and pre and post harvesting operations and harvesting on time. The development process has changed the cultivation method from tradition to modern by using scientific and improved farm techniques in agriculture which has replaced human power. Analyzing the impact of globalization on cultivation would help the researchers to know the changes occurred on the selected variables in the study area. Paired sample 't' test was calculated with the help of mean score.

1.1 Fertility of the land

The opinion of the respondents' towards fertility of the land was analyzed and resulting mean score and the respective 't' value are presented in the table 1.1

Table.1.1 Change in land fertility and test of significance

| Variable | Mean score of the fertility of the land | | Difference | 't' value |
|-----------------------|---|---------------------------|------------|-----------|
| | Pre globalization period | Post globalization period | | |
| Fertility of the land | 2.4250 | 1.1750 | 1.25000 | 79.355** |

Source : Primary Data

**Significant at 1 percent

The table 1.1 reveals that the mean value of the fertility of the land during pre globalization period was 2.4250 and it has declined to 1.1750 during post globalization period. This is due to the high consumption of fertilizer and pesticides.

It is also inferred from the table that since the difference between the two periods is significant, there is a significant difference between the pre and post globalization periods in land fertility and the study concludes that the land fertility has decreased significantly during post globalization period in the study area.

1.2 Fertility of the soil

The opinion of the respondents' towards fertility of the soil was analyzed and resulting mean score and the respective 't' value are presented in the table 1.2

Table 1 .2.Change in fertility of the soil and test of significance

| Variable | Mean score of the fertility of the soil | | Difference | 't' value |
|-----------------------|---|---------------------------|------------|-----------|
| | Pre globalization period | Post globalization period | | |
| Fertility of the soil | 1.5550 | 1.4500 | 0.10500 | 3.803** |

Source :Primary Data

**Significant at 1 percent

The table 1.2 indicates that the mean value of the fertility of the soil during pre and post globalization period was 1.5550 and 1.4500 respectively. The decline in the fertility of the soil is attributed to the declining micro nutrient of the soil due to the destruction of micro organisms by applying more chemical based inputs.

It is also inferred from the table that since the difference between the two periods is significant, there is a significant difference between the pre and post

globalization periods in the fertility of the soil and the study concludes that globalization has statistically decreased the fertility of the soil in the study area.

1.3 Usage of self saved seed

The opinion of the respondents' towards the usage of self saved seed was analyzed and resulting mean score and the respective 't' value are presented in the table 1.3

Table1.3.Change in the usage self save seed and test of significance

| Variable | Mean score of the usage of self saved seed | | Difference | 't' value |
|--------------------------|--|---------------------------|------------|-----------|
| | Pre globalization period | Post Globalization period | | |
| Usage of self saved seed | 2.5150 | 1.4850 | 1.03000 | 50.484** |

Source: Primary Data

**Significant at 1 percent

The table 1.3 shows that the mean score of the usage of self saved seed during pre globalization period was 2.5150 and it has been perceived low during post globalization period as 1.4850. It implies that usage of traditional seed variety has declined in the study area. Domestic and international privatization in seed sector has developed the usage of pocket seeds and reduced the traditional seed variety. It is also inferred from the table that since the difference between the two periods is significant, there is a significant difference between the pre and post globalization periods in the usage of self saved seed and the study concludes that globalization has statistically decreased the usage of self save seed in the study area.

1.4 Usage of seed through inter farmers exchange

The opinions of the respondents' towards the usage of seed through inter farmers exchange was analyzed and resulting mean score and the respective 't' value are presented in the table 4

Table1.4.Change in the usage of seed through inter farmers exchange and test of significance

| Variable | Mean score of the usage of inter farmers exchange seed | | Difference | 't' value |
|--------------------------------------|--|---------------------------|------------|-----------|
| | Pre globalization period | Post Globalization period | | |
| Usage of inter farmers exchange seed | 2.0850 | 1.5750 | 0.51000 | 17.073** |

Source : Primary Data

**Significant at 1 percent

The table 1.4 shows that the mean score of the usage of seed by farmers through inter farmers exchange during pre globalization period were 2.0850 and it has decreased during post globalization period as 1.5750. Usage of high yield variety seeds and developed market oriented agriculture have reduced the usage of seed through inter farmers' exchange.

It is also inferred from the table that since difference between the two periods is significant, there is a significant difference between the pre and post globalization periods in the usage of seed through inter farmers exchange seed and the study concludes that globalization has significantly decreased the usage of seed through inter farmers exchange seed in the study area.

1.5 Quantity of seed used per acre

The opinion of the respondents' towards quantity of seed used per acre was analyzed and resulting mean score and the respective 't' value are presented in the table 1.5

Table 1.5.Change in the quantity of seed used per acre- Test of significance

| Variable | Mean Score of the quantity of seed used per acre in kg | | Difference | 't' value |
|--------------------------------------|--|---------------------------|------------|-----------|
| | Pre globalization period | Post globalization period | | |
| Quantity of seed used per acre in kg | 30.3950 | 22.5500 | +7.84500 | 107.622** |

Source: Primary

**Significant at 1 percent level

The table1.5 shows that the mean score of the quantity of seed used by the respondents per acre during pre globalization period was 30.3950 Kg and it has decreased during post globalization period to 22.5500Kg. Availability of high productive seeds has reduced the seed consumption per acre.

It is also inferred from the table that since the difference between the two periods is significant, there is a significant difference between the pre and post globalization periods in quantity of seed used per acre and the study concludes that globalization has significantly decreased the seed consumption per acre in the study area.

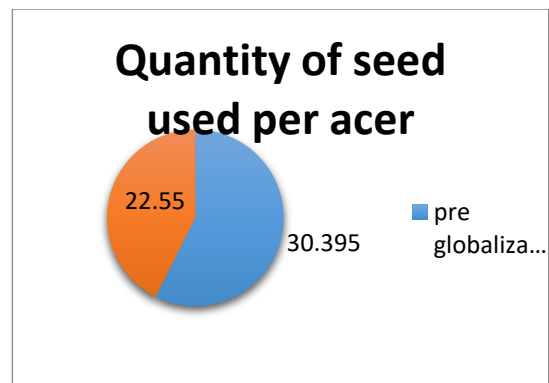


Figure-1

Quantity of seed used per acre in k.g

1.6 Yield rate

The yield rate in kg was analyzed and resulting mean score and the respective' value are presented in the table 1.6

Table1.6.Change in the yield per acre and test of significance

| Variable | Mean Score of the yield per acre in kg | | Difference | 't' value |
|----------------------|--|---------------------------|------------|------------|
| | Pre globalization period | Post globalization period | | |
| Yield per acre in ke | 24.6100 | 40.3750 | -15.76500 | -107.597** |

Source: Primary data

**Significant at 1 percent level

The table1.6 reveals that the mean score of the yield per acre during pre globalization period was 24.6100 kg and it has increased to 40.3750 kg during post globalization period. There is an increase in yield per acre after globalization period. Adoption of improved farm techniques and availability of high productive seeds are

the reasons for increasing yield.

It is also inferred from the table that since the difference between the two periods is significant, there is a significant difference between the pre and post globalization periods in the yield per acre and the study concludes that globalization has significantly increased the yield per acre in the study area.

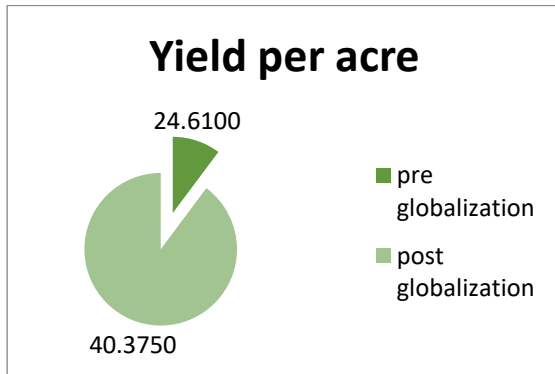


Figure-2

Yield per acre usage of chemical fertilizer

The opinion of the respondents' towards the usage of chemical fertilizer was analyzed and resulting mean score and the respective 't' value are presented in the table 1.7

Table 1.7 Change in chemical fertilizer usage by the farmers

| Variable | Mean score of the usage of chemical fertilizer | | Difference | 't' value |
|------------------------------|--|--------------------|------------|-----------|
| | Pre globalization | Post globalization | | |
| Usage of chemical fertilizer | 1.1500 | 2.7200 | -1.57000 | -87.604* |

Source: Primary Data

**Significant at 1 percent

It is evident from the table 1.7 that the mean score of the usage of chemical fertilizer per acre during pre globalization period was 1.1500 and it has increased to 2.7200 during post globalization period. Intention of the farmers towards more yield and the implications of the private sector towards fertilizer application have increased more fertilizer and developed the culture among the farmers to go for fertilizer. These are the reasons for increasing fertilizer usage.

It is also inferred from the table that since the difference between the two periods is significant, there is a significant difference between the pre and post globalization periods in the usage of chemical fertilizer and the study concludes that globalization has significantly increased the usage of chemical fertilizer in the study area.

1.8 Usage of bio fertilizer

The opinion of the respondents' towards the usage of bio fertilizer was analyzed and the resulting mean score and the respective 't' value are presented in the table 1.8

Table 1.8. Change in Bio fertilizer usage and test of significance

| Variable | Mean score of the usage of bio fertilizer | | Difference | 't' value |
|-------------------------|---|---------------------------|------------|------------|
| | Pre globalization period | Post globalization period | | |
| Usage of bio fertilizer | 1.0000 | 2.8500 | -1.85000 | -179.402** |

Source: Primary Data

**Significant at 1 percent

It is clear from the table 1.8 that the usage of bio fertilizer during pre-globalization has perceived low mean score as 1.0000 and it has perceived high mean score as 2.8500 during post globalization period. In order to enhance the soil fertility and minimize chemical fertilizers, bio fertilizer is used.

It is also inferred from the table that since the difference between the two periods is significant, there is a significant difference between the pre and post globalization periods in the usage of bio fertilizer and the study concludes that globalization has significantly increased the usage of bio fertilizer in the study area.

1.9 Usage of pesticides

The opinion of the respondents' towards the pesticide usage was analyzed and resulting mean score and the respective 't' value are presented in the table 1.9

Table 1.9. Change in the usage of pesticide and test of significance

| Variable | Mean score of the pesticide usage | | Difference | 't' value |
|--------------------|-----------------------------------|--------------------|------------|-----------|
| | Pre globalization | Post globalization | | |
| Usage of pesticide | 1.1600 | 2.7250 | -1.56500 | -86.139** |

Source: Primary Data

**Significant at 1 percent

The table 1.9 reveals that the usage of pesticides during pre-globalization period has perceived low mean score 1.1600 and post globalization period has perceived high as 2.7250. The difference of the mean score shows that there is an increase in the usage of pesticide. Destruction of micro organisms, development of monoculture and releasing of new organisms and the lack of disease free crop production increases the usage of pesticides.

It is also inferred from the table that since the difference between the two periods is significant, there is a significant difference between the pre and post globalization periods in the usage of pesticides and the study concludes that globalization has increased the usage of pesticides in the study area.

Conclusion

The analysis has outlined that the cultivation practice has been changed according to the needs of globalization. The seed saving method, seed mobilization and seed requirement have changed. Application of chemical fertilizer, pesticide and high water consumption crop cultivation has been increased in the study area.

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