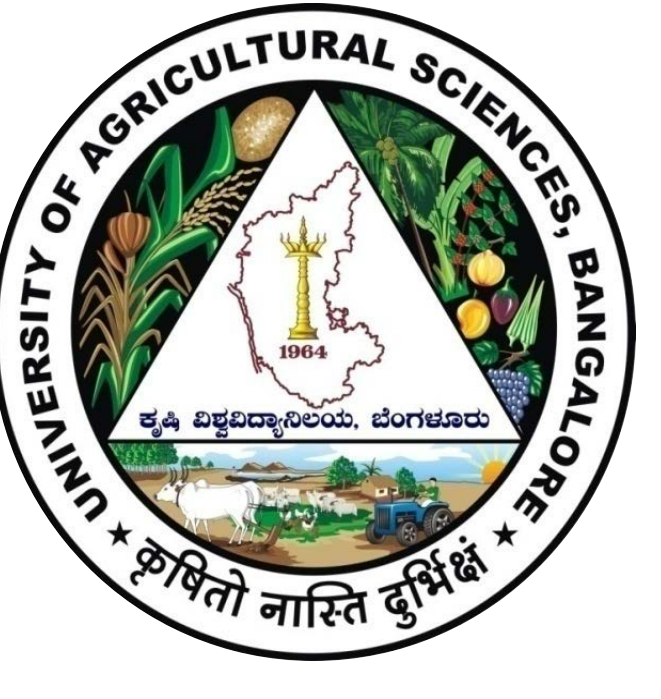


# Climate-smart millets production and value-addition: an economic documentation from India

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## Introduction

Millets are climate-smart crops and they are sustainable solution for changing climatic conditions.

Millets can utilize dry lands, withstand fluctuating temperatures, have low carbon and water footprints.

They are more nutritious as compared to popular cereals (rice, wheat and maize) and their consumption can help in alleviating malnutrition, reducing risk of heart diseases, diabetes, high blood pressure and other modern lifestyle related diseases.

United Nations General Assembly (UNGA) has declared 2023 as International Year of Millets to provide a unique opportunity to increase global production, ensure efficient processing and greater consumption.

## Objective

To analyze the profitability of selected millets cultivation and their value-added products.

## Methodology

### Study area



### Data source:

- This study was based in India for the agriculture year 2019–20.
- Simple random sampling technique was employed to collect data from 45 farmers who are involved in small millet cultivation.
- Of which 15 are little millet farmers, 15 are foxtail millet farmers and 15 are Kodo millet growing farmers.
- Four women farmers who are actively involved in the value addition in millets were selected to assess the cost and returns of value-added products in millets.

## Analytical tools

### Descriptive statistics:

- Gross returns = Price x Total output
- Net returns = Gross returns - Total cost
- Returns per rupee of expenditure = Gross returns / Total cost of production

## Results

**Table 1: Cost of cultivation of millets in the study area**

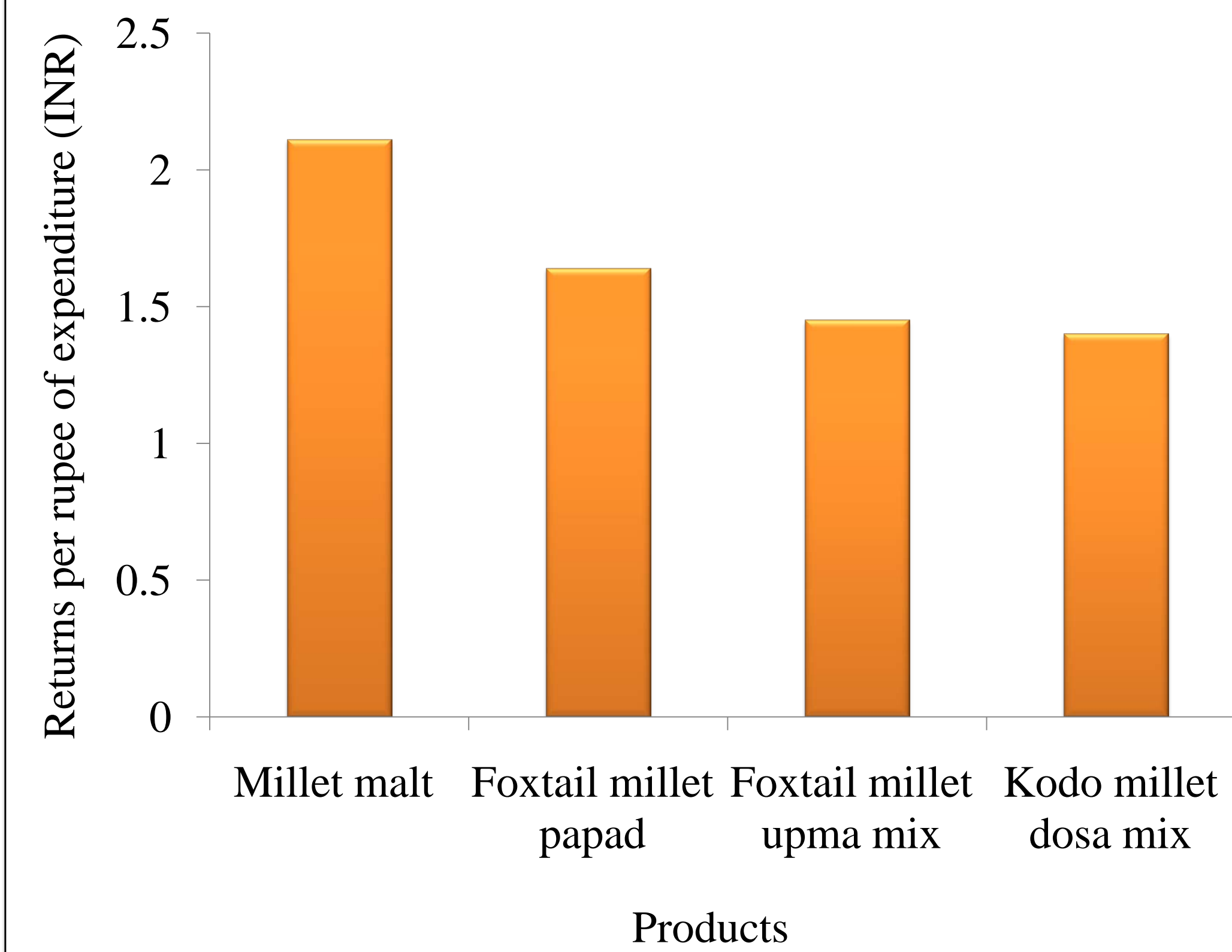
Sl. No.	Particulars	Values (per acre)
<b>A Little millet</b>		
1	Cost of cultivation (INR)	14135.54
2	Gross returns (INR)	18600.00
3	Net returns (INR)	4464.46
4	Returns per rupee of expenditure (INR)	1.31
<b>B Foxtail millet</b>		
1	Cost of cultivation (INR)	14228.41
2	Gross returns (INR)	16602.00
3	Net returns (INR)	2373.59
4	Returns per rupee of expenditure (INR)	1.17
<b>C Kodo millet</b>		
1	Cost of cultivation (INR)	15339.77
2	Gross returns (INR)	18404.00
3	Net returns (INR)	3064.23
4	Returns per rupee of expenditure (INR)	1.20

## Highlights

- The net returns over total cost for little millet cultivation was INR 4,464.46 per acre and returns per rupee of expenditure was INR 1.31.
- In foxtail millet cultivation the returns per rupee of expenditure was INR 1.17, with a net returns of INR 2,373.59 per acre over total cost.
- The net returns over total cost for kodo millet was INR 3,064.23 per acre and returns per rupee of expenditure was INR 1.20.



**Plate 1: Field visit (Little millet crop)**



**Figure 1: Returns per rupee of expenditure of Value-added products**



**Plate 2: Value added products of millets**

- Returns per rupee of expenditure was higher in millet malt with INR 2.11, followed by foxtail millet papad (INR 1.64), upma mix (INR 1.45) and dosa mix (INR 1.40 ).

## Conclusions

- From the above results, it is clear that, for every one rupee of cost incurred in cultivating small millets, the return is more than unity and thus cultivation of small millets is profitable under rainfed condition with minimum external input usage.
- Value addition in millets helps in increasing farmers income significantly.
- Millets should be promoted for farmers' benefits, consumers' health, and climate resilient agriculture.