



Assessment of Awareness and Consumption Patterns of Seasonal Fruits and Vegetables Among Rural Households

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Water scarcity poses a formidable challenge to agricultural sustainability and rural livelihoods in India. This article evaluates the role of National Service Scheme (NSS) volunteers in driving awareness, adoption and community mobilization for water conservation practices across rural villages in Rajnandgaon district, Chhattisgarh (Kopedih, Barga and Torankatta). Utilizing a structured participatory approach involving baseline surveys, educational campaigns, Shramdaan and follow-up assessments across 120 rural households, the study analyzes the transition in community perceptions and water utilization habits. The empirical results demonstrate that NSS interventions increased general awareness of water conservation to 59.2% and achieved near-universal awareness of NSS-led initiatives (81.7%). High community participation was recorded in awareness rallies (90%) and tree plantation drives (85.8%), leading to significant behavioral adoption in domestic water-saving habits (89.2%) and tree planting (85.0%). However, technical structures like rooftop rainwater harvesting (60.0% adoption) face constraints due to capital costs and technical knowledge. The article highlights the efficacy of youth volunteerism in bridging the gap between state water management policies and grassroots community action.

Keywords: Water Conservation, Community mobilization, Shramdaan and Rainwater Harvesting.

Introduction and Background

Context and problem statement: Seasonal fruits and vegetables are important sources of vitamins, minerals, dietary fibre and other bioactive compounds in rural diets. Regular consumption of locally available seasonal produce can contribute to dietary diversity, food security and better utilization of local horticultural resources. However, household consumption may be influenced by awareness, affordability, availability, seasonality, cultural preferences, storage facilities and access to local markets. Regional significance and nutrition context: Chhattisgarh has a predominantly rural population and an agriculture-based economy in which horticultural crops form an important component of household production and local markets. Seasonal availability of crops such as tomato, brinjal, chilli, cauliflower, cabbage, gourds, leafy vegetables and fruits provides opportunities for improving household dietary

diversity. Understanding how rural families select, purchase, grow and consume seasonal fruits and vegetables is therefore relevant for nutrition education and rural extension.

Role of Youth Mobilization through NSS: The National Service Scheme (NSS), guided by the motto 'NOT ME BUT YOU', provides a platform through which student volunteers can connect educational institutions with rural communities. Through household visits, awareness meetings, demonstrations, posters, nutrition messages and participatory activities, NSS volunteers can encourage informed food choices and greater use of locally available seasonal produce. The present study is designed to assess awareness and household consumption patterns and to examine the role of NSS-based awareness activities in strengthening knowledge and intended adoption.

Table 1: Seasonal fruit and vegetable awareness themes and NSS activities

Awareness Theme	NSS Activity	Expected Household Relevance	Field Indicator	Significance
Identify locally available produce by season	Seasonal food calendar	Improves informed selection	Households identifying seasonal items	Supports dietary variety
Explain vitamins, minerals and fibre	Nutrition talk/poster	Improves food awareness	Respondents reporting correct benefits	Supports healthier choices
Washing, cutting and cooking practices	Demonstration	Reduces avoidable food-safety risks	Households reporting safe practices	Improves food-use quality
Grow suitable seasonal vegetables at home	Garden planning	Improves local access	Households maintaining/starting gardens	Links horticulture with nutrition
Prefer locally available, affordable produce	Household counselling	Supports practical adoption	Households citing local sources	Encourages sustainable choices

Study area, Research methodology and intervention strategy

Study Location Profile: The proposed research and NSS field interventions are focused on Rajnandgaon district, Chhattisgarh, in selected rural villages associated with the college NSS unit. The study area represents an agriculture-oriented rural setting where households have access to seasonal vegetables and selected fruit crops through farm production, village markets and nearby retail markets.

Table 2: Baseline profile of Kopedih village

Village	Kopedih
Tehsil	Dongargaon
District	Rajnandgaon
Main market	Rajnandgaon
Krishi Upaj Mandi	Rajnandgaon
Location	07 km from college of horticulture
Total population	1321 (Male-684, Female-637)
Total no. of farmers	357
Total geographical area	257.47 ha
Total cropped area	162 ha
Forest area	Nil
Cropping pattern	Vegetable – Tomato, Brinjal, Chilli, Cauliflower, Cabbage, Knol Khol, Pointed Gourd; Fruit Crop – Musk Melon; Ornamental Crop – Marigold; Field Crop – Rice, Wheat/Chickpea

Sampling and research design: A total sample of N = 120 adult household respondents is used in the illustrative research framework, representing households from Kopedih, Barga and Torankatta. The study follows a participatory action-research approach combining household interviews, PRA (Participatory Rural Appraisal), seasonal food-listing, market-

source mapping and pre- and post-awareness assessment. For an actual submission, all frequencies and percentages must be replaced or verified using the original field schedules and respondent records.

Intervention Framework: The NSS extension program was designed in structured phases:

- (1) Baseline Survey & PRA Mapping to document seasonal fruits and vegetables available to households and identify major consumption constraints.
- (2) Multi-channel awareness campaigns through door-to-door visits, nutrition talks, posters, leaflets, local-language messages and small-group discussions on seasonal produce, dietary diversity and safe preparation.
- (3) School- and community-based activities including essay, slogan, drawing and quiz competitions to encourage students and families to discuss healthy seasonal food choices.
- (4) Demonstration and household action involving kitchen-garden planning, seasonal food calendars, simple preparation demonstrations and discussion of low-cost ways to increase fruit and vegetable intake.
- (5) Follow-up Evaluation Visits to assess changes in awareness, reported consumption frequency, source of produce and household willingness to maintain seasonal food practices.

Results and Discussion

Findings: The illustrative dataset below is structured to demonstrate how the proposed NSS field study can be analysed using descriptive statistics. It should not be interpreted as verified field evidence until the underlying household survey data are collected and entered.

Sample Demographics and Baseline Awareness

The illustrative sample comprises 120 respondents representing different rural socio-economic backgrounds, including male and female household decision-makers and households with different landholding and livelihood profiles. Educational attainment is expected to range from no formal schooling to postgraduate education, which may influence access to nutrition information and food-choice awareness. Before the NSS awareness intervention, the proposed assessment focuses on whether households recognize seasonal availability, understand the nutritional value of fruits and vegetables, know recommended food-safety practices and regularly include a variety of seasonal produce in household meals.

Table 3: General awareness and awareness specifically regarding seasonal fruits and vegetables

Awareness Category	Aware (Freq)	Aware (%)	Not Aware (Freq)	Not Aware (%)
Knowledge of seasonal fruits/vegetables	78	65.0%	42	35.0%
Awareness of NSS nutrition activities	96	80.0%	24	20.0%

Discussion: The baseline assessment should distinguish between general awareness of healthy eating and specific practical knowledge, such as identifying locally available seasonal produce, understanding dietary variety, and knowing safe washing, storage and preparation practices. The post-intervention comparison should be based only on verified survey observations.

Community Participation in NSS Extension Activities

Table 4: Details of household participation across major NSS nutrition-awareness intervention categories

NSS activity category	Participated (Freq)	Participated (%)	Not Participated (Freq)	Not Participated (%)
Household awareness visits	106	88.3%	14	11.7%
Nutrition awareness meetings	94	78.3%	26	21.7%
Seasonal food demonstrations	86	71.7%	34	28.3%
Kitchen-garden activities	72	60.0%	48	40.0%

Discussion: Participation can be assessed across household visits, awareness meetings, seasonal food demonstrations and kitchen-garden activities. Activities requiring little financial investment and using locally familiar foods are expected to be easier for households to participate in, while activities requiring additional time, inputs or space may have lower participation.

Household Consumption Patterns of Seasonal Fruits and Vegetables

Table 5: Illustrative household consumption pattern after the awareness intervention

Consumption Indicator	Adequate/Regular (Freq)	Regular (%)	Not Regular (Freq)	Not Regular (%)
Seasonal vegetables in household meals	101	84.2%	19	15.8%
Seasonal fruits consumed weekly	88	73.3%	32	26.7%
Variety of 3+ seasonal items/week	79	65.8%	41	34.2%
Produce from kitchen garden/home production	67	55.8%	53	44.2%

Discussion: Consumption should be assessed by frequency, variety and source of seasonal produce rather than by a single food item. The analysis can include household-grown produce, village-market purchases and produce obtained from nearby markets. Seasonal availability, price, storage and family preference should be recorded as potential determinants.

Operational Constraints: Several practical factors may influence household consumption of seasonal fruits and vegetables during the field intervention:

- Seasonal and Market Variation:** Availability and prices change across months, making continuous access to particular fruits or vegetables difficult.
- Socio-Economic & Literacy Barriers:** Differences in income, education and nutrition knowledge may affect food choices and the usefulness of conventional written materials.
- Taste and Cultural Preferences:** Household preferences, children's food choices and established cooking practices may limit dietary diversification.
- Storage and Food-Safety Constraints:** Limited refrigeration and storage facilities can reduce the period for which fresh produce can be safely retained.
- Time and Labour Constraints:** Women and other household members may have limited time for kitchen-garden management, food preparation or participation in awareness meetings.

Strategic Recommendations and Policy Action Plan

Actionable Roadmap: Based on the proposed field framework, the following measures can strengthen NSS-led nutrition and horticulture awareness activities:

1. Formalize partnerships between University NSS units, Krishi Vigyan Kendras (KVKs), local health workers and Gram Panchayats for recurring seasonal-food awareness campaigns.

- **Seasonal Food Calendar:** Develop village-level calendars showing locally available fruits and vegetables by season, with simple nutrition and preparation messages.

- **Demonstration-Led Extension:** Establish small kitchen-garden and seasonal-food demonstration units at suitable community or educational locations.

- **Low-Cost Nutrition Messaging:** Promote affordable, locally available produce and practical preparation, washing and storage practices through local-language communication.

- **Youth and School Engagement:** Sustain student competitions, quizzes, rallies and household assignments to encourage discussion of fruit and vegetable consumption within families.

- **Follow-up and Record Keeping:** Conduct periodic household assessments to document actual changes in awareness and consumption and maintain transparent field records.

Conclusion

The proposed NSS field study provides a structured framework for assessing awareness and consumption patterns of seasonal fruits and vegetables among rural households. NSS volunteers can support nutrition education by connecting horticultural knowledge with practical household food choices, seasonal availability and local production. The final conclusions regarding awareness levels, consumption frequency and intervention impact should be based on verified household survey data rather than illustrative values.

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