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Impact of Paramparagath Krishi Vikas Yojana Scheme on the Livelihood of Beneficiaries

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJAEES/2023/v41i102136

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/105432>

Original Research Article

Received: 18/06/2023

Accepted: 22/08/2023

Published: 24/08/2023

ABSTRACT

The Indian government's Paramparagath Krishi Vikas Yojana (PKVY) programme has gained prominence as a key push to advance organic agricultural methods all over the nation. The study was conducted in Virudhunagar and Madurai districts of Tamil Nadu, with a sample size of 120 beneficiary respondents from the designated villages utilising census method. In-depth analysis of

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the scheme's effects on organic farmers is provided in this article, along with conclusions about how well it promotes sustainable agricultural practices and increases crop yields while also stimulating economic growth. The quantitative component looks at data from a variety of organic farming clusters before and after implementation of the scheme, analysing variables such as changes in the farm, family, education, social contacts, income, debt, and health. The findings revealed a significant positive impact of PKVY scheme on the livelihood of organic farmers. Participating farmers have reported a gradual shift towards organic cultivation, reducing their reliance on chemical inputs and adopting eco-friendly alternatives. Notably, the PKVY scheme has led to tangible economic benefits for organic farmers.

Keywords: *Impact; Paramparagath Krishi Vikas Yojana; Organic farming practices.*

1. INTRODUCTION

India's economy is based on agriculture, which provides a living for millions of farmers and makes a sizable contribution to the GDP of the country. However, long-term sustainability, environmental deterioration, and farmer health have become issues due to the extensive use of chemical inputs and conventional agricultural methods [1,2]. In order to solve these issues and promote environmentally friendly agricultural methods, the Indian government launched the Paramparagath Krishi Vikas Yojana (PKVY) programme in 2015 [3-6]. A crucial step towards converting conventional agriculture into an organic and sustainable model is the PKVY programme [7-9]. The programme strives to enhance biodiversity, promote organic farming practices throughout the nation, and lessen the ecological impact of agricultural operations [10,11]. By providing financial incentives, technical assistance, and training, the PKVY scheme empowers farmers to adopt eco-friendly practices and transition from chemical-intensive methods to organic cultivation [12-14].

This article delves into the influence of the PKVY programme on organic producers. The program's success in bringing about positive change in agricultural practices, economic consequences, and environmental sustainability is being evaluated using a combination of quantitative data analysis and qualitative case studies. This study advances knowledge of the PKVY scheme's ability to support sustainable agriculture in India by highlighting the program's successes and difficulties.

Understanding the effects of the PKVY programme is important for developing policies and tactics that can hasten the adoption of sustainable farming practices as organic farming becomes more and more popular as a viable

alternative to the problems with the environment and human health caused by conventional practices.

2. RESEARCH METHODOLOGY

The study was carried out in two specifically chosen Southern districts of Tamil Nadu, namely Virudhunagar and Madurai, grabbing into account the sustainability of organic agricultural practices among the district's beneficiary farmers and the successful implementation of the PKVY scheme since 2015. The programme was put into action in the Madurai district's Usilampatti, Sedapatti, T. Kalupatti, and Thirumangalam blocks as well as the Virudhunagar district's Rajapalyam, Watrap, and Vembakottai blocks. Based on the number of beneficiaries in each block, 2 blocks from the Virudhunagar district (Rajapalayam and Watrap) and 3 blocks from the Madurai district (Usilampatti, Sedapatti, and Thirumangalam) were purposively chosen from those 7 blocks. Using census method, entire 120 respondents in all the purposively selected villages were chosen for the study. A pre-tested interview schedule was used to gather the information from the beneficiaries. The overall impact of PKVY scheme on the beneficiary farmers were studied under seven sub headings such as farm, family, education, social contact, income, debt and health and the Z-test was used for the analysis and the results were interpreted.

3. FINDINGS AND DISCUSSION

The impact of the PKVY scheme introduced for the promotion of organic farming among the beneficiaries was measured before and after the implementation of the scheme. As the sample involves comparing two sample means, Z- test was performed as the sample size was large ($n > 30$) and the sample variance was known. The result obtained is depicted in the Table 1.

Table 1. The impact of the PKVY scheme for the promotion of organic farming among the beneficiaries

| S.No. | Category | Mean (Before) | Mean (After) | Z-Value | P-value |
|-------------|-----------------------------------------------------------------------------|------------------|-----------------|----------|---------|
| I. | FARM | | | | |
| 1. | Purchased new lands | 1.22 | 1.86 | 12.99** | 0.000 |
| 2. | Land area leased in | 1.80 | 1.15 | 12.92** | 0.000 |
| 3. | Land area leased out | 1.02 | 1.02 | 0(NS) | 1 |
| 4. | Dug new well | 1.02 | 1.16 | 3.82** | 0.000 |
| 5. | Deepened the existing well | 1.01 | 1.49 | 10.04** | 0.000 |
| 6. | Purchased new implements | 1.02 | 1.57 | 11.57** | 0.000 |
| 7. | Sold land, farm implements, vehicles, livestock, etc. | 1.83 | 1.02 | 21.82** | 0.000 |
| 8. | Increased area under organic cultivation | 1.19 | 1.93 | 17.36** | 0.000 |
| 9. | Reduction in land fragmentation | 1.61 | 1.86 | 4.59** | 0.000 |
| II. | FAMILY | | | | |
| 1. | Joint to nuclear family | 1.25 | 1.175 | 1.56(NS) | 0.116 |
| 2. | Raised members involved in non-farm occupation | 1.40 | 1.24 | 2.65** | 0.007 |
| 3. | Changes in members involving in farm occupation | 1.71 | 1.70 | 0.14(NS) | 0.887 |
| 4. | Increased expenditure on grocery items | 1.30 | 1.65 | 5.61** | 0.000 |
| 5. | Raised no. of vehicles available for your transportation | 1.20 | 1.74 | 9.96** | 0.000 |
| 6. | Improved consumption of high nutritious food | 1.19 | 1.20 | 0.32(NS) | 0.747 |
| 7. | Increased expenses on family requirements | 1.14 | 1.73 | 11.46** | 0.000 |
| III. | Education | | | | |
| 1. | Provided higher education for children | 1.19 | 1.93 | 17.36** | 0.000 |
| 2. | Provided an additional facilities like NEET, GATE, JEE etc. | 1.13 | 1.22 | 1.85(NS) | 0.063 |
| 3. | Purchased mobile phones/laptops for their children education | 1.90 | 1.94 | 1.19(NS) | 0.232 |
| 4. | Paid donation for others higher studies | 1.19 | 1.24 | 0.93(NS) | 0.348 |
| 5. | Transferred studies from government school to private school and vice versa | 1.03 | 1.13 | 2.83** | 0.004 |
| 6. | Children temporarily discontinued their education | 1.13 | 1.02 | 3.15** | 0.001 |
| IV. | Social contact | | | | |
| 1. | Collaboration with peers | 1.64 | 1.22 | 7.14** | 0.000 |
| 2. | Shared agriculture related information | 1.68 | 1.86 | 3.47** | 0.000 |
| 3. | Increased organization participation | 1.05 | 1.15 | 2.51* | 0.011 |
| 4. | Increased opinion leadership quality | 1.08 | 1.29 | 6.66** | 0.000 |
| 5. | Membership in PACB/SHG any others | 1.02 | 1.09 | 2.21* | 0.026 |
| 6. | Participated in agricultural meetings | 1.62 | 1.29 | 5.47** | 0.000 |
| 7. | Increased contact with extension personnel of state department | 1.68 | 1.82 | 2.57* | 0.010 |
| V. | Income | | | | |
| 1. | Rised income from farming | 1.05 | 1.84 | 20.31** | 0.000 |
| 2. | Rised income from livestock | 1.12 | 1.75 | 12.77** | 0.000 |
| 3. | Increased income from asset | 1.02 | 1.15 | 3.66** | 0.000 |
| 4. | Brought a new assets like agricultural lands and plots | 1.19 | 1.86 | 14.15** | 0.000 |
| 5. | Purchased golds | 1.13 | 1.25 | 2.31* | 0.020 |
| 6. | Establishment of additional income sources | 1.01 | 1.16 | 4.15** | 0.000 |

| S.No. | Category | Mean (Before) | Mean (After) | Z-Value | P-value |
|-------------|------------------------------------------------|------------------|-----------------|----------|---------|
| 7. | Long term profit | 1.02 | 1.21 | 4.74** | 0.000 |
| 8. | Minimised cost of production | 1.05 | 1.89 | 23.35** | 0.000 |
| VI. | Debt | | | | |
| 1. | Obtained loan from a bank | 1.80 | 1.58 | 3.72** | 0.000 |
| 2. | Agricultural gold loan | 1.75 | 1.06 | 15.22** | 0.000 |
| 3. | Reduced mortgage on agriculture land | 1.16 | 1.70 | 9.84** | 0.000 |
| 4. | Reduced debt on education purposes | 1.73 | 1.93 | 4.29** | 0.000 |
| 5. | Minimized loan due on buying farm machineries | 1.16 | 1.80 | 12.91** | 0.000 |
| 6. | Sold gold, land, vehicle for repayment of loan | 1.80 | 1.07 | 16.89** | 0.000 |
| VII. | Health | | | | |
| 1. | Got treatment from private hospital | 1.19 | 1.25 | 1.08(NS) | 0.276 |
| 2. | Regular health check-up | 1.13 | 1.25 | 2.31* | 0.020 |
| 3. | Took treatment only for major health issues | 1.76 | 1.78 | 0.30(NS) | 0.758 |
| 4. | Sold any of the property for medical expenses | 1.77 | 1.10 | 13.97** | 0.000 |
| 5. | Utilized health insurance schemes | 1.12 | 1.13 | 0.19(NS) | 0.847 |

** - Significant at 1% level; * - Significant at 5% level; NS - Non-Significant

From the table, it could be inferred that the calculated Z (two-tailed) value is greater than the critical value thus revealing significant difference in farm, family, education, social contact, income, debt, health before and after implementation of the PKVY scheme. Also, the probability (P value) associated with the sample is highly significant ($P=0.05$) in all the seven dimensions of changes and hence null hypothesis can be rejected. It is thereby concluded that there is significant difference between the mean empowerment before and after the implementation of PKVY among the beneficiaries of the scheme.

As the impact of PKVY scheme on the beneficiaries have been studied under seven categories such as Changes in farm, changes in family, changes in education, changes in social contact, changes in income, changes in debt, and changes in health each with certain set of sub-questions incorporated in it and the analysis was carried out for each of the sub-questions. From the results obtained, it can be concluded that under changes in farm all the sub questions have showed significant difference at 1% level of significance before and after implementation of the scheme except the sub- question land area leased out with no difference before and after the implementation of the scheme.

In the category of changes in family, the sub – questions such as raised members involved in non-farm occupation, increased expenditure on grocery items, raised no.of vehicles available for your transportation, increased expenses on

family requirements have recorded significant difference at 1% level of significance before and after the implementation of scheme and the sub questions such as joint to nuclear family, changes in members involving in farm occupation, improved consumption of high nutritious food recorded non-significant difference before and after the implementation of the scheme as the scheme have no relationship contributing to the changes in those sub questions.

In the category of changes in education, half of the sub –questions recorded the non significant difference before and after the implementation of the scheme as those sub questions were found to be inappropriate to expect changes among the beneficiaries after the implementation of the scheme as well as some where the one already existed with them before the scheme's implementation.

Considering the changes in social contact, all sub questions inscribed the significant difference ahead and later the implementation of scheme but the level of significance varied among the standby inquires. The standby inquires such as collaboration with peers, shared agriculture related information, increased opinion leadership quality, participated in agricultural meetings set down to be significant at 1% level of significance and the inquires such as increased organization participation, membership in PACB/SHG any others, increased contact with extension personnel of state department set down to be significant at 5% level of significance.

Table 2. Distribution of beneficiaries according to overall impact (n = 120)

| S.No. | Category | Number | Percentage |
|-------|---------------|-----------|--------------|
| 1. | Low | 8 | 6.67 |
| 2. | Medium | 96 | 80.00 |
| 3. | High | 16 | 13.33 |

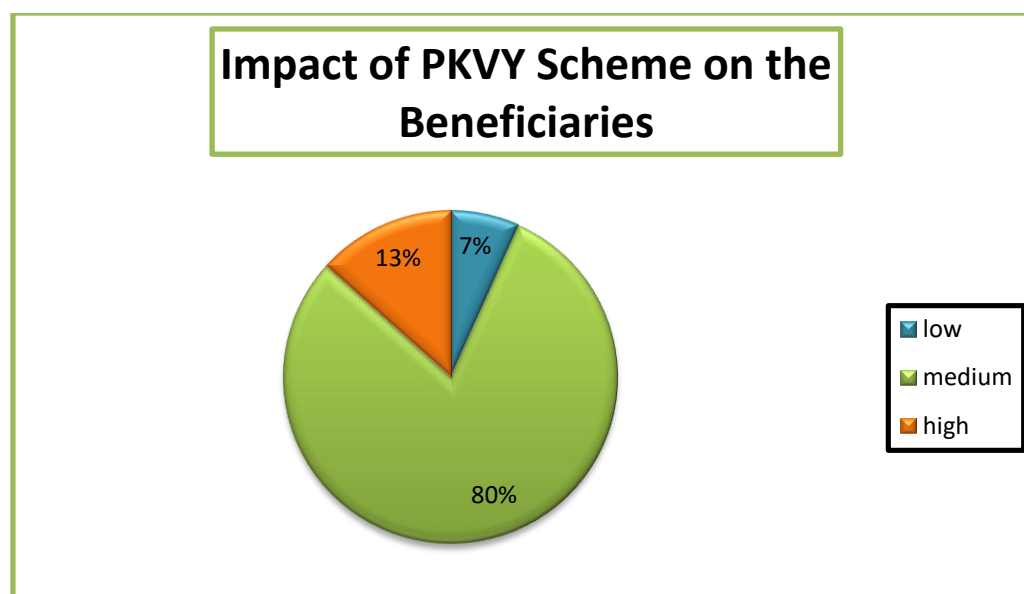


Fig. 1. Distribution of respondents according to their level of impact

With regard to changes in income of beneficiaries before and after the implementation of the scheme all the standby inquires recorded significant difference at 1% level of significance except the only one inquire purchased golds recorded to be significant at 5% level of significance. In the aspect of debt all the enquiries set down significant difference at 1% level of significance before and after the implementation of the scheme because the beneficiaries enrolled under the scheme PKVY had received enormous advantages with which they recorded drastic reduction in their debts and resulted in improved standard of living.

Finally, under the category of health it is found that most of questions (Got treatment from private hospital ,took treatment only for major health issues, utilized health insurance schemes)recorded non- significant difference before and after the implementation of the scheme and the questions sold any of the property for medical expenses and regular health check-up recorded significant difference at 1% and 5% level of significance respectively.

From the results it can be clearly presumed that the implementation of PKVY scheme to the

farmers involved in organic farming had indeed played a significant role in empowering the overall well being of the farmer beneficiaries.

From the Table 2, it can be interpreted that majority of the beneficiaries (80.00%) had medium level of impact followed by high (13.33%) and low (6.67%) level of impact from intervention of the PKVY scheme implemented for the promotion of organic farming among the farmers. Hence, the results showed that the scheme had played a crucial role in the empowerment of the beneficiaries.

4. CONCLUSION

Investigation of the effects of the Paramparagath Krishi Vikas Yojana (PKVY) programme on its recipients has shown up significant and remarkable results both before and after the program's implementation. The programme had a considerable positive impact on the beneficiaries lives. Its goal was to promote organic farming and traditional agricultural methods. It is important to note that the government's efforts to provide technical assistance, training, and financial support to the recipients can also be credited with the success

of the PKVY initiative. These steps aided in the easy transition from conventional to organic farming methods and increased the agricultural community's confidence in using these cultivation techniques. Increased agricultural productivity and ecological sustainability are two important outcomes of the switch to organic farming practices. The success of the scheme underscores the potential of combining traditional wisdom with modern techniques to create a holistic and sustainable approach to agriculture.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
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