KITCHEN GARDENS:
Their role in addressing food insecurity and malnutrition
Perspectives from Sindh

Abstract

Food security and nutrition for farming and labouring households in rural Sindh are at risk from a combination of factors. This combination, which includes high food-price inflation, decreasing crop yields, low income from farms and limited alternative economic opportunities, all play a part in reducing access to food to meet their basic minimum dietary requirements.

Is it possible for such households, many of which have an average daily income of between PKR 500-700, to access a part of their minimum dietary requirements, the daily cost for which is estimated at PKR 312 for an average family, through low-cost, sustainable, and significantly, inflation-proof means?

One possible option to this is small-scale, household level vegetable production (kitchen/home gardens) to increase availability of nutritious, organic fruit and vegetables at minimal cost.

Poor households in 10 districts of rural Sindh had readily available vegetables for up to 2 months in the summer and winter seasons, and were able to save as much as PKR 4,000 by practicing kitchen gardening with support from the Nutrition-Sensitive Component of the Programme for Improved Nutrition in Sindh (PINS ER3). This is the first in a series of papers which explores the benefits reported by the households which have taken up small scale vegetable cultivation as part of the Programme, as well their barriers and constraints.

Introduction

Rural households in Sindh, particularly landless sharecroppers or those subsisting on farming small pockets of land, are largely dependent on their own food production for household consumption. Smallholder farming families store a portion of the staple crops they grow, usually wheat, rice, and millet to meet their dietary needs throughout the year.

The families sell the surplus, which is often the only source of household income and is used primarily to pay off debts incurred in buying farming inputs like seeds and fertilisers from dealers and middlemen. As most of them are daily wage labourers, their income also fluctuates depending on the seasonal work available to them.

Small subsistence farmers are seeing their crop yields stagnate or decrease from the effects of climate change, water scarcity, land degradation, crop diseases, pest attacks, poor quality seed and other inputs, and a lack of information, outreach, and support from government extension departments. Simultaneously, costs for farming inputs, and for food to feed their families, are seeing double digit inflation.

From a nutrition perspective, this precarious subsistence pattern in an inflationary time prevents many rural households from accessing a diverse nutritious diet to meet the minimum recommended intake of calories, proteins and other micro-nutrients.

Why Kitchen Gardens for the Rural Poor?

The Cost of Diet Survey (2018) estimated that an Energy Only (EO) diet based exclusively on staples such as wheat, rice and millet, costs an average family of 7 persons in Sindh approx. PKR 178 per day (PKR 5,340 per month).

The cost of a balanced nutritious diet (NUT) would cost the same family PKR 312 per day (PKR 9,360 per month).

With a monthly income of PKR 15,000-25,000 (PKR 500-830 per day), the minimum necessary nutrition requirements of an average family is difficult to meet.

The EU is supporting the Government of Sindh to address malnutrition and stunting through the Programme for Improved Nutrition in Sindh (PINS) to sustainably improve the nutritional status of women and children in rural Sindh through a range of interventions, which include increasing the local availability and consumption of nutritious foods.
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Household Vegetable Cultivation: Increasing Food Security and Promoting Dietary Diversity

PINS is operating in 1,938 villages across 10 districts of Sindh. In each village, households are given awareness sessions on dietary diversity and nutrition, trained on vegetable cultivation, provided seed inputs, and technically supported throughout the season to grow vegetables at home.

This support is provided by village-based resource persons known as Agricultural Entrepreneurs (AEs). The AEs received training and inputs from the Programme to develop a 0.5-1 Acre plot in each village dedicated to vegetable cultivation, compost making, nurseries for fruit trees and Moringa, and holding seasonal demonstration sessions.

In addition to conducting demonstration sessions at their FFS, the AEs visit each household regularly to support them in composting, land preparation, acquiring quality seeds, sowing, maintenance, harvesting and food preservation techniques.

These demonstration plots, known as Farmer Field Schools (FFS), serve as spaces for learning, experience sharing, and mentorship on maintaining home gardens.

After awareness sessions on nutrition and dietary diversity, approx. 124,000 households set up their own kitchen gardens with support from the Programme.

In the Khareef (summer) 2021 season, households saw yields up to 23 kg, and in Rabi (winter) 2021 season, households reported having yields up to 21 kg.

In both seasons, when cultivation was done at the appropriate time and the recommended agriculture practices were followed, the households reported up to 55% higher yields from the average.

An overwhelming majority of the households (81%) reported that increased availability of quality vegetables was the most significant benefit of kitchen gardening.

For many other households (54%), the saving in expenditure was what motivated them to cultivate vegetables at home. Households reported saving between PKR 3,000-4,200 on average each season (which, for many, represents as much as 30% of their monthly income).

Kitchen Gardening: Financial Benefits Generated

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Cost (in PKR)</th>
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<tbody>
<tr>
<td>Cost of Inputs (seeds for 2 seasons at PKR 200 per season)</td>
<td>21,600</td>
</tr>
<tr>
<td>Honoraria paid to AEs to support households in cultivating vegetables over 2 seasons</td>
<td>32,000</td>
</tr>
<tr>
<td>Total annual input cost (per village)</td>
<td>53,600</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outputs</th>
<th>Cost (in PKR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of vegetables from kitchen gardens (per household over 2 seasons)</td>
<td>8,400</td>
</tr>
<tr>
<td>Total value of vegetables produced per village (26 houses) in a year</td>
<td>218,400</td>
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</table>

Benefits Reported by Households
- Vegetables available for up to 45 days each season.
- Better quality and improved taste of vegetables compared to the market.
- Consumption of diversified food groups within the household.
- Saving in monthly expenditure.
- Improved food access, especially in situations such as the COVID-19 lockdowns.
- Free-of-cost sharing of surplus produce within neighbourhood.

For many other households (54%), the saving in expenditure was what motivated them to cultivate vegetables at home. Households reported saving between PKR 3,000-4,200 on average each season (which, for many, represents as much as 30% of their monthly income).

Kitchen Gardening under PINS: What we have learnt from households so far*

Survey and focus group discussions carried out during 2021 PINS Year 2 Internal Assessment.

Surveys provided to 64 households in each village. Internal assessments and focus group discussions observed that an average of 26 households sustainably cultivated more than 3-4 vegetables in each season.

PINS is funded by the European Union.
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Questions Yet To Be Answered
Uptake and Sustainability: Enablers and Barriers
The Programme has seen households in the same village take to growing household vegetables with varying levels of commitment, with some more eager to adopt and continue the practice than others.

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Inadequate Space</td>
<td>40%</td>
</tr>
<tr>
<td>Lack of Time</td>
<td>20%</td>
</tr>
<tr>
<td>Low Yield</td>
<td>30%</td>
</tr>
<tr>
<td>Unfit Soil</td>
<td>10%</td>
</tr>
<tr>
<td>Unfit Water</td>
<td>0%</td>
</tr>
<tr>
<td>Weather</td>
<td>4.35%</td>
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</tbody>
</table>

The Programme is conducting a round of focus group discussions, surveys and assessments to further explore issues observed. The next paper in this series will set out the results from these.

Motivation to cultivate vegetables
Why are some households showing more willingness to grow their own vegetables than others? What are some of the primary drivers for household level vegetable cultivation, and can these be promoted more widely to encourage other households to adopt the practice? If a few households practice it successfully, what impact does it have on others replicating this practice within the village?

Sustainability of the kitchen gardens
Households are telling us that their kitchen gardens diversify their diets and save costs. Are these benefits enough for families to continue the practice, or does it depend on other factors such as continued support or availability of quality seeds, for it to be sustainable?

Kitchen gardening and soil quality
Large areas of Sindh are unfit for any plant cultivation because of salinity. To address the issue of poor soil quality, all participating households were trained on compost making. While some bought it from local markets, 39% made it themselves. This shows willingness in households to adopt and learn ways of improving their soil quality. What support do they need in improving soil quality, and who can best provide it?

Kitchen gardening and water scarcity
Kitchen gardening appears to be less readily feasible in areas where water is scarce. For each kilometer that a water source is away from the house, the less successfully kitchen gardening is implemented. Women, who predominantly manage them, are disproportionately burdened by having to fetch additional water. How much extra burden does it add to women’s work? What can be done to address it?

Geographical variations within Districts
Sindh has regions that are semi-arid, arid, desert and coastal, with some perennial and non-perennial irrigation canal systems. What are the differences in kitchen gardening practices within these geographical locations? How precarious is the practice in areas with drought-like conditions, where, perhaps, it might contribute most to food security?

As the region grapples with a changing climate and a volatile economy, answers to these questions become even more relevant.

References
6. www.rspn.org
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Surveys and focus group discussions carried out during 2021 PINS Year 2 Internal Assessment, across 339 randomly selected households.