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Fuzzy Cognitive Mapping Analysis: Farmer 1

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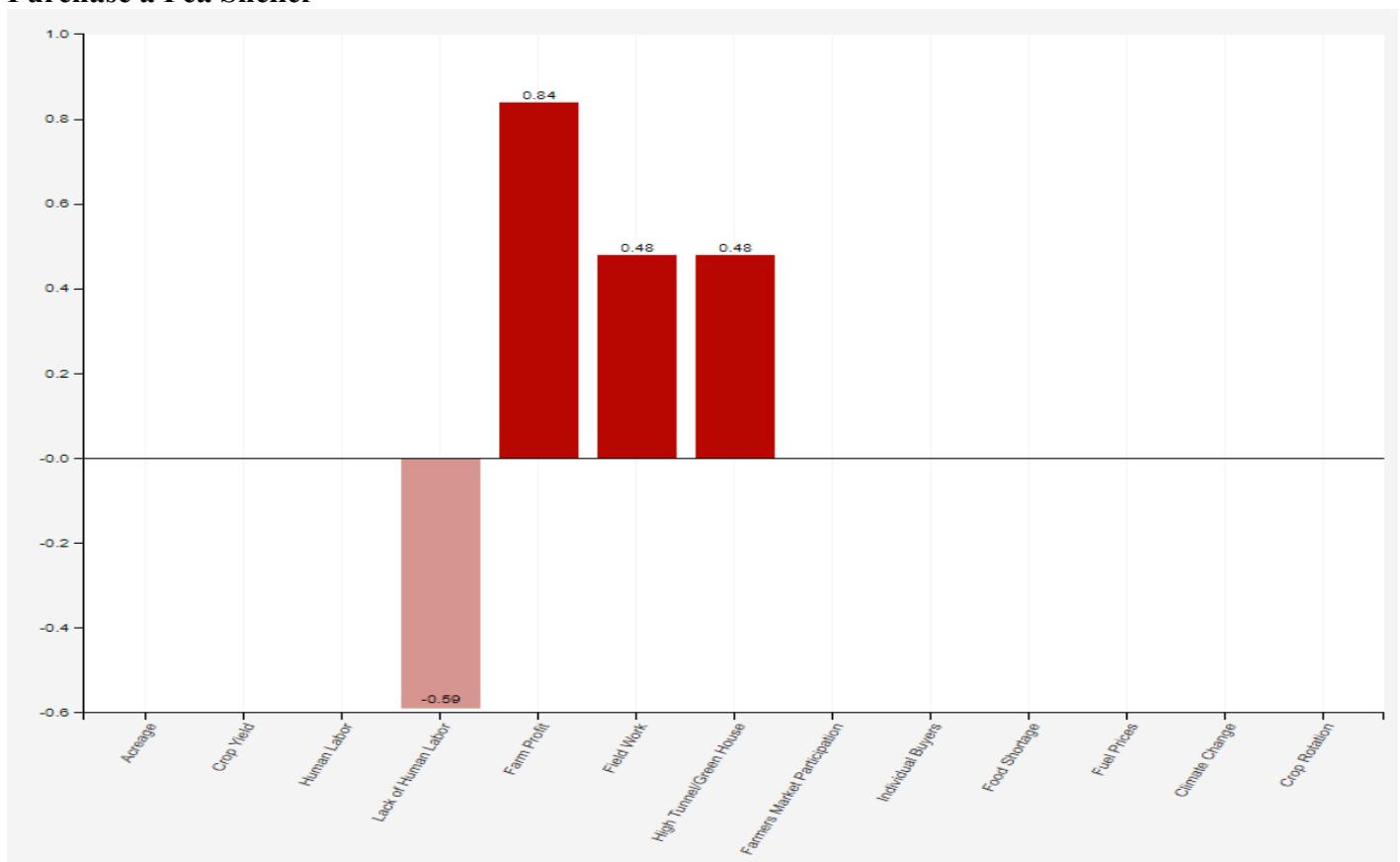
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Fuzzy Cognitive Mapping Analysis
 Farmer 1

Introduction

Based on the previous interview and FCM analysis, the following suggestions are the most effective pathway for Farmer 1 to expand production: purchase a pea sheller, hire one farm worker (part-time or full-time), and expand sustainability practices.

Purchase a Pea Sheller

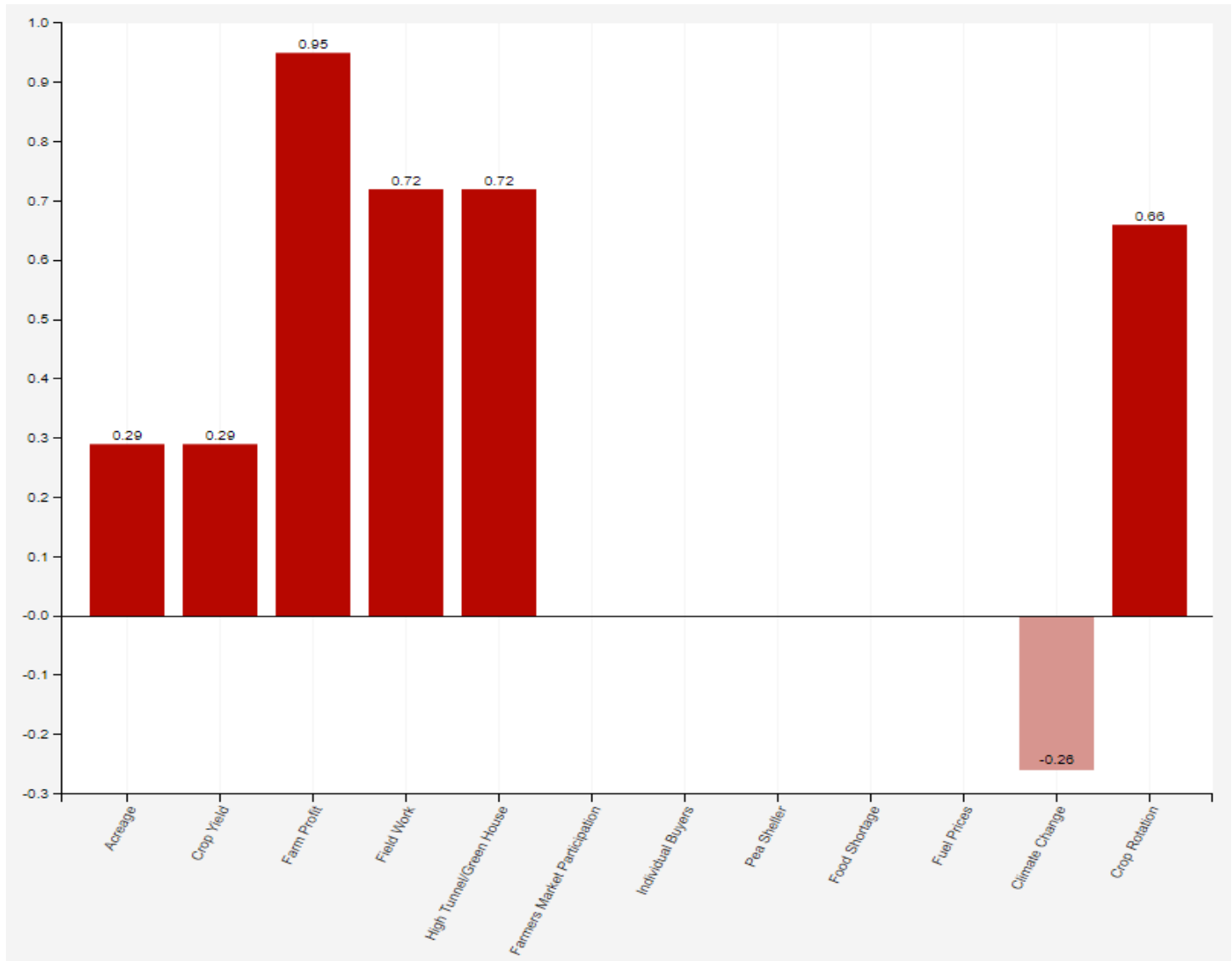


If Farmer 1 purchased a pea sheller, four other variables are significantly affected:

- Profit will likely increase over 80%.
- Lack of Human Labor will likely decrease almost 60%.
- Field Work and High Tunnel work increase almost 50%.

Purchasing a pea sheller will likely increase farm profit enough for Farmer 1 to either hire part-time help or save to hire help later. It will likely also increase Farmer 1’s available time to work in the field or high tunnel, therefore increasing field and high tunnel output.

Hire One Person

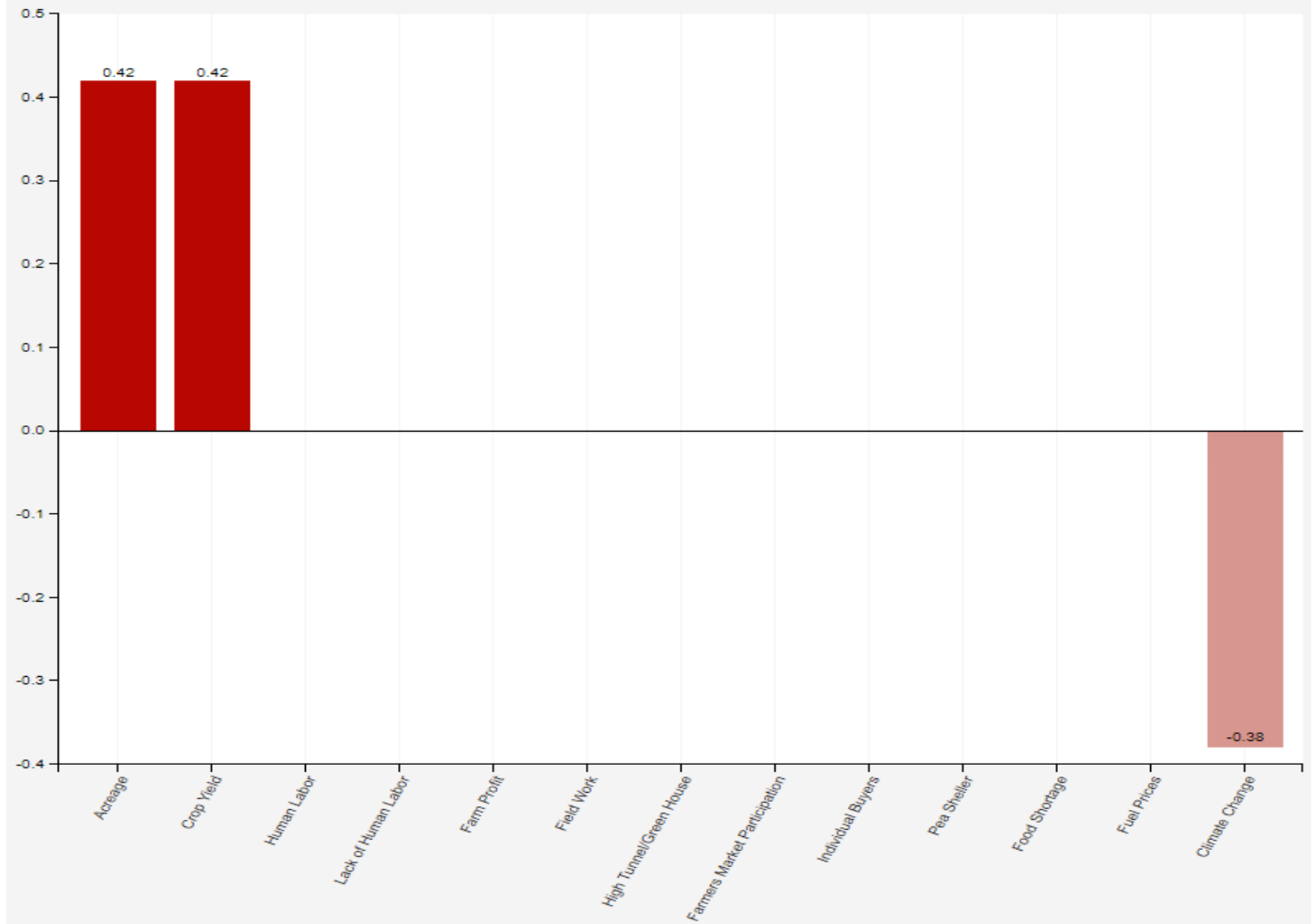


If Farmer 1 hired one person, seven variables are significantly affected:

- Profit will likely increase 95%.
- Field Work and High Tunnel work increase over 70%.
- Acreage used and Crop Yield increase almost 30%.
- Crop Rotation capabilities increase over 65%.
- Effects of Climate Change decrease over 25%.

One additional farm worker will likely increase work done in the field and high tunnel, allow for more sustainable farm practices like crop rotation, and improve crop wellbeing and yield. This directly increases farm profit in the short term and long term.

Expand Sustainability Practices



If Farmer 1 doubles their sustainability practices, three variables are significantly affected:

- Acreage and Crop Yield will likely increase over 40%.
- Effects of Climate Change will likely decrease around 40%.

Expanding Farmer 1's sustainability, like crop rotation, irrigation, and high tunnel use, will decrease the effects of climate change and increase acreage used and crop yield.

For Farmer 1 to improve their farm's sustainability, it will likely be beneficial to increase time spent working in the high tunnel and decrease time spent working in the field. This will likely allow crop yield to increase, profit to increase, and provide the ability for Farmer 1 to hire more assistance.