

Rapid Changes In Cropping Pattern in Akola Villages: Extent, Determinants and Policy Implications

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Introduction

- Cropping pattern refers to proportion of area under different crops
- Changes in cropping pattern depends on number of factors such as productivity, profitability, labour requirement, irrigation facility and technological changes
- During July 2006 to June 2008, farmers of Vidharbha region (Akola, Amravati, Yavatmal, Washim, Buldhana and Wardha districts) of Maharashtra received Rs. 180 crore as Seed Subsidy from the Prime Minister's rehabilitation package (Bhende and Thippaiah, 2011)
- This poster analyzes changes in cropping pattern in Akola villages (Kanzara and Kinkhed) over four decades of time period (1975 to 2013) and identifies the underlying factors.

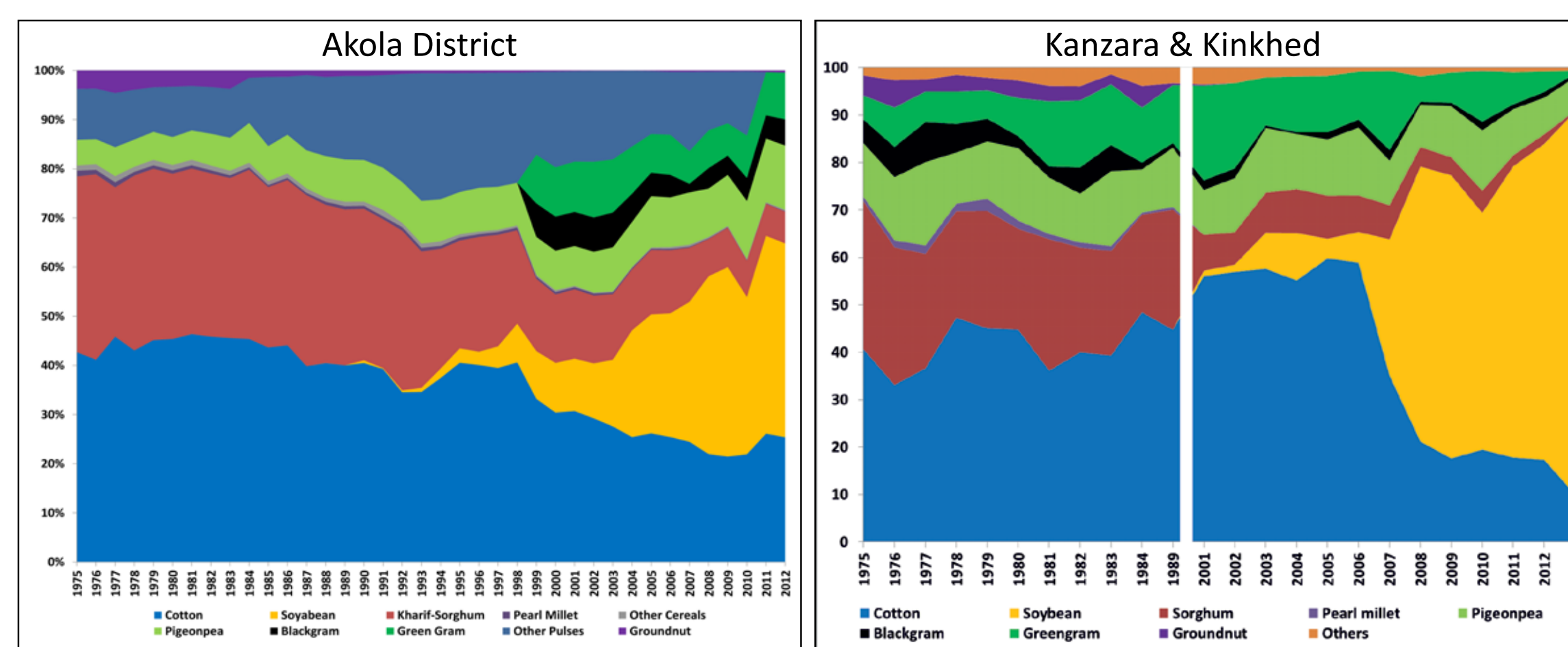
Objectives

- To analyze the changes in long-term cropping pattern in Akola villages
- To examine the role of productivity, profitability, labor requirement and seed subsidies in changes of cropping pattern over time.

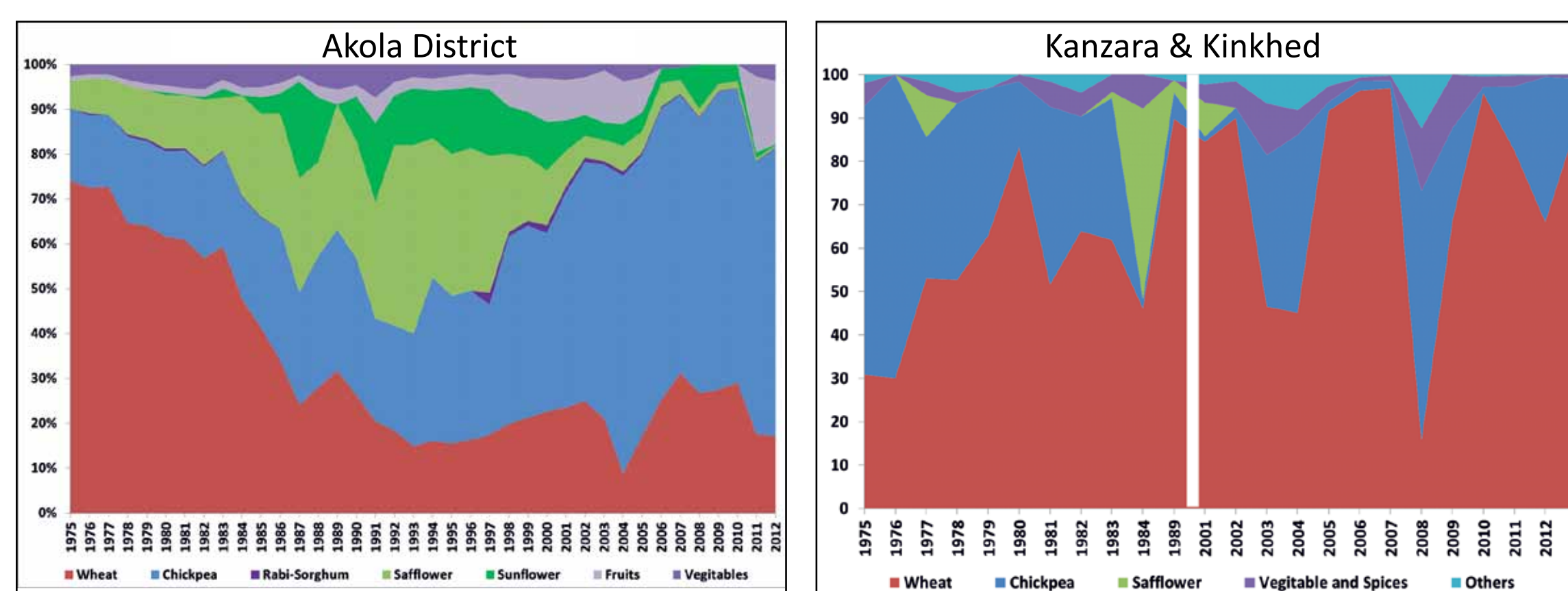
Data and Methodology

- Study Villages: Kanzara and Kinkhed under Akola district of Maharashtra
- VDSA Household Panel Data: 1975-1984, 1989, 2001-2013
- VDSA District Level database: 1975-2012, Crop area in Akola district.\
- Studied two main cropping seasons—Kharif (rainy) and Rabi (post rainy)
- Measured two types of profitability :
 - Returns to land, labour and management (Type-I)
 - Net returns (Type-II).

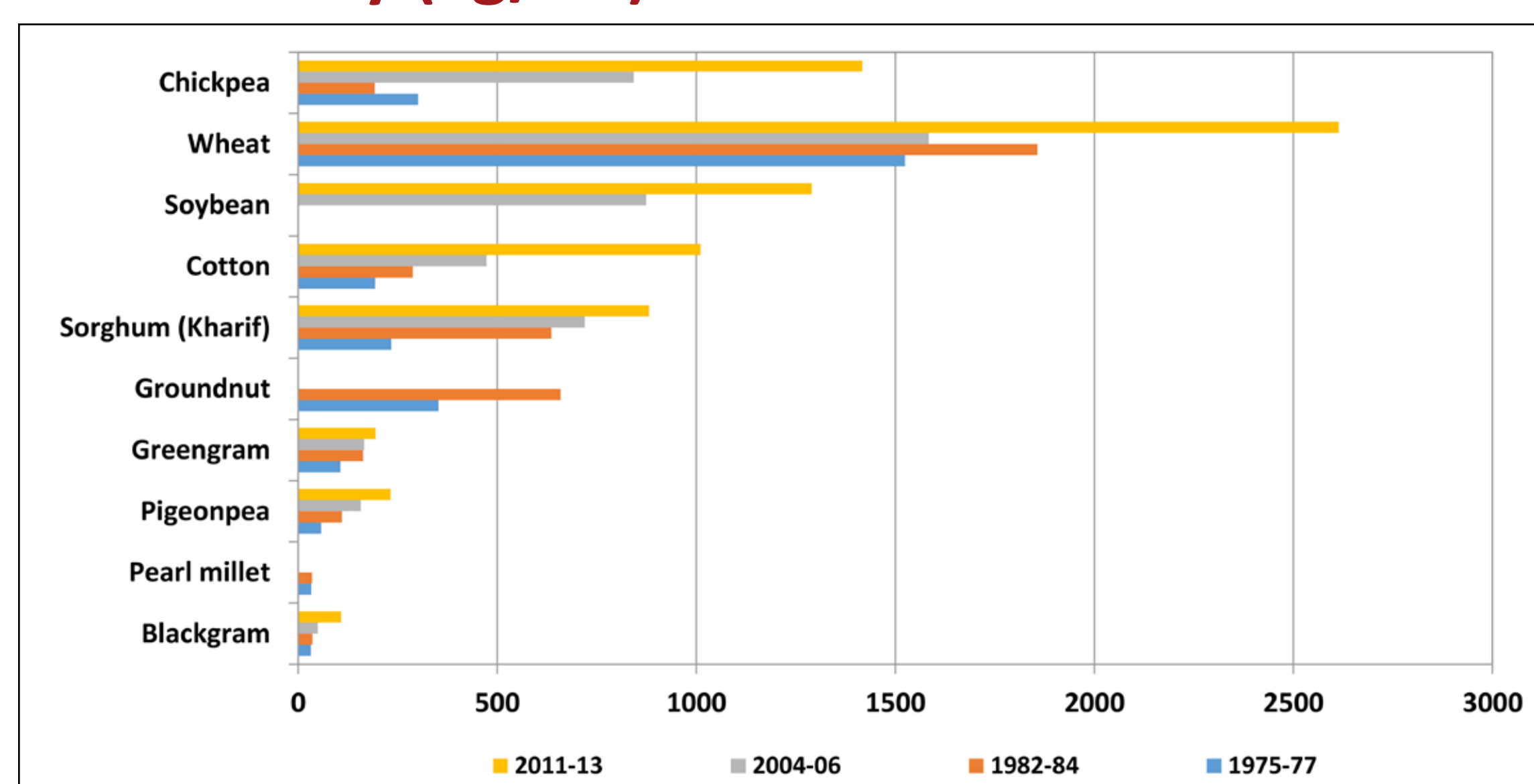
Cropping Pattern in Kharif Season



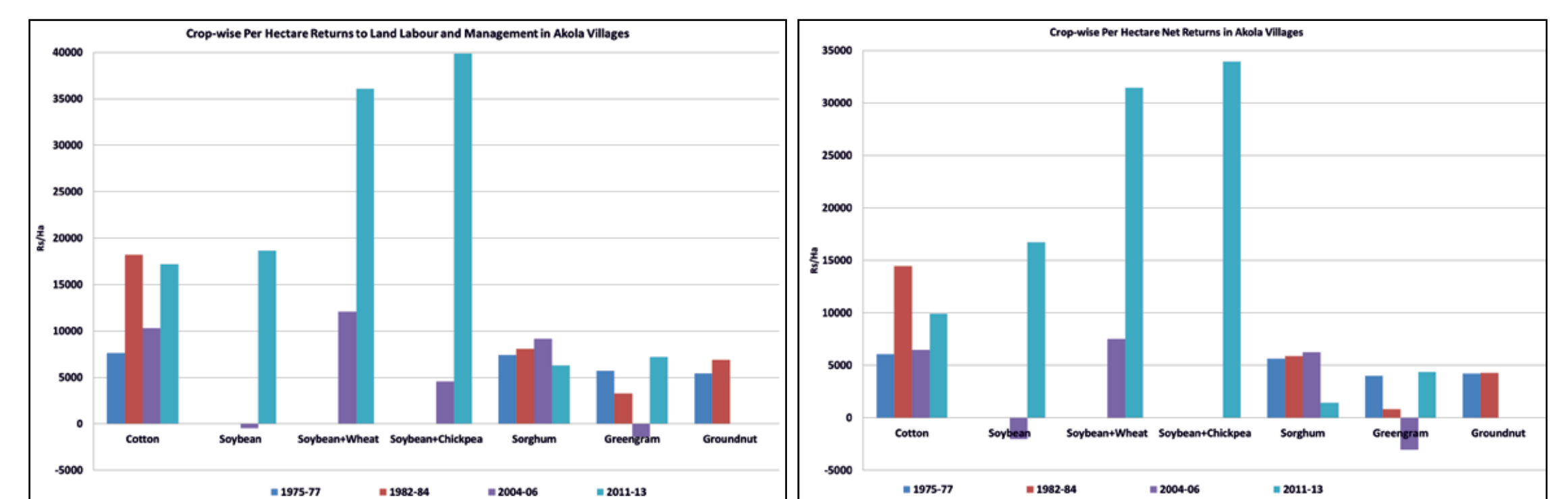
Cropping Pattern in Rabi Season



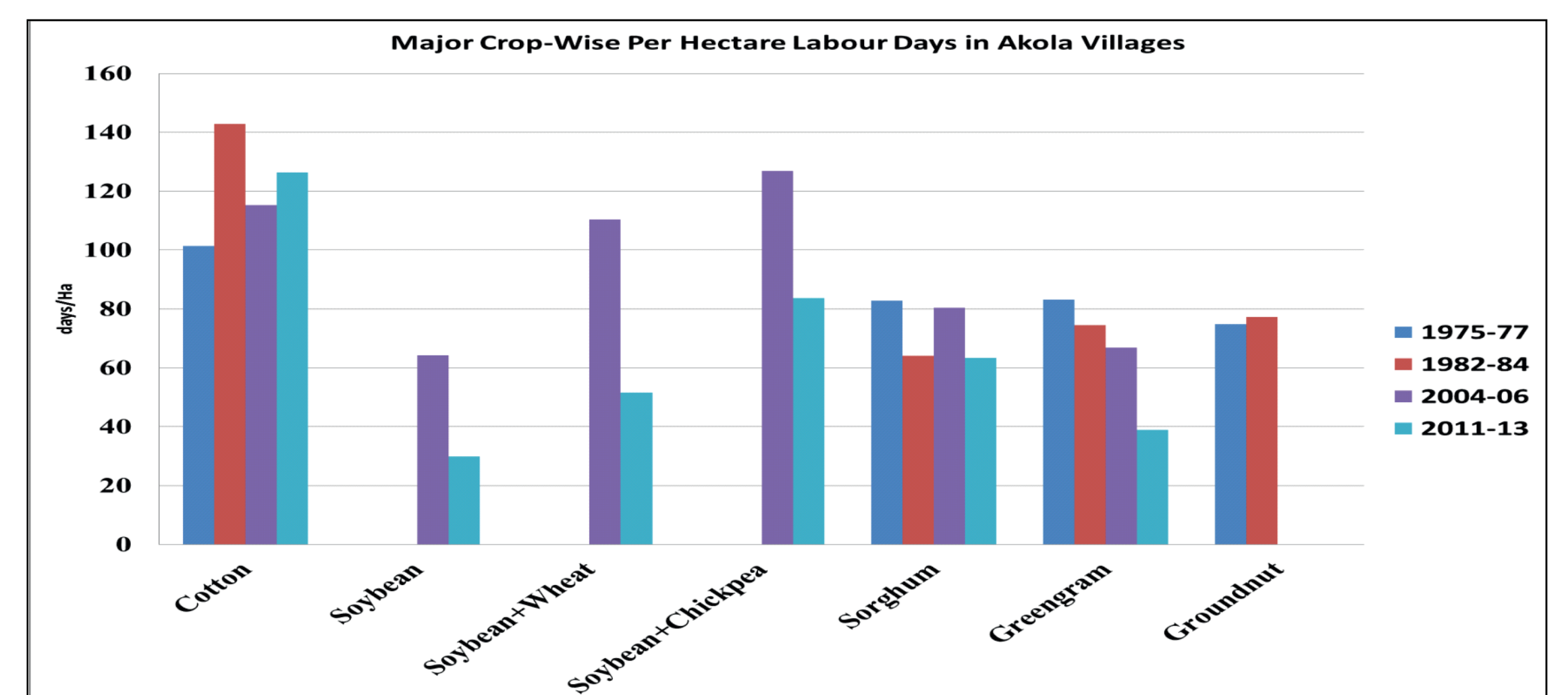
Productivity (kg/Ha)



Profitability (Rs/Ha)



Labour Use (Days/Ha)



Results

Cropping pattern in Akola district

- Kharif season: in mid-1970s, Cotton (43%) and sorghum (37%); early 2000s, Cotton (29%), Sorghum (14%) and Soybean (12%); early 2010s, Soybean (37%), cotton (24%) and pigeonpea (13%)
- Rabi season: in mid-1970s, wheat (73%) and chickpea (16%); early 2000s, wheat (23%) and chickpea (53%); early 2010s, wheat (21%) and chickpea (63%).

Cropping Pattern in Kanzara & Kinkhed

- Kharif season: in mid-1970s, Cotton (37%) and sorghum (28%); early 2000s, Cotton (57%), Sorghum (16%) and Soybean (3%); early 2010s, Soybean (70%) and cotton (15%)
- Rabi season: in mid-1970s, chickpea (54%) and wheat (38%); early 2000s, wheat (74%) and chickpea (12%) ; early 2010s, wheat (79%) and chickpea (20%).

Drivers of Changes in Cropping Pattern

- Farmers have shifted from cotton to soybean based cropping pattern because of after soybean in Kharif season they can grow another crop (wheat or chickpea) in Rabi season which provides them higher profit. Other influencing factors were: seed subsidy, less labor requirement for soybean and chickpea, soybean and wheat, wide fluctuation on in Cotton prices, availability of water for supplementary irrigation in Rabi season.
- In 2011-13, average per hectare returns to land, family labor and management from cultivation of cotton was ₹ 17171, soybean plus chickpea (₹ 39882) and soybean plus wheat (₹ 36068).
- In 2011-13, average per hectare net returns from cultivation of cotton was ₹ 9906, soybean plus chickpea (₹ 33963) and soybean plus wheat (₹ 31448).
- Increase in Productivity was important factor for higher profit. Average productivity of soybean has increased from 874 kg/ha in 2004-06 to 1290 kg/ha in 2011-13. During this period, productivity of wheat increased from (1584 to 2614 kg/ha), chickpea (from 843 to 1417 kg/ha) cotton (from 473 to 1011 kg/ha), Sorghum (from 720 to 880 kg/ha), pigeonpea (from 157 to 232 kg/ha).
- Under the Seed Subsidy program (implemented during 2006-2008), farmers were allowed to received 50 percent seed subsidy for growing crops up to one hectare of land. For growing soybean in one hectare land farmers require 75 kg of seed which costs them ₹ 2,250 and they were entitled to receive ₹ 1,125 as subsidy. On the other hand, cotton requires 1.875 kg seed in a hectare of land which costs ₹ 1880. Farmers would have received Rs. 940 as subsidy. Thus, subsidy helped to minimize risks for switching from cotton to soybean in the initial years.
- In 2013-14, average per hectare labor use was 126 man-days for cotton, 52 man-days for soybean and wheat, 84 man-days for production of soybean and chickpea.

Policy Implications

Farmers are looking for new technologies, better options and opportunities. They are ready to switch rapidly from one crop to another crop if provides higher profit and income. Therefore, agricultural research must focus on development of technologies which will provide significantly higher level of productivity and thereby, profit.