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Research Paper

Constraints to Implementation of Market Information System (MIS) on Minor Forest Produce (MFP) in High Altitude and Tribal (HAT) Zone of Andhra Pradesh

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ABSTRACT

Marketing information is one of the noteworthy inputs for any organization and individual, where it helps in the decision-making of future marketing events, and its needed set of activities known as MIS. The present study focused on constraints in the implementation of MIS in the HAT zone, the severities of the constraints were quantified with the aid of the Garrett ranking technique. The major findings of the study revealed that mobile network issues with a Garret score of 68.19, delays in updating market information with 64.89, frequent fluctuations in prices with 55.24, and market information not timely 46.96 respectively are the major problems in the implementation of MIS in HAT zone. The least prioritized problems of the study are low literacy with a Garret score of 43.56, mitigated training programs on the grading of MFP with 35.29, and higher transportation cost with 21.73 respectively.

HIGHLIGHTS

- The study focused on problems in implementation of MIS in tribal areas.
- Garrett ranking technique was applied to study problems in implementation.
- The study found that, mobile communication, delay in updating market information and price fluctuation of MFP are major problems.

Keywords: Girijan Co-operative Corporation (GCC), HAT zone, MIS, MFP and constraints

HAT zone produces a wide range of MFP, and their prominence in local, national and global economies, their contribution to the food security and significance to the biological diversity gained widespread recognition during the past decade. MFP serve as vital sources of food, flavorings, perfumes, beverages, polishes, construction materials, spices, medicines, paints and extracts used in the chemical industry (Singh and Kumar, 2021). According to Forest Stewardship Council, "*All forest products, except timber, including other*

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materials obtained from trees such as resins and leaves, as well as any other plant and animal products" are considered as MFP (Anonymous,1999). Total of six commodities hill broom *(Thysanolaena maxima)*, honey, markingnut (*Semecarpus anacardium*), myrobalan (*Terminalia chebula*), naramamidi bark (*Litsea deccanensis*) and seeded tamarind (*Tamarindus indica*) (Kumar *et al.* 2022b) was selected in the present study because it contributes 84% share value of income.

It is known that MIS as a process of gathering, processing, storing and using information to make better marketing decisions and to improve marketing exchange (Nickels, 1986). However, the raw data of market prices of MFP will not be directly useful for farmers and stakeholders in going for decision making, unless it is processed, analyzed and projected. In the tribal areas of Andhra Pradesh, the GCC /GPCMS and PPCs (Primary Procurement Centers) has been charged with the responsibility to disseminate market information among tribal farmers. Dissemination of market information was an important function of GPCMS/PPCs which is performed through displaying of the prices prevailing in the market on the notice boards and broadcasting through SMS, television, All-India Radio (AIR) and other media (Kumar *et al.* 2022a).

However, the past studies revealed that the situation to systematic dissemination of MIS to tribal farmers in Andhra Pradesh is not well-developed and could generally be concluded that there is no adequate system that manages the gathering, processing and dissemination of timely information. Further, (Kshirsagar, 2006) has also tried to indicate some of the limitations and weaknesses of MIS in tribal areas *viz.*, poor data processing and data management practices, lack of standardized formats for data collection, lack of well documented instructions necessary for data collection; and insufficient co-operation among data collectors and data processors (at different levels). Access to market information is very crucial towards stabilizing the annual income of tribal farmers through realizing higher prices for their MFP. This is important in the sense of contributing towards more efficient marketing, particularly improved spatial distribution of MFP. With this background present study was carried out on constraints in implementation of MIS on MFP in HAT zone of Andhra Pradesh.

MATERIALS AND METHODS

In Andhra Pradesh, HAT zone was selected in view of the major availability of MFP and this zone covers hilly areas of four districts *viz.,* Visakhapatnam, Vizianagaram East Godavari and Srikakulam. The relevant information for the study gathered from GCC Visakhapatnam, and it was act as head office for divisional offices and GPCMS offices of HAT zone for MFP transaction. Multi-stage sampling design was employed for collection of primary data i.e. Division level, GPCMS (Mandal level) and shandies (Weekly markets) level during the year of 2020–21 in four districts of HAT zone. GPCMS are government offices that come under control of divisional office of GCC, and some shandies was existed under jurisdiction of mandal level GPCMS. Shandies are the weekly markets where, generally found the GPCMS officials and private traders, and tribal farmers transact their MFP to either GPCMS officials or private traders or both depending upon the relative prices offered by these two market players. Thus, a total of 360 samples selected in which 120 farmers from 10 GPCMS (across five Divisions) and 240 farmers from 20 shandies were selected for this investigation, and data were recorded with the help of schedules.

Garrett's Ranking Technique

Garrett's ranking test was employed to identify the constraints faced by the farmers regarding implementation of MIS by the GPCMS/PPCs in HAT zone. The major prevailing constraints highlighted during preliminary survey were arranged in ascending order and were converted into ranks by using Garrett's formula. Accordingly, these ranks were converted to scores by referring to Garrett's table. Garrett's formula for converting ranks into percent is given by:

$$Percent\ position = \frac{100 * \left(R_{ij} - 0.50\right)}{N_j} \quad \ldots(1)$$

Where, R_{ij} = Rank given for i^{th} item by j^{th} farmer; N_j = Number of items ranked by j^{th} farmer; 0.5 subtracted

from R_{ij} as rank is an interval on a scale and its mid-point best represents an interval.

The per cent position of each rank was converted into scores referring to the table given by (Garrett and Woodworth, 1969). For each constraint, the scores of individual respondents were added together and divided by the total number of the respondents for whom scores was added. These mean scores for all the constraints were arranged in descending order; the constraints were accordingly ranked.

RESULTS AND DISCUSSION

Garrett's ranking technique was employed to analyze and prioritize the constraints in the present MIS in HAT zone. Seven key constraints concerning MIS in HAT zones were identified in the study area. Despite the similarities in the nature of the problems, the severity of each problem is unique to each division. The severities of the constraints were quantified with the aid of Garrett ranking technique.

Chintapalli

Findings from Table 1 explains Chintapalli division has poor mobile communication infrastructure and specified by the Garrett score of 76.04, results corroborate with the findings of Roy, (2014). Even if there exists a proper connectivity between the GCC staff and farmers, the former finds it hard to receive updated market information from the Divisional office due to poor connectivity, which affects the farmers indirectly; the Garrett score of 73.15 supports this.

Chintapalli mandal was at an altitude of 1000 m above sea level, it is even difficult to install mobile network towers. However, keeping in view the digital transformation of the agriculture sector, the Government of Andhra Pradesh is making all efforts for setting up new mobile towers across all the divisions in HAT zone with the assistance of the ITDA (Integrated Tribal Development Agency) through a private agency. As service providers were hesitant with inherent fears, most cell towers are within the premises of police stations.

Paderu

It can be observed from Table 1 market information not timely is the top most prioritized problem in Paderu, which recorded a Garrett score of 73.69, these findings are in line with the findings of Hatai and Panda (2015), and Hatai, (2016). It is interesting that though in this division, there were no mobile network issues, unlike other divisions, but due to lack of adequate staff, there is no frequent updating of market information. This was a serious concern on the part of tribal farmers in collection of MFP in relevance to the price information/trends in the locality. So, the staff strength should be streamlined and the GPCMS should use a combination of the Internet and cell phones to help farmers in disseminating timely and updated information to farmers even in the remotest parts of the division. Unavailability of timely market information from GCC affected the farmers of this division to the highest degree, which in turn led to provision of outdated information, evidenced by the Garrett score of 70.25 putting this at the second. Less severity of higher transportation costs on the farmers (Garret score of 23.68) could be attributed to either good road connectivity or affordability of transportation services.

Parvathipuram, Rampachodavaram and Seethampeta

These three divisions have two common traits: proximity to plain areas, and high trader competition. Despite the GCCs not having updated market information to disseminate, most farmers remain unaffected due to proper information provision by traders, who offer such services to survive the competition. Higher transportation costs in Seethampeta recorded a Garrett score of 37.27, making it the sixth severe constraint reported in Table 1. This leads to the conclusion that the road connectivity of Seetampeta is better than Parvathipuram and Rampachodavaram.

Hat Zone

The table 1 reveals on an aggregate level, in HAT zone, issues with mobile telecommunication were identified

Table 1: Prioritization of constraints with respect to MIS in HAT zone

Sl. No.	Constraints	Chintapalli (n=72)		Paderu (n=84)		Parvathipuram (n=84)		Rampa chodavaram (n=60)		Seetampeta (n=60)		HAT zone (N=360)	
		Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
1	Mobile network problems	76.04	I	48.01	IV	74.21	I	79.18	I	80.75	I	68.19	I
2	No updated market information	73.15	II	70.25	II	72.14	II	75.42	II	78.88	II	64.89	II
3	Frequent fluctuations in prices of MFP	59.24	III	55.28	III	47.64	IV	56.75	IV	60.15	III	55.24	III
4	Higher transportation cost	51.90	IV	23.68	VII	56.46	III	62.85	III	37.27	VI	21.73	VII
5	Less number of trainings on grading of MFP	46.68	V	44.38	V	42.60	V	40.80	VI	53.48	V	35.29	VI
6	Low literacy of tribal farmers in accessing towards published information and GCC website	38.21	VI	37.19	VI	36.77	VI	27.98	VII	33.75	VII	43.56	V
7	Market information not timely	25.35	VII	73.69	I	21.38	VII	51.63	V	58.13	IV	46.96	IV

the major constraint results corroborates with the findings of Olajide and Uwaya, (2013) consequent to which, the second and third severe constraints, namely delayed updating of market information, followed by price fluctuations this finding was in line with the findings of Hatai, (2022). Since these plagues even those personnel of GCC, farmers fail to access updated information at the right time, and results corroborates with the findings of Mehta *et al.* (2021) which was observed as the fourth constraint.

However, literacy rate issues were not considered major issue, and this finding is in line with the findings of Mwombe *et al.* (2014). Low frequency of trainings on grading of MFP had always been the characteristic feature of HAT zones due to poor physical and virtual connectivity, but this continues to improve over the years due to constant institutional intervention this finding is in line with the findings of Kshirsagar, (2006), and Amrutha and Reddy (2015). Overall, except in few remotest corners of the study area, transportation facilities have relatively improved in comparison to over a decade ago, and are considered less severe amongst the identified constraints. The informal discussions held with the farmers and traders further revealed lack of proper coordination among Government departments like ITDA, GCC, Banks, Andhra Pradesh Forest also should deserve special attention in HAT zone.

CONCLUSION

The major constraints in implementation of market information were Mobile network issues, no updated of market information, fluctuated prices of MFP and market information not timely was first, second, third and fourth constraints respectively. Low literacy level, less number of trainings on grading and higher transportation cost was least prioritized constraints in the study area. Most of the information disseminated in the studied area still involved high degree of human contact. Based on feasibility in the locality, Governments should provide communication services along with updated timely information and conduct awareness programs at village level about importance of market information in transacting minor forest produce.

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