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Marketing and production bottlenecks in natural farming systems: A case study of zone III, Himachal Pradesh through Garrett's ranking technique

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Abstract
Natural farming is gaining momentum as a sustainable agricultural practice in Himachal Pradesh. Despite its ecological advantages, farmers face significant challenges in marketing their produce. This study investigates the key marketing constraints encountered by natural farmers in Zone III of Himachal Pradesh using the Henry Garrett Ranking Technique. Primary data were collected from 300 farmers, selected from 30 panchayats across four districts-Shimla, Kullu, Mandi, and Chamba. Farmers were asked to rank 15 identified constraints, and the Garrett method was applied to derive mean scores and prioritize the issues. The results revealed that the non-availability of specialized markets was the most critical constraint (Rank I), followed by the labour-intensive nature of operations (Rank II) and unfair pricing of produce (Rank III). Other prominent constraints included higher wage rates, lack of technical knowledge, and low consumer awareness about natural farming produce. The study highlights the need for dedicated marketing infrastructure, capacity-building programs, and policy support to ensure fair market access and price realization for natural farmers.

Keywords: Henry Garret ranking, marketing, natural farming, problems, sustainable agriculture

Introduction

In India, natural farming has its roots in ancient agroecological methods and is being pushed more and more as a practical route to sustainable agriculture. It lowers environmental deterioration, revitalizes soil health, and minimizes external inputs (Khadse *et al*., 2018; Sharma *et al*., 2020) [5, 13]. Under the Prakritik Kheti Khushhal Kisan Yojana (PK3Y), which has acquired considerable popularity in agro-ecological Zone III, which includes mid-hill districts like Mandi and Kullu as well as portions of Solan and Shimla, Himachal Pradesh has made proactive measures to embrace natural farming (PK3Y Report, 2024) [10]. In developing nations, increasing agricultural output and promoting economic growth depends heavily on an efficient agricultural marketing system. Until the produce reaches the market and brings in money for the producers, agricultural development is not complete. The agricultural industry is the main source of income in India, where a sizable section of the populace is employed in agriculture and related fields. However, there are several obstacles in the way of both natural farming commodity production and commercialization. Farmers are better equipped to sell their produce at the correct time and location, resulting in more favorable returns, when they have timely access to market information, such as arrival volumes and prevailing pricing. On the other hand, as market supply increases and prices fall during peak harvest seasons, a lack of such access frequently leads to distressed sales. The significant reliance on middlemen by Indian farmers makes the marketing of perishable goods, particularly fruits and vegetables, even more challenging. These intermediaries usually control the market environment, adding little value while keeping an excessive amount of the revenues. Consequently, inefficiencies and unjust pricing practices affect both producers and consumers (Namboodiri and Gandhi, 2002) [4].

Even with natural farming's ecological and agronomic advantages, selling is still a significant barrier. In addition to receiving low price premiums for their natural produce, farmers frequently

do not have access to specialized markets. Furthermore, their competitiveness in traditional markets is further restricted by low consumer awareness and the lack of branding and certification systems (Desai, 2021; Ramesh *et al*., 2010) [2, 11]. In order to identify the main obstacles to the selling of product grown naturally and to provide suggestions for institutional and regulatory changes, this paper presents an empirical case study from Zone III of Himachal Pradesh. The difficulties faced by primary farmers are exacerbated by the fact that intermediaries have historically controlled agricultural markets and frequently participate in immoral and exploitative activities. Regulation and supervision of marketing activities at places of exchange are necessary since these intermediaries frequently act without regard for the welfare of farmers. Even with the creation of regulated marketplaces, favorable circumstances for effective agricultural marketing are frequently absent. Dynamic systems and a well-structured data infrastructure are essential for effective agriculture marketing.

Materials and methodology
The Henry Garrett Ranking Technique, a statistical approach that is well-suited for evaluating ordinal data and drawing collective judgments from a group of respondents, was used for this study to methodically identify and rank these difficulties (Garrett & Woodworth, 1969) [3]. The method provides a clear hierarchy of perceived marketing restrictions by converting subjective evaluations into quantitative ratings.
The study was carried out in 2022-2025 at Dr. Yashwant Singh Parmar University of Horticulture and Forestry's Department of Social Sciences, College of Forestry, in Nauni, Solan, Himachal Pradesh, India. A pre-tested and organized schedule was used to conduct in-person interviews with chosen respondents in order to gather primary data. Five traders, five wholesalers, and five retailers were randomly selected from the different markets to examine the different facets of Natural farming produce marketing. The Department of Horticulture, the Department of Agriculture, other government departments, revenue offices, and accessible literature and websites were the sources of secondary data on markets and pricing.
The Garret ranking technique was used to examine constraints (Rao *et al*., 2015) [8]. It is important to note that these constraints were based on the responses of all sampled Natural farmers. Respondents were asked to rank the problems. In Garrett's ranking technique, these ranks were converted into percent position using the following formula:

$$\text{Percent position} = \frac{100(R_{ij} - 0.5)}{N_j}$$

Where,
R_{ij} = Ranking given to the ith attribute by the jth individual
N_j = Number of attributes ranked by the jth individual.
By referring to the Garrett's Table, the obtained percentage positions were converted into scores. The problems with the highest mean value were considered as the most ones and the others followed in that order.

Results and Discussion
The results reveal that the non-availability of specialized markets was ranked as the most critical marketing constraint by natural farmers in Zone III. This indicated a severe institutional gap in dedicated market spaces or procurement systems that can recognize and reward the unique value of natural farming

produce. Farmers were often forced to sell their output in conventional markets where differentiation and price premiums for natural produce were absent.
The second-highest constraint was the labour-intensive nature of natural farming. Since the system relies heavily on manual operations due to the avoidance of chemical inputs and mechanized practices, it significantly increased the labor demand. This issue was compounded by the third-ranked constraint: unfair pricing, which discouraged farmers from sustaining or expanding natural farming practices.
High wage rates and shortage of skilled labor were also highlighted, suggesting that the cost of labor was not only high but also that trained personnel capable of managing natural farming practices were limited. This underlined the need for government-supported training and skill enhancement programs. Lack of technical knowledge and consumer awareness ranked fifth and sixth, respectively, implying both a supply-side and demand-side informational gap. Farmers lacked the know-how to improve productivity under natural systems, while consumers remained unaware of the health and ecological benefits of naturally grown food, leading to poor demand pull in the market. Other significant but lower-ranked constraints included lack of training, transport, extension services, and weather uncertainty. Although ranked lower, these factors cumulatively affected farmers' access to markets and their resilience in production and post-harvest management.

Table 1: Distribution of sampled households according to the size of land holdings

Sr. No	Categories	Average size of land holdings (ha)	Number of farmers	Percentage of Farmers
1	Marginal (<1 ha)	0.77	174	58.00
2	Small (1-2 ha)	1.76	92	30.70
3	Medium (2-4 ha)	2.95	34	11.30
	Total	-	300	-

Table 2: Problems faced by respondents in the study area

Problem Name	Garret Score	Per cent	Rank
Non availability of specialised market	3452	34.52	I
Labour Intensive	3215	32.15	II
Unfair Price of Produce	3167	31.67	III
Higher Wage Rates	3016	30.16	IV
Lack of Technical Knowledge	2950	29.5	V
Consumer Awareness about SPNF Produce	2835	28.35	VI
Inedequate Training Facilities	2703	27.03	VII
Shortage of Skilled Labour	2661	26.61	VIII
Lack of Irrigation Facility	2454	24.54	IX
Knowledge of Package of Practices	2303	23.03	X
Lack of Tansport Facilities	2261	22.61	XI
Insect pest	2214	22.14	XII
Lack of Extention Facilities	2156	21.56	XIII
Uncertain Weather	2112	21.12	XIV
Higher commision	2089	20.89	XV

Conclusion
In summary, a total of 300 respondents were chosen and allocated based on the size of their land holdings. There were 174 farmers in the marginal (<1 hectare) farm group overall. There were 92 small farmers (1-2 ha), and 34 medium farmers (2-4 ha). The primary constraint in production and marketing encountered by the chosen respondents were the absence of a specialized market, ZBNF's labor-intensive character, price exploitation, higher wage rates, and lack of consumer awareness. Some of the limitations, such as the absence of irrigation

infrastructure, animal attacks, transportation facilities, and insect pest concerns, were still significant but not as important as labor and marketing-related problems. To overcome these bottlenecks in the study area, promotion and development of markets for SPNF products should be done, along with drawing attention to the fact that the produce is totally chemical-free. The advantages of SPNF align with agriculture's long-term sustainability and resilience objectives. It has a lower carbon footprint than conventional farming, produces crops without the use of dangerous chemicals, guarantees food safety, lowers pollution, protects ecosystems and biodiversity, enhances soil organic matter, structure, and microbial activity, and can increase profitability, particularly when paired with prem.

Acknowledgement and Conflict of Interest

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