**Barriers Perceived by the Farmers in Adoption of Organic Farming**

**ABSTRACT**

The present study analyzed the constraints being faced by farmers in adoption of organic farming. The present investigation was carried out in agro-climatic zones Ic and IVb of Rajasthan. From the selected agro-climatic zones, the study was carried out in two districts namely Bikaner and Dungarpur which was selected purposely on the basis of maximum organic certified group. From the selected districts, five organic certified groups were selected from each district using simple random sampling. From each selected group, 20 organic farmers and 20 inorganic farmers from the same area were chosen using simple random sampling. Thus, a total of 400 respondents *i.e.*, 200 organic farmers and 200 inorganic farmers were selected from selected districts for the present investigation. Constraints were studied under various components *viz.* general, economic, input, labour & machinery, technical know-how, marketing and psychological constraints. Garrett’s ranking technique was used to analyze the constraints faced by respondents. The findings elucidated that most serious constraints hindering farmers adoption of organic farming include “low production during conversion period” in general constraints, under economic constraints “low profit at the initial stage of organic farming” was a key issue, in terms of input constraints “lack of quality seed, pest & disease resistant varieties for cultivation” was major constraint, under labour & machinery constraints “wages and labour costs are high” was most severe constraint, “limited guidance on the preparation of organic inputs” in technical know-how constraints, in marketing constraints “marketing of produce is challenging due to the absence of specialized agencies” was found as most severe constraint and under psychological constraints “limited understanding and inadequate techniques” was found as most rigorous constraints identified by majority of respondents.

**Keyword:** Organic Farming, Constraints, Garrett’s Ranking Method

**Introduction**

The Indian economy has traditionally been rooted in agriculture, serving as the backbone of the nation for centuries. Even today, more than half of India’s population depends on agriculture and allied activities for their livelihood (Tripathi *et al.* 2018). In the years following independence, India faced a serious food security crisis due to rapid population growth, which significantly increased the demand for food grains and agricultural raw materials to support future industrial development (Tripathi, 2021). To meet this rising demand, farmers began relying heavily on chemical fertilizers and pesticides. While this shift initially helped in boosting agricultural productivity and addressing food shortages, over time, the excessive and unregulated use of these chemicals has led to a new set of challenges. The overuse of chemical inputs has not only degraded soil health and biodiversity but also made agricultural produce potentially harmful to human health. As awareness of these impacts grows, there is an urgent need to rethink and promote sustainable and health-conscious farming practices such as organic farming. Organic farming is one of these alternatives, which focuses on sustainable agricultural production and conservation of natural resources. According to IFOM, "organic agriculture is a production approach that sustains the health of soil, ecosystems and people". Organic farming relies on ecological processes, biodiversity and locally adapted cycles, rather than the use of inputs that may have harmful effects (Barik, 2017). In the realm of organic farming, the state of Rajasthan ranks fourth in terms of the total land area devoted to organic agriculture. However, the adoption of organic farming in the state remains limited, primarily due to the unique challenges posed by its arid and semi-arid climatic conditions (Shrivastava *et al.,* 2024). Farmers are often reluctant to transition to organic production due to several constraints, including the unavailability of adequate quantities of organic manures and other organic inputs in the local market, lack of complete knowledge about organic farming principles, practices, and benefits, as well as the complex and costly procedures involved in obtaining organic certification. Moreover, there is uncertainty and risk associated with marketing organic produce at premium prices in the domestic market. Despite various efforts and schemes initiated by the government to promote organic farming, these persistent challenges continue to hinder its widespread adoption in Rajasthan. Furthermore, only limited research has been conducted to systematically identify and analyze the specific constraints faced by farmers in adopting organic farming practices, indicating a need for more focused studies in this area. Therefore, the present study was undertaken to ascertain the constraints being faced by the farmers in the adoption of organic farming.

**Research Methodology**

The present investigation was conducted in agro-climatic zones Ic (Hyper Arid Partial Irrigated Western Plain Zone) and IVb (Humid Southern Plain) of Rajasthan, which were selected purposely for the present investigation on the basis of maximum number of organic certified groups present in the region. The selected zones *i.e.,* zone Ic and IVb has seven districts namely Bikaner, Jaisalmer, Churu, Dungarpur, Banswara, Pratapgarh and Udaipur, respectively. Out of these seven districts, two districts namely Dungarpur and Bikaner were selected purposely on basis of maximum number of organic certified groups. From the selected districts, 5 organic certified groups were randomly selected from each district, thus 10 organic certified groups were selected from the selected districts. From each selected group, 20 organic farmers and 20 inorganic farmers from the same area were chosen using simple random sampling. Thus, total 400 respondents *i.e.,* 200 organic farmers and 200 inorganic farmers were selected from selected districts for the present investigation. In present investigation constraints were studied under various components *viz.* general, economic, input, labour & machinery, technical know-how, marketing and psychological constraints. Garrett’s ranking technique was used to analyze the constraints faced by respondents. The respondents were asked to rank the statements. These orders of merit were transformed into units of scores by using the following formula:

$$Percent postion =\frac{100(R\_{ij}-0.50)}{N\_{j}}$$

**Results and Discussion**

**General Constraints Perceived by the Farmers in Adoption of Organic Farming**

The data in Table 1 reveals that in Bikaner district, the majority of organic farmers identified "low production during the conversion period" as the most severe general constraint in adoption of organic farming, as given rank first with a GMS of 74.66. The general constraint such as “slow conversion period from inorganic to organic” and “lack of facilities for testing soil & water” was ranked second and third by the organic farmers with 56.48 and 55.74 GMS. In contrast most of the inorganic farmers identified “dominance of the inorganic farmers in the local area” as the most severe constraints in adoption of organic farming and it was ranked first by the respondents with 63.39 GMS. This was followed by “low production during conversion period” which was ranked second with 61.83 GMS. Similarly, “lack of government support” was identified as a least constraint and was ranked sixth.

In Dungarpur, majority of organic farmers reported “slow conversion period from inorganic to organic” as a most critical general constraint and was ranked first with 75.57 Garret Mean Score, followed by “low production during conversion period” which was ranked second with 65.56 GMS. On the other hand, majority of inorganic farmers perceived “low production during conversion period” as a most critical general constraints, receiving the highest Garret Mean Score of 67.94 and it was ranked first, followed by “lack of facilities for testing soil & water” (56.97 GMS) and “dominance of the inorganic farmers in the local area” (55.01 GMS) were ranked second and third by the inorganic farmers, respectively.

Overall analysis of Table 1 revealed that majority of respondents’ faced “low production during conversion period” as the most severe general constraint in adoption of organic farming which was ranked first by the respondents with 68.04 Garret Mean Score, followed by “slow conversion period from inorganic to organic” (60.86 GMS) ranked second, “lack of facilities for testing soil & water” ranked third with 56.42 GMS, “dominance of the inorganic farmers in the local area” (55.56 GMS) ranked fourth, “lack of government support” (43.78 GMS) ranked fifth and “lack of printed materials about organic agricultural techniques” (37.54 GMS) ranked sixth. Thus, the findings suggest that low production during conversion period and slow conversion period from inorganic to organic was considered as most serious constraints by the majority of respondents. A main reason behind the low production during the conversion phase was the temporary decline in soil fertility and productivity as chemical inputs were withdrawn and natural systems began to re-establish. The transition itself is often slow and complex, requiring not only time but also knowledge and support, which many farmers lack. Additionally, the absence of proper soil and water testing facilities hinders informed decision-making, while the dominance of conventional farmers creates a social environment that may discourage or isolate organic practitioners. All of these factors combine to create a challenging environment for farmers attempting to make the transition from inorganic to organic practices. The findings are in line with the findings of Shehrawat *et al.* (2016) and Ghanghas *et al.* (2021) who reported that predominance of the inorganic farmers in the locality and low production during conversion period were very serious problems faced by the farmers in adopting organic farming.

**Economic Constraints Perceived by the Farmers in Adoption of Organic Farming**

The data in Table 2 depicts that in Bikaner majority of organic and inorganic farmers considered “low profit at the initial stage of organic farming” as a most severe economic constraint. This issue was ranked first by both groups, with Garret Mean Scores of 67.37 for organic farmers and 59.10 for inorganic farmers. The second most severe constraint for organic farmers was “difficulty in accessing credit,” which received a Garret Mean Score of 60.24 and was ranked second. In contrast, inorganic farmers ranked this same constraint third, assigning it a score of 54.26. Likewise, the statement “lack of awareness about financial resources” was identified as the third most significant economic constraint by organic farmers, receiving a Garret Mean Score of 58.14. In comparison, inorganic farmers ranked this constraint fourth position, assigning it a Garret Mean Score of 50.26. The constraint stating that “in the current inorganic production period of agriculture starting organic production is costly” was ranked fourth by organic farmers with 55.02 GMS and conversely, inorganic farmers considered this a more pressing issue, ranking it second with a GMS of 56.64. The constraint “higher cost involved in the certification charges” and “not enough subsidies for production of organic crops” was consistently ranked fifth and sixth by both organic and inorganic farmers, respectively.

In Dungarpur, organic farmers also considered “low profit at the initial stage of organic farming” as the most severe constraint, giving it the highest GMS of 68.42. The second most pressing issue for them was “difficulty in accessing credit” with 62.76 GMS, followed by “lack of awareness about financial resources” which received a GMS of 56.78 and was ranked third. On the other hand, inorganic farmers in Dungarpur identified “difficulty in accessing credit” as the most serious constraints (60.67 GMS, ranked first), followed by “lack of awareness about financial resources” which was ranked second with 58.71 GMS and “low profit at the initial stage of organic farming” which was ranked third with a GMS of 57.83. Additionally, both organic and inorganic farmers consistently placed “in the current inorganic production period of agriculture starting organic production is costly”, “higher cost involved in the certification charges” and “not enough subsidies for production of organic crops” at fourth, fifth, and sixth positions, respectively. These issues received GMS scores of 54.01, 37.43, and 35.23 from organic farmers, and 53.64, 44.98, and 34.17 from inorganic farmers.

 The overall evaluation of Table 2 shows that majority of respondents identified “low profit at the initial stage of organic farming” as the most severe economic constraint in adopting organic farming, ranking it first with the highest overall GMS of 63.18, followed by “difficulty in accessing credit”, which secured the second rank with 59.48 GMS. The third serious constraint was “lack of awareness about financial resources” with a GMS of 55.97. Other challenges included the “in the current inorganic production period of agriculture starting organic production is costly” (55.58 GMS) ranked fourth, “higher cost involved in the certification charges” (42.21 GMS) ranked fifth, and “not enough subsidies for production of organic crops” (35.69 GMS), was placed sixth. The findings are in accordance with the findings of Haneef *et al.* (2019)

**Input Constraints Perceived by the Farmers in Adoption of Organic Farming**

The data in Table 3 represents that in Bikaner, majority of organic farmers considered “unavailability of organic feedstock for compost production” was the most severe constraint, giving it the highest GMS of 62.52. The second most pressing issue for them was “lack of quality seed, pest and disease resistant varieties for cultivation” with 58.74 GMS, followed by “unavailability of bio-pesticides” which received a GMS of 56.21 and ranked third. On contrary majority of inorganic farmers identified “lack of quality seed, pest and disease resistant varieties for cultivation” as the most severe constraint which was ranked first with 59.27 GMS. This was followed by “unavailability of organic feedstock for compost production” which was ranked second with 57.62 GMS. The third severe constraint was “unavailability of bio-pesticides” with 53.91 GMS. In Dungarpur, organic farmers identified “unavailability of bio-pesticides” as most severe constraint which was ranked first with 65.84 GMS. The same issue was ranked second by the inorganic farmers with 56.51 GMS. The second most severe constraint was “lack of quality seed, pest and disease resistant varieties for cultivation” with 61.54 GMS. Conversely, inorganic farmers considered this a more pressing issue, ranking it first with 58.71 GMS. Additionally, both organic and inorganic farmers consistently placed “unavailability of organic feedstock for compost production” and “preparing organic inputs is labour demanding and expensive” at fifth and sixth positions, respectively. These issues received GMS scores of 48.96 and 32.61 from organic farmers, and 52.00 and 33.16 from inorganic farmers. The findings indicate that respondents from Dungarpur district were encountering more critical challenges, particularly the “unavailability of bio-pesticides” and “lack of high-quality, pest-and disease-resistant seed varieties for cultivation”. To overcome these challenges, it is recommended that the government and agricultural agencies strengthen the supply chain of bio-pesticides and promote local production units to ensure availability. Additionally, research institutes should focus on developing and distributing high-quality, pest and disease resistant seed varieties suitable for organic farming.

Further, analysis of Table 3 about the overall respondents illustrates that majority of respondents identified “lack of quality seed, pest and disease resistant varieties for cultivation” was the most severe input constraint in adopting organic farming, ranking it first with the highest overall GMS of 59.57, followed by second most severe constraints “unavailability of bio-pesticides” with 58.12 GMS. Moreover, respondents considered “scarcity of bio-fertilizers and manure” and “preparing organic inputs is labour-intensive and costly” as the least significant constraints, assigning them garret mean scores of 50.79 and 33.95, respectively. The findings are in line with the findings of Singh and Thakur (2022) who revealed that majority of respondents were facing the problem of non-availability of quality seeds as a major problem in adoption of organic farming. Similar findings are also reported by Saran & Sharma (2020) and Ghanghas *et al.* (2021).

**Labour and Machinery Constraints Perceived by the Farmers in Adoption of Organic Farming**

The data in Table 4 elucidates that in Bikaner majority of organic and inorganic farmers considered “wages and labour costs are high” as a most severe labour and machinery constraint. This issue was ranked first by both groups, with Garret Mean Scores of 70.00 for organic farmers and 67.87 for inorganic farmers. This was followed by “unavailability of skilled labour at peek time” which was ranked second by both organic and inorganic farmers. Another notable issue was “the charges for tractors, and power tillers are high” which was identified as the third major constraint, receiving Garret Mean Scores of 58.79 from organic farmers and 53.91 from inorganic farmers. In Dungarpur, most of organic and inorganic farmers considered “wages and labour costs are high” as a most severe constraint which was ranked first with highest garret mean score of 69.00 and 66.40, respectively. The organic farmers identified second most severe constraint as “lack of availability of tractors and machinery at the right time” with 61.23 GMS. The same issue was ranked third by the inorganic farmers with 56.64 GMS. The constraint stating “the charges for tractors, and power tillers are high” which was ranked third by the organic farmers with 56.04 GMS. On contrary, majority of inorganic farmers considered this more pressing issue, ranking it second with a GMS of 57.43.

The overall analysis of labour and machinery constraints faced by farmers in adopting organic farming (Table 4) revealed that majority of respondents considered “wages and labour costs are high” as a most severe constraint, with highest garret mean score of 68.32 and was ranked first. This was followed by “unavailability of skilled labour at peek time” and “the charges for tractors and power tillers are high” which was ranked second and third with 57.31 and 56.54 GMS. Moreover, respondents considered “high cost of maintenances of machineries” and “lack of awareness about the implements and machineries” as the least severe constraints, assigning them garret mean scores of 49.62 and 40.90, respectively. These findings are in conformity with the findings of Singh & Thakur (2022) and Murugan *et al.* (2024).

**Technical Know-How Constraints Perceived by the Farmers in Adoption of Organic Farming**

The data in Table 5 shows that in Bikaner, majority of organic farmers considered “limited guidance on the preparation of organic inputs” as the most severe constraint, assigning it the highest GMS of 68.29. In comparison inorganic farmers ranked this issue second with 59.52 GMS. For organic farmers, the second most pressing issue was “lack of knowledge about weed management practices in organic farming” with 58.74 GMS. Interestingly, inorganic farmers perceived this as an even more pressing concern, ranking it first with 62.50 GMS. Additionally, both organic and inorganic farmers consistently placed “limited knowledge of insect and pest control in organic farming”, “lack of knowledge about how to use liquid organic fertilizers” and “not enough demonstration units for preparing FYM, compost, or liquid manure” at third, fourth and fifth positions, respectively. These issues received GMS scores of 57.79, 47.93, and 42.44 from organic farmers, and 59.34, 46.56, and 39.76 from inorganic farmers. In Dungarpur, the majority of organic farmers identified “limited knowledge of insect and pest control in organic farming” as the most severe technical know-how constraint in adoption of organic farming, assigning it the highest GMS of 61.22. In contrast, inorganic framers ranked this issue second with 60.39 GMS. For organic farmers the second most critical technical know-how constraint was “lack of knowledge about weed management practices in organic farming” with garret mean score of 59.75. In comparison inorganic farmers ranked this issue third with 58.00 GMS. The constraint stating “limited guidance on the preparation of organic inputs” was ranked third by the organic farmers with 54.61 GMS. On contrary majority of inorganic farmers identified “limited guidance on the preparation of organic inputs” as the most severe constraint which was ranked first with 63.71. Furthermore, both groups of farmers consistently rated the following constraints in the same order “lack of knowledge about how to use liquid organic fertilizers” and “not enough demonstration units for preparing FYM, compost, or liquid manure” ranking them fourth, and fifth, respectively. These issues received GMS of 50.84 and 43.71 from organic farmers and 48.90 and 41.98 from inorganic farmers.

The overall analysis of technical know-how constraints faced by farmers in adopting organic farming revealed that majority of respondents considered “limited guidance on the preparation of organic inputs” as a most severe constraint with overall GMS of 61.53, followed by “lack of knowledge about weed management practices in organic farming” which was ranked second with 59.69 GMS. Moreover, respondents considered “lack of knowledge about how to use liquid organic fertilizers” and “not enough demonstration units for preparing FYM, compost, or liquid manure” as the least severe constraints, assigning them GMS of 48.56 and 41.97, respectively. The findings are in line with the findings of Shehrawat *et al.* (2016), Singh & Thakur (2022) and Devi (2024).

**Marketing Constraints Perceived by the Farmers in Adoption of Organic Farming**

The data presented in Table 6 depicts that in Bikaner, majority of organic farmers identified “low prices of produce” as a major constraint in adoption of organic farming which was ranked first with 70.44 GMS. The same issue was ranked second with 65.14 GMS by the inorganic farmers. The second most severe constraint was “marketing of produce is challenging due to the absence of specialized agencies” which was ranked second by the organic farmers with 68.85 GMS. In comparison inorganic farmers identified the same issue as a most critical constraint in adoption of organic farming and ranked first with 70.71 GMS. Another notable issue was “obtaining a certificate from the Participatory Guarantee System of India is a time-consuming process” which was identified as the third major constraint, receiving Garret Mean Scores of 60.51 from organic farmers and 54.37 from inorganic farmers. In Dungarpur, the majority of organic farmers identified “marketing of produce is challenging due to the absence of specialized agencies” as the most severe marketing constraint in adoption of organic farming, assigning it the highest GMS of 69.94. In contrast, inorganic framers ranked this issue second with 67.77 GMS. For organic farmers the second most critical marketing constraint was “obtaining a certificate from the Participatory Guarantee System of India is a time-consuming process” with GMS of 66.38. In comparison inorganic farmers ranked this issue third with 59.04 GMS. The constraint stating “low prices of produce” was ranked third by the organic farmers with 58.82 GMS. On contrary majority of inorganic farmers identified “low prices of produce” as the most severe constraint which was ranked first with 70.54.

The overall analysis of Table 6 revealed that majority of respondents reported “marketing of produce is challenging due to the absence of specialized agencies” as a most serious marketing constraint ranking it first with overall GMS of 69.32. The second most pressing issue was “low prices of produce” with overall GMS of 66.24, followed by “obtaining a certificate from the Participatory Guarantee System of India is a time-consuming process” and “transportation costs are higher due to the distant location of purchase agencies” which was ranked third and fourth with GMS of 58.91 and 54.27, respectively. Furthermore, the respondents identified “no specific incentive or price policy from the government that guarantees a remunerative return” and “shortage of the latest market insights” as the least significant marketing constraints with overall GMS of 45.10 and 43.33, respectively. Thus, the findings suggested that both organic and inorganic farmers were facing barriers such as lack of specialized agencies for product marketing, low selling prices, and lengthy certification processes under India's Participatory Guarantee System. This means that farmers were more affected by problems such as lack of proper space to sell organic produce, distant markets, and lack of transportation rather than government policies, possibly due to lack of awareness or access to such support mechanisms. To solve these problems, the government should improve local facilities for selling organic produce, make the certification process faster & easier, and spread more awareness about the support and schemes available to farmers. These findings are in conformity with the findings of Singh *et al.* (2025) who found that most respondents were struggling with the issues of low premium prices and poor marketing facilities for organic produce, which were seen as major obstacles in adopting organic farming. Similar findings are also reported by Ghanghas *et al.* (2021), Devi (2024), Jakhar (2024) and Singh *et al.* (2024).

**Psychological Constraints Perceived by the Farmers in Adoption of Organic Farming**

The data in Table 7 elucidates that in Bikaner, majority of organic farmers identified “lack of confidence in managing organic farming challenges” as the most serious psychological constraint, ranking it first with 60.00 GMS. The second most serious constraints were “limited understanding and inadequate techniques” with 55.73 GMS, followed by “mental fear for losing savings”, “limited awareness of the advantages associated with organic farming” and “family disagreements over transitioning to organic farming” which were ranked third, fourth, and fifth with garret mean score of 52.48, 41.40 and 38.52, respectively. On the other hand, inorganic farmers in Bikaner identified “limited understanding and inadequate techniques” as the most serious constraint (66.73 GMS) which was given rank first. For the inorganic farmers the second most serious constraint was “limited awareness of the advantages associated with organic farming” with 57.88 GMS, followed by “family disagreements over transitioning to organic farming” which was ranked third by the inorganic farmers with 53.84 GMS. Additionally, inorganic farmers consistently placed “mental fear for losing savings” and “lack of confidence in managing organic farming challenges” at fourth and fifth position with 51.21 and 42.99 GMS.

In Dungarpur, most of the organic farmers identified “limited understanding and inadequate techniques” as the most severe psychological constraint, ranking it first with highest GMS of 61.14 in comparison to inorganic farmers as the same issue was ranked second with 58.39 GMS. For the organic farmers the second most pressing constraint was “lack of confidence in managing organic farming challenges” with 58.56 GMS. In contrast, inorganic framers ranked this issue fourth with 50.36 GMS. Additionally, both organic and inorganic farmers consistently placed “mental fear for losing savings” at third position. This issue received GMS of 55.85 from organic farmers and 57.18 from inorganic farmers. The constraint stating “limited awareness of the advantages associated with organic farming” was ranked fourth by the organic farmers with 46.36 GMS. In contrast, inorganic framers cited this issue as a most severe constraint in adoption of organic farming and ranked first with 50.36 GMS. Furthermore, both organic and inorganic farmers consistently placed “family disagreements over transitioning to organic farming” at fifth place and this issue received GMS of 36.20 from organic farmers and 48.69 from inorganic farmers.

The overall analysis of Table 7 illustrating psychological constraints faced by the overall farmers in adoption of organic farming revealed that majority of respondents considered “limited understanding and inadequate techniques” as a most serious constraint with overall GMS of 59.53, followed by “mental fear for losing savings” which was ranked second with 57.32 GMS. The third severe constraint was “lack of confidence in managing organic farming challenges” with 54.04 GMS. Moreover, respondents considered “limited awareness of the advantages associated with organic farming” and “family disagreements over transitioning to organic farming” as the least severe constraints, assigning them GMS of 52.14 and 42.84, respectively. These findings reported that farmers may be willing to switch to organic farming, but were reluctant to do so due to lack of technical knowledge, training and confidence. Fear of financial losses makes the situation even more stressful. Addressing these issues through practical training programmes, success stories, peer support and financial safety nets can help reduce psychological resistance and promote wider adoption of organic farming practices. These findings are in conformity with the findings of Murugan *et al.* (2024) who concluded that majority of organic and non-organic farmers identified poor knowledge and methods of organic farming were the serious problems in the adoption of organic farming.

**Conclusion**

The study identifies a range of constraints that hinders farmers in adoption of organic farming. The key barriers include “low production during conversion period”, “low profit at the initial stage of organic farming”, “lack of quality seed, pest and disease resistant varieties for cultivation”, “wages and labour costs are high”, “limited guidance on the preparation of organic inputs”, “marketing of produce is challenging due to the absence of specialized agencies” and “limited understanding and inadequate techniques”. The study highlighted that the main economic challenges faced by farmers in adopting organic farming were “low profits during the initial stages” and “difficulty in accessing credit”. To overcome these issues, farmers can be supported through the formation of organic farming cooperatives or self-help groups, which can pool resources and access financial support more easily. Creating awareness about government subsidies and financial incentives available for organic farming can further reduce the financial burden during the transition period, helping farmers manage the initial low returns more effectively. In terms of marketing, “difficulty in selling their produce due to the lack of specialized agencies” emerged as a major constraint. To address this problem, organic producer-consumer clubs can be set up at State Agricultural Universities (SAUs) and their Krishi Vigyan Kendras (KVKs), using both physical and online platforms to strengthen the relationship between farmers and consumers. Information about organic farmers and the crops they grow can be shared on the website of universities and KVKs, helping to create a direct and transparent link between producers and consumers, serving farmers to effectively sell their produce at a fair price.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that they have no known competing financial interests OR non-financial interests OR personal relationships that could have appeared to influence the work reported in this paper.

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**Table 1:** **General Constraints Perceived by the Farmers in Adoption of Organic Farming**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. No.** | **Constraints** | **Bikaner** | **Dungarpur** | **Overall****N=400** |
| **OF****(n=100)** | **IOF****(n=100)** | **OF****(n=100)** | **IOF****(n=100)** |
| **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** |
|  | Dominance of the inorganic farmers in the local area  | 51.91 | IV | 63.39 | I | 51.91 | IV | 55.01 | III | 55.56 | IV |
|  | Slow conversion period from inorganic to organic  | 56.48 | II | 50.43 | V | 75.57 | I | 53.04 | IV | 60.86 | II |
|  | Low production during conversion period | 74.66 | I | 61.83 | II | 66.56 | II | 67.94 | I | 68.04 | I |
|  | Lack of government support | 36.26 | VI | 51.50 | IV | 35.84 | VI | 51.50 | V | 43.78 | V |
|  | Lack of facilities for testing soil & water | 55.74 | III | 53.18 | III | 59.80 | III | 56.97 | II | 56.42 | III |
|  | Lack of printed materials about organic agricultural techniques | 37.54 | V | 38.58 | VI | 37.54 | V | 36.51 | VI | 37.54 | VI |

GMS= Garret Mean Score

**Table 2:** **Economic Constraints Perceived by the Farmers in Adoption of Organic Framing**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. No.** | **Constraints** | **Bikaner**  | **Dungarpur**  | **Overall****N=400** |
| **OF** **(n=100)** | **IOF** **(n=100)** | **OF** **(n=100)** | **IOF** **(n=100)** |
| **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** |
|  | Lack of awareness about financial resources | 58.14 | III | 50.26 | IV | 56.78 | III | 58.71 | II | 55.97 | III |
|  | Not enough subsidies for production of organic crops | 36.15 | VI | 37.20 | VI | 35.23 | VI | 34.17 | VI | 35.69 | VI |
|  | Difficulty in accessing credit | 60.24 | II | 54.26 | III | 62.76 | II | 60.67 | I | 59.48 | II |
|  | Higher cost involved in the certification charges  | 39.54 | V | 46.90 | V | 37.43 | V | 44.98 | V | 42.21 | V |
|  | In the current inorganic production period of agriculture starting organic production is costly | 55.02 | IV | 56.64 | II | 54.01 | IV | 53.64 | IV | 55.58 | IV |
|  | Low profit at the initial stage of organic farming  | 67.37 | I | 59.10 | I | 68.42 | I | 57.83 | III | 63.18 | I |

GMS= Garret Mean Score

**Table 3:** **Input Constraints Perceived by the Farmers in Adoption of Organic Farming**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. No.** | **Constraints** | **Bikaner** | **Dungarpur** | **Overall****N=400** |
| **OF****(n=100)** | **IOF****(n=100)** | **OF** **(n=100)** | **IOF****(n=100)** |
| **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** |
|  | Unavailability of organic feedstock for compost production | 62.52 | I | 57.62 | II | 48.96 | V | 52.00 | V | 55.28 | III |
|  | Preparing organic inputs is labour demanding and expensive | 35.43 | VI | 34.61 | VI | 32.61 | VI | 33.16 | VI | 33.95 | VI |
|  | Lack of quality seed, pest and disease resistant varieties for cultivation | 58.74 | II | 59.27 | I | 61.54 | II | 58.71 | I | 59.57 | I |
|  | Scarcity of bio-fertilizers and manure | 51.98 | IV | 49.61 | V | 51.98 | IV | 55.06 | III | 50.79 | V |
|  | Lack of readily available organic input formulations | 46.96 | V | 51.64 | IV | 57.68 | III | 53.21 | IV | 52.37 | IV |
|  | Unavailability of bio-pesticides | 56.21 | III | 53.91 | III | 65.84 | I | 56.51 | II | 58.12 | II |

GMS= Garret Mean Score

**Table 4:** **Labour and Machinery Constraints Perceived by the Farmers in Adoption of Organic Farming**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. No.** | **Constraints** | **Bikaner** | **Dungarpur** | **Overall****N=400** |
| **OF****(n=100)** | **IOF****(n=100)** | **OF** **(n=100)** | **IOF****(n=100)** |
| **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** |
|  | Lack of availability of tractors and machinery at the right time | 46.98 | V | 39.55 | VI | 61.23 | II | 56.64 | III | 51.10 | IV |
|  | The charges for tractors, and power tillers are high | 58.79 | III | 53.91 | III | 56.04 | III | 57.43 | II | 56.54 | III |
|  | Unavailability of skilled labour at peek time | 63.99 | II | 57.01 | II | 53.64 | IV | 54.60 | IV | 57.31 | II |
|  | Wages and labour costs are high | 70.00 | I | 67.87 | I | 69.00 | I | 66.40 | I | 68.32 | I |
|  | Lack of awareness about the implements and machineries  | 40.41 | VI | 47.61 | V | 37.06 | VI | 38.53 | VI | 40.90 | VI |
|  | High cost of maintenances of machineries  | 49.72 | IV | 52.03 | IV | 47.43 | V | 48.29 | V | 49.62 | V |

GMS= Garret Mean Score

**Table 5:** **Technical Know-How Constraints Perceived by the Farmers in Adoption of Organic Farming**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. No.** | **Constraints** | **Bikaner** | **Dungarpur** | **Overall****N=400** |
| **OF****(n=100)** | **IOF****(n=100)** | **OF** **(n=100)** | **IOF****(n=100)** |
| **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** |
|  | Limited knowledge of insect and pest control in organic farming | 57.79 | III | 59.34 | III | 61.22 | I | 60.39 | II | 59.69 | III |
|  | Lack of knowledge about weed management practices in organic farming | 58.60 | II | 62.50 | I | 59.75 | II | 58.00 | III | 60.11 | II |
|  | Limited guidance on the preparation of organic inputs | 68.29 | I | 59.52 | II | 54.61 | III | 63.71 | I | 61.53 | I |
|  | Lack of knowledge about how to use liquid organic fertilizers | 47.93 | IV | 46.56 | IV | 50.84 | IV | 48.90 | IV | 48.56 | IV |
|  | Not enough demonstration units for preparing FYM, compost, or liquid manure | 42.44 | V | 39.76 | V | 43.71 | V | 41.98 | V | 41.97 | V |

GMS= Garret Mean Score

**Table 6: Marketing Constraints Perceived by the Farmers in Adoption of Organic Framing**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. No.** | **Marketing Constraints** | **Bikaner** | **Dungarpur** | **Overall****N=400** |
| **OF****(n=100)** | **IOF****(n=100)** | **OF** **(n=100)** | **IOF****(n=100)** |
| **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** |
|  | Marketing of produce is challenging due to the absence of specialized agencies | 68.85 | II | 70.71 | I | 69.94 | I | 67.77 | II | 69.32 | I |
|  | No specific incentive or price policy from the government that guarantees a remunerative return | 46.07 | V | 43.32 | V | 48.05 | V | 42.94 | VI | 45.10 | V |
|  | Obtaining a certificate from the Participatory Guarantee System of India is a time-consuming process | 60.51 | III | 54.37 | III | 66.38 | II | 59.04 | III | 58.91 | III |
|  | Transportation costs are higher due to the distant location of purchase agencies | 49.72 | IV | 52.03 | IV | 56.31 | IV | 57.90 | IV | 54.27 | IV |
|  | Shortage of the latest market insights | 42.07 | VI | 41.23 | VI | 44.03 | VI | 46.00 | V | 43.33 | VI |
| 1.
 | Low prices of produce | 70.44 | I | 65.14 | II | 58.82 | III | 70.54 | I | 66.24 | II |

GMS= Garret Mean Score

**Table 7:** **Psychological Constraints Perceived by the Farmers in Adoption of Organic Framing**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. No.** | **Psychological Constraints** | **Bikaner** | **Dungarpur** | **Overall****(N=400)** |
| **OF****(n=100)** | **IOF****(n=100)** | **OF** **(n=100)** | **IOF****(n=100)** |
| **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** | **GMS** | **Rank** |
| 1.
 | Limited understanding and inadequate techniques | 55.73 | II | 66.73 | I | 61.14 | I | 58.39 | II | 59.53 | I |
|  | Family disagreements over transitioning to organic farming | 38.52 | V | 53.84 | III | 36.20 | V | 48.69 | V | 42.84 | V |
|  | Mental fear for losing savings | 52.48 | III | 51.21 | IV | 55.85 | III | 57.18 | III | 57.32 | II |
|  | Limited awareness of the advantages associated with organic farming | 41.40 | IV | 57.88 | II | 46.36 | IV | 60.38 | I | 52.14 | IV |
| 1.
 | Lack of confidence in managing organic farming challenges | 60.00 | I | 42.99 | V | 58.56 | II | 50.36 | IV | 54.04 | III |

 GMS= Garret Mean Score