Production planning in agribusiness and risk and uncertainity management

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Outline

Background[1]

- All business activities ranging from small corner shop to large commercial firms should plan their production and marketing operations
- Planning is secret of economic success of business
- With recent technological development in agriculture, farming has become more complex business and requires careful planning for successful operation
- Fail to make a plan is a plan to fail

[1] Production planning is related to earlier lecture on Farm Planning

Advantages of planning

1. Income improvement

- Farm planning is an integrated, coordinated and advance programmes of actions which show opportunity to cultivators to improve in income
- Income maximization can be achieved through by efficient utilization of present resources/technologies and introduction of new technology
- Farm planning gives idea about this

2. Educational process

- FP is an educational tool to bring a change in the outlook of the cultivators and the extension workers
- Knowledge in advances in agriculture is pre-requisite for better farm planning
- So, farmers keep their information up-to-date by farm planning
- This acts as a self-educating tool for the farmers
- Farmers can closely study their own business and see more clearly their opportunities and limitations, thus, improving managerial ability

3. Desirable organizational changes

- FM is an approach which introduces desirable changes in farm organization and operations and makes the farm a viable unit

Objectives of planning

- Ultimate objective of FP is the improvement in the standard of living of farmer
- Immediate goal is to maximize the net income of the farmer

Characteristics of a good plan

1. It should provide ways for efficient use of farm resources such as labor, power and equipment
2. The crop plan should have balanced combinations of enterprises,
3. Avoid excessive risks
4. Provide flexibility
5. Utilize the farmers knowledge, training and experience and take account of the farmers likes and dislikes
6. Give considerations to efficient marketing facilities
7. Provide program of obtaining, using and repaying the credit
8. Provide for the use of up-to-date modern agricultural methods and practices
9. Provide regular income and employment to the farm families
10. Do not produce negative environmental impact

Steps in farm planing and budgeting

1. Specification of the technical coefficients of production: specification of technical coefficients for producing different outputs
2. Specification of appropriate prices: price forecasting for outputs (last three years average price or last year price plus inflation)
3. Preparation of enterprise profitability chart: prepare profitability ranking charts for enterprises based on net return
4. Preparation of farm map: prepare farm map showing all physical features of farm
5. Preparation of inventory of limited farm resources: prepare list of all resources like land, labor, animals, buildings, machines, cash and farm products along with their value
6. Examine the existing farm plan: evaluate present plan on the basis of costs, returns and resource use patterns

- Work out variable cost for each enterprise
- Work out gross income for various enterprises
- Calculate returns to fixed farm resources (gross income variable cost)
- Work out net profit (gross income-total cost)

7. Locate the weakness of present plan: identifying weaknesses of present plan may serve as guidelines for improving alternative plan
8. List the risks in farm production: identify probable risks and think about effective strategies to cope them
9. Prepare the alternative plans: alternative plans can be developed considering resource restriction and weakness of existing plan and possibilities of incorporating modern technology
10. Analyzing alternative plans: new plans are analyzed for costs and returns and practicability and the optimum one which shows highest returns is selected
11. Implementing the plan: execution of plan

Outline

Background

- Perfect knowledge situation in agribusiness management decisions is far from reality
- It is necessary to study the effect of technical progress on the production relation and incorporate all the complications due to time and risk and uncertainty in decision making
- Consideration of such aspects should help to arrive at some adjustments with the introduction of time and risk and uncertainty aspects

Decision making under risk and uncertainty

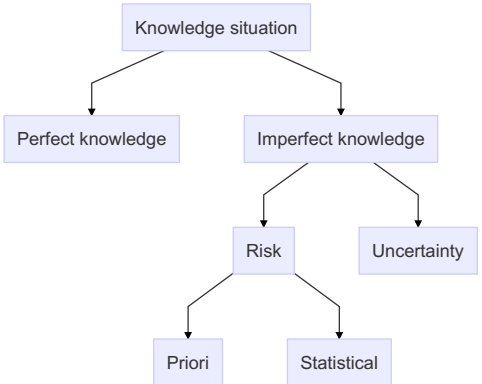

Figure 1: Frank Knight's classification of knowledge situation.

Perfect knowledge

- Every thing (technology, price, organizational behavior etc) about the future of business is know with certainty
- No need of farm management expert
- But does not reflect the real world situation

Imperfect knowledge

- May be either risk or uncertainty
- Risk represents less imperfection in knowledge than does uncertainty
- Under risk the occurrence of future events can be predicted fairly accurately by specifying the level of probability
- When a risk situation prevails, it can be said, for instance, that the chances of a hailstorm at the time of harvesting wheat are 5:95 or 20:80.
- In practice, however, farmers are unable to draw a clear distinction between risk and uncertainty, though the reaction in each situation is markedly different
- Thus in most cases risk and uncertainty are taken as similar in decision making

Types of risk and uncertainty

1. Economic uncertainties

- Input and output price uncertainties
- In many developed countries this uncertainty are reduced by price announcement before crop season
- This uncertainty is caused by national and international policies which are beyond the approach of individual farmer

2. Biological uncertainties

- Common and important in agriculture
- Rain, drought, flood, hailstorm, frost may cause disease and pest incidence

3. Technological uncertainty

- Continuous advancement of knowledge through research
- New technology (method, practice, raw material, market etc) available to farmers - increased efficiency of production

4. Institutional uncertainty

- Government, banks may cause uncertainties for farmers
- Credit squeeze, price supports, subsidies etc may be enforced and withdrawn without considering individual farmers

5. Personal uncertainty

- Unexpected happening in farmers' household or its labor
- Sum of production and technical risk, marketing and price risk, and personal risk is called business risk.

Risk attitudes

1. Risk avoider/avert
2. Risk neutral
3. Risk bearer/taker

Risk management

- It is a way for an organization to avoid losses and maximize opportunities
- Steps in project risk management
  1. Establishing context
  2. Identifying important risky decision problems
  3. Structure problems
  4. Analyze options and consequences
  5. Evaluate and decide
  6. Implement and manage
  7. Monitoring and review

Risk management strategies

- Some farmers take more risk than others
- However, every farmer take some safeguarding measures to minimize loss
- Some measures to safeguard against risk and uncertainty are:
  1. Selection of enterprises with low variability
  2. Insurance
  3. Forward contract
  4. Flexibility
  5. Liquidity and asset management
  6. Diversification
  7. Maintaining resource in reserve