Dietary Patterns of Agricultural Families in a Developing District of South India

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Introduction

• In India 70% of the population depend on agriculture and agriculture sector employs >10% of the workforce.
• Agriculture contributes 33% of India's GDP.
• Under Nutrition is a major problem of developing countries like India and is not only the result of low food quantities consumed, but also of poor dietary diversity.
• Small farmers constitute 83% of India's agrarian-population & are more vulnerable to food insecurity.
• Although there is an established link between agriculture and nutrition but dietary patterns of Indian farmers is less known.

Research Questions

• To examine the food consumption patterns of farmer & non-farmer households in the context of a globalizing food environment.
• To determine the difference in the food consumption patterns among the different categories of farmers.

Data and methods

• The data used in this study is part of a larger study on drivers of dietary change in Indian Households conducted in Vijayapura district in the Southern state of Karnataka.
• Representative sample of 487 households from rural & urban areas.
• Based on land holding status, samples were identified for farmers(232) and non-farmers(235). These 467 farmers were further divided into 3-groups i.e marginal and small(116), semi-medium(67) and medium & large(69) farmers*.
• A Food Frequency Questionnaire (FFQ) was administered to collect data on the consumption frequency of 69 foods and beverages, which were divided into 4 broad food groups:
  i) Local foods and snacks;
  ii) Animal source foods;
  iii) Non-local Indian/global foods;
  iv) Beverages.
Within each food group, items were categorized as local, non-local Indian, and Global.
• Farmers were asked about 3 major crops grown for household consumption purpose also.

Analysis

• For analysis, FFQ-data was converted into the number of times per week that the food item was consumed. A food variety score (FVS) was calculated by summing the number of food items consumed.
• Statistical methods such as student’s t-test and ANOVA-test were used to compare average frequency of intake and FVS between farmer and non-farmer households and between the three-farmer groups.

Results

• Farmers reported that the 3 major crops they grow for household consumption were: Jowar, Toor and Chickpea.
• Farmer households consumed fruits, dairy and pulses more frequently (10-17 times/week) compared to non-farmer households (9.7±15.1 times/week), while consumed animal source foods such as eggs, mutton and chicken/fish, and beverages like, soda & energy drinks, less frequently (P<0.05).

Demographic and socio-economic-profile of the agricultural landholders (LH) & Non-landholders(NLH) families in Vijayapura district

Food Consumption patterns (times/week) and food variety score among agricultural landholders and agricultural non-land holders in Vijayapura district.

<table>
<thead>
<tr>
<th>Food Groups</th>
<th>Total Land Holders (N=252)</th>
<th>Marginal &amp; Small Farmers (0.1-1.99 N=116)</th>
<th>Semi-medium farmers (2-3.99 N=67)</th>
<th>Medium &amp; Large farmers (4+ N=69)</th>
<th>One way ANOVA (F-test)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staples and Local Foods</td>
<td>Mean ± SD</td>
<td>Mean ± SD</td>
<td>Mean ± SD</td>
<td>Mean ± SD</td>
<td>F-Value</td>
<td>P-value</td>
</tr>
<tr>
<td>Rice and rice-based dishes</td>
<td>8.2 ± 2.2</td>
<td>7.6 ± 2.3</td>
<td>7.3 ± 2.5</td>
<td>8.3 ± 2.3</td>
<td>1.12</td>
<td>0.32</td>
</tr>
<tr>
<td>Vegetables &amp; Fruits</td>
<td>10.7 ± 2.6</td>
<td>10.7 ± 2.7</td>
<td>10.7 ± 2.8</td>
<td>10.7 ± 2.7</td>
<td>0.12</td>
<td>0.90</td>
</tr>
<tr>
<td>Wheat, pearl millet, sorghum</td>
<td>7.1 ± 0.9</td>
<td>7.2 ± 0.9</td>
<td>7.6 ± 1.0</td>
<td>8.1 ± 1.0</td>
<td>1.76</td>
<td>0.18</td>
</tr>
</tbody>
</table>
| Food crops grown for household consumption among agricultural landholders of different land sizes in Vijayapura district

<table>
<thead>
<tr>
<th>Crops grown for household consumption (pc/household)</th>
<th>Marginal &amp; Small Farmers (0.1-1.99)</th>
<th>Semi-medium farmers (2-3.99)</th>
<th>Medium &amp; Large farmers (4+</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jowar</td>
<td>55</td>
<td>60</td>
<td>65</td>
<td>62</td>
</tr>
<tr>
<td>Toor</td>
<td>55</td>
<td>60</td>
<td>65</td>
<td>62</td>
</tr>
<tr>
<td>Chickpea</td>
<td>55</td>
<td>60</td>
<td>65</td>
<td>62</td>
</tr>
</tbody>
</table>

Results continued....

• Among all farmer households (n=252), marginal/small farmers consumed pulses more frequently (10.51±0.08) than others (9.9±10.1 times/week) suggesting that majority of small farmers depend on their own agricultural production.
• Marginal/small farmers consumed animal source foods such as, mutton, chicken/fish and eggs more frequently (0.4±2.4 times/week) than semi-medium and large-farmers (P<0.005).
• Local foods such as fruits, vegetables, savoury foods & snacks, and animal source foods like dairy items, were eaten more frequently (9.8±21 times/week) by the large-farmers compared to semi-medium and small-farmers (P<0.05).

Conclusions

• Consumption of different food items/groups varies among farmers and non-farmers and between different types of farmers.
• Grains, wheat, pearl-millet, fruits, vegetables and savoury foods & snacks were consumed less frequently by small-farmers than other farmer groups, making them more likely to be nutritionally insecure.
• Food policies can focus more on marginal/small farmers to utilize maximum input subsidies to grow sufficient food crops and encourage large farmers to utilize minimum-support-price scheme to sell their crops.
• Government could make diverse food items available through Public Distribution System to small farmers/marginalised sections, this may help to increase their food security and diet quality.

Acknowledgements

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