Livelihood

Definition

Livelihood → refers to the means by which individuals or households secure the basic necessities of life such as food, clothing, shelter and otheir essential needs through the use of their resources, abilities and opportunities.

☆ Key Points

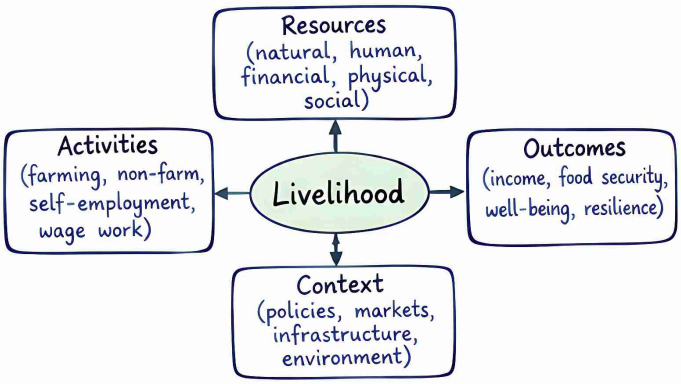
- It is more than just income; it includes both material and non-material well-being.
- Livelihoods are shaped by social, economic, environmental and institutional factors.

Livelihood Pattern in Rural Areas

- Predominantly agriculture-based.
- Dependence on natural resources (land, water, forests).
- Involves farming, livestock, forestry, fishing and small-scale industries.
- Often seasonal and vulnerable to climate and market risks.
- Low diversification and limited access to non-farm opportunities (in many regions).

Concept of Livelihood

- Livelihood is a dynamic and multi-dimensional concept.
- It involves the combination of resources (natural, human, financial, physical and social), activities and strategies used by people to achieve a sustainable living.
- It is influenced by external factors like policies, markets, infrastructure and environment.



Livelihood Pattern in Urban Areas

- More diversified and non-farm based.
- Involves salaried jobs, self-employment, business, services and informal sector work.
- Higher access to education, healthcare, infrastructure and technology.
- Greater income stability but also higher cost of living.
- Migration from rural areas adds to urban livelihood diversity.

Comparison of Livelihood Pattern: Rural vs Urban

Aspect	Rural Areas	Urban Areas
Main source of livelihood	Agriculture, livestock, forestry, fishing	Salaried jobs, business, services, self-employment
Dependence on natural resources	High	Low
Income level	Generally low and unstable	Higher and more stable
Access to services	Limited (education, healthcare, infrastructure)	Better access
Livelihood diversification	Low	High
Vulnerability	More (climate, market, natural risks)	Less (but affected by economic fluctuations)
Cost of living	Lower	Higher

Different Indicators to Study Livelihood Systems

Livelihood systems can be studied using a set of indicators that reflect the different dimensions of well-being and sustainability.

Income – level and stability of earnings.

Employment – type and stability of work.

Food Security – access to adequate and nutritious food.

Education – literacy and skill level.

Health – physical and mental well-being.

Housing – quality and access to shelter.

Assets – land, livestock, tools, savings.

Access to Services – healthcare, education, credit, markets, transport.

Social Capital – networks, community support, institutions.

Environmental Sustainability – resource availability and conservation.

☆ Important for Exam

- Livelihood = means of living, not just income.
- It is multi-dimensional (economic + social + environmental).
- Rural livelihood = agriculture based.
- Urban livelihood = diversified and non-farm based.
- Key indicators: income, employment, food security, education, health, assets, services, social capital, environment.

Remember

Sustainable livelihoods = Better present + Secure future

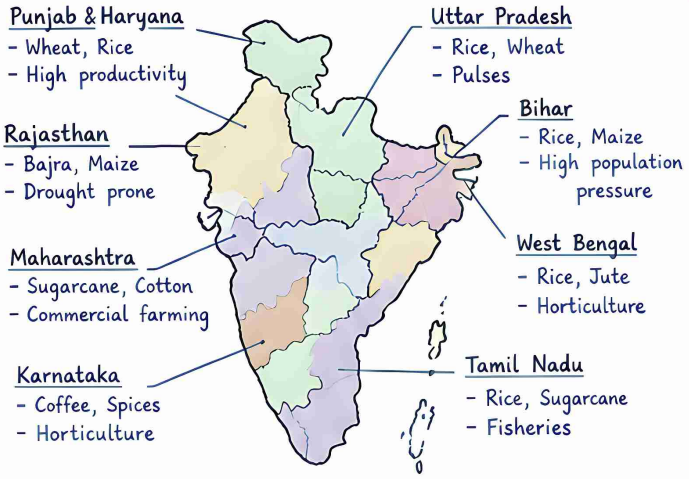
Status of Agriculture in India and Different States, Income of Farmers and Rural People in India

Introduction

Agriculture is the backbone of the Indian economy. It provides food, employment, raw materials and supports the overall socio-economic development of the country.

- It contributes around 16-18% to India's GDP and supports nearly 50% of the population (directly and indirectly).

Agriculture in Different States of India



State-wise Highlights

State / Region	Major Agricultural Products	Special Features
Uttar Pradesh	Rice, Wheat, Sugarcane	Largest producer of wheat & sugarcane
Punjab & Haryana	Wheat, Rice, Cotton	High productivity, advanced farming
Maharashtra	Sugarcane, Cotton, Soybean	Leading in sugarcane and cotton
Rajasthan	Bajra, Maize, Pulses	Drought prone, less irrigation
Bihar	Rice, Maize, Pulses	High small holdings, low productivity
West Bengal	Rice, Jute, Tea	Fertile soil, high crop diversity
Tamil Nadu	Rice, Sugarcane, Cotton	Advanced irrigation, multiple cropping
Karnataka	Coffee, Spices, Millets	Horticulture and plantation crops

☆ Important for Exam

- India is the 2nd largest producer of agricultural products in the world.
- Agriculture contributes ~16-18% to GDP but employs ~42-46% of the workforce.
- Small and marginal farmers form the majority (>85%).

Current Status of Agriculture in India

Share in GDP

- ~16-18% of total GDP (recent years).
- Declining trend due to growth in other sectors.

Share in Employment

- Around 42-46% of total employment.
- More than 60% of the rural workforce depends on agriculture.

Land Holdings

- Average size: ~1.08 ha (declining).
- Majority are small and marginal farmers (> 85% of total holdings).

Key Crops

- Food grains, oilseeds, pulses, cotton, sugarcane, fruits and vegetables.

Challenges

- Low productivity, climate change, water scarcity.
- Fragmented land holdings, poor infrastructure, market access and price volatility.

Income of Farmers and Rural People in India

Farmers' Income

- Average monthly income of a farmer: ~ ₹10,218 (NSSO, 2019-20).
- Income varies widely across states and farm sizes.
- Crops, livestock, and allied activities contribute to total income.

Rural People's Income

- Average monthly income of rural households: ~ ₹11,609 (NSSO, 2019-20).
- Includes earnings from agriculture, wage labour, non-farm activities and remittances.
- Non-farm sources are becoming increasingly important.

State-wise Average Monthly Income (approx.)

State / Region	Farmer Income (₹)	Rural Household Income (₹)
Punjab	16,000 - 18,000	18,000 - 20,000
Haryana	15,000 - 17,000	17,000 - 19,000
Uttar Pradesh	9,000 - 11,000	10,000 - 12,000
Bihar	6,000 - 8,000	7,000 - 9,000
Maharashtra	10,000 - 13,000	12,000 - 15,000
Tamil Nadu	9,000 - 12,000	11,000 - 14,000
West Bengal	7,000 - 9,000	9,000 - 11,000

Key Takeaways / Important Points

- Agriculture is vital for food security and rural livelihoods.
- Income levels are improving but still low and unequal across states and regions.
- Diversification, better infrastructure and value addition can increase farmers' and rural people's income.

☆ **Remember**: Higher productivity + better market access + supportive policies = higher income for farmers and rural people.

Agricultural Livelihood Systems (ALS)

Meaning

Agricultural Livelihood Systems (ALS) refers to the various combinations of natural, human, physical, financial and social resources, institutions and activities that people use to make a living from agriculture and allied activities in a particular context (area/region).

- It focuses on how farm households and communities organize and manage their resources to achieve food security, income and well-being.

Approach

The ALS approach looks at agriculture from a household and system perspective rather than only focusing on crop production.

Key features of the approach:

- **Holistic** – considers all sources of livelihood (on-farm + off-farm).
- **People-centred** – focuses on needs, choices and decision-making of farm households.
- **Context specific** – takes into account local resource base, environment and socio-economic conditions.
- **Sustainable** – aims for long-term livelihood security and resource conservation.
- **Participatory** – involves farmers and local institutions in planning and implementation.

Approaches of ALS

1. Farming Systems Approach

- Studies the whole farming system (crops, livestock, trees, fish, etc.) as an integrated unit.
- Looks at resource use, interactions and productivity.

2. Rural Livelihoods Approach

- Goes beyond agriculture to include non-farm income sources and multi-activity livelihoods.
- Focuses on overall well-being and poverty reduction.

3. Value Chain Approach

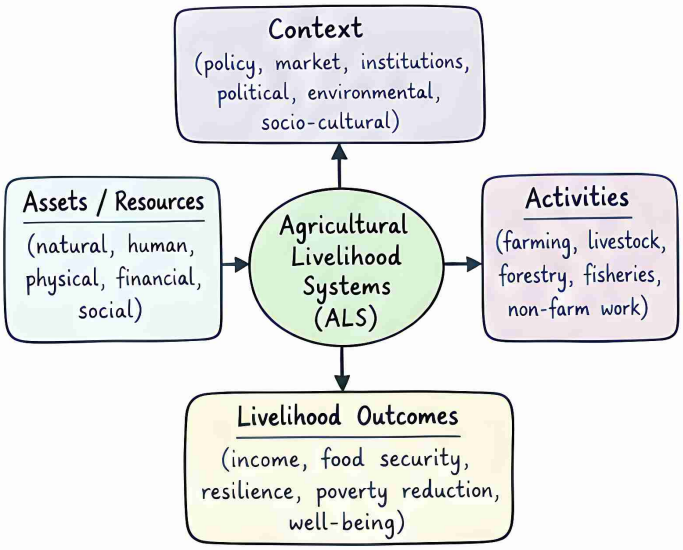
- Examines the entire chain from input supply to consumption.
- Identifies opportunities for better income and market access.

4. Participatory Approach

- Involves farmers and stakeholders in analysis, planning and decision-making.
- Uses local knowledge and experiences.

Framework of ALS

The ALS framework helps to analyse the linkages between people, resources, activities and outcomes in a given context.



☆ Main Components of the Framework

Component	Description
Context	External factors like policies, markets, institutions, environment, social and cultural norms.
Assets / Resources	Natural, human, physical, financial and social capital.
Activities	Agricultural and non-agricultural activities undertaken by households.
Livelihood Outcomes	Income, food security, resilience, reduced vulnerability, improved well-being.

Linkage and Flow

Context → Assets → Activities → Outcomes

All components are interconected and influence each other. Changes in one element (e.g. market access) can affect assets, activities and finally livelihood outcomes.

☆ Important for Exam

- ALS is a holistic and people-centred approach.
- It includes both farm and non-farm activities.
- The framework links context → assets → activities → outcomes.
- Aim: sustainable livelihoods and food security.

Definition of Farming Systems and Farming Based Livelihood Systems

Farming Systems

Definition

Farming systems refer to the combination of crops, livestock, trees, fisheries and other agricultural enterprises, along with the management of resources (land, water, labour, capital and knowledge) on a farm unit to achieve sustainable production, income and livelihood.

Key Features

- Integration of crop, livestock, tree and other enterprises.
- Efficient use of natural and human resources.
- Focus on productivity, profitability and sustainability.
- Adaptation to local agro-ecological and socio-economic conditions.

Farming Based Livelihood Systems

Definition

Farming based livelihood systems are the various combinations and management of farming activities (crop, livestock, fisheries, forestry, etc.) and non-farm activities that generate income and support the basic needs of farm households.

Key Features

- Dependence on farming and allied activities for income and food security.
- Combination of farm and non-farm sources of livelihood.
- Involves the use of household labour, land, capital and local resources.
- Influenced by market access, technology, policies and socio-economic conditions.

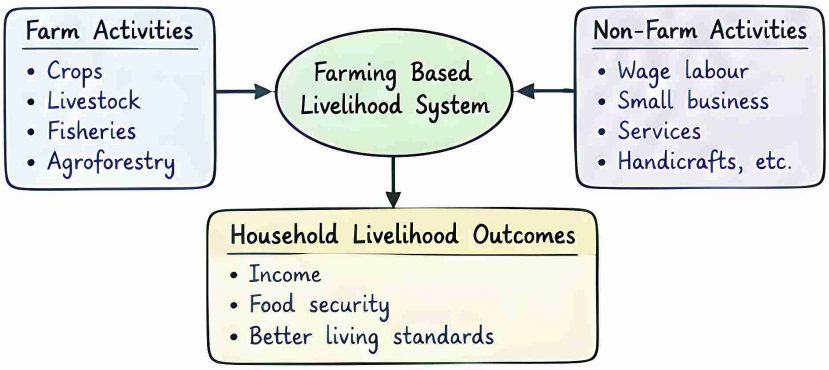
☆ Important for Exam

- Farming systems = production oriented.
- Farming based livelihood systems = income + food security + household well-being.

Comparison: Farming Systems vs Farming Based Livelihood Systems

Aspect	Farming Systems	Farming Based Livelihood Systems
Scope	Production-focused (crops, livestock, trees, fisheries, etc.)	Broader – includes farm + non-farm activities.
Main Objective	Higher productivity and sustainability of farm resources.	Income generation, food security and overall household well-being.
Components	Integrated farming enterprises (crop + livestock + etc.).	Farming + non-farm activities (e.g., wage work, small business, services).
Level	Farm unit / production system.	Household / community level.
Focus	Resource use efficiency and long-term productivity.	Livelihood security and risk reduction.
Examples	Crop-livestock system, agroforestry, fish-cum-poultry system.	Farming + daily wage, farm + small business, farming + MGNREGA, etc.

Diagram: Farming Based Livelihood System



Key Points to Remember

- ✓ Farming systems = integrated production system.
- ✓ Farming based livelihood systems = combination of farm + non-farm activities.
- ✓ Both are essential for sustainable rural development and poverty reduction.

Sustainable farming → Stronger livelihoods

Prevalent Farming Systems in India Contributing to Livelihood

Introduction

India has diverse agro-climatic conditions, soil types, water resources and socio-economic settings. Therefore, a variety of farming systems are practiced across the country. These farming systems are the backbone of rural livelihoods, providing food, income, employment and overall rural development.

☆ Key Point

- Farming systems = combination of crops, livestock, trees, fish and other enterprises.
- They contribute to livelihood through food, income, employment and resource sustainability.

Major Farming Systems in India

1. **Cropping System** – cultivation of one or more crops on the same land over time.

2. **Livestock System** – rearing of animals for milk, meat, wool, draft and manure.

3. **Agroforestry System** – integration of trees with crops and/or livestock.

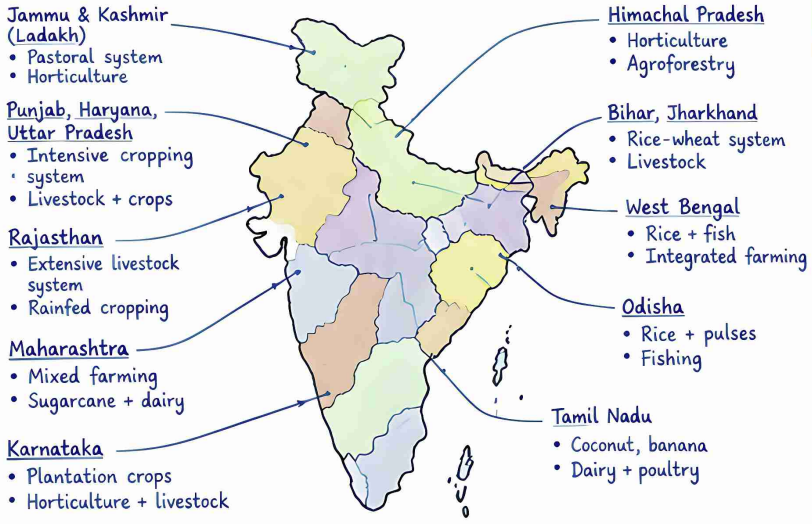
4. **Horticulture System** – cultivation of fruits, vegetables, spices, plantation crops, etc.

5. **Integrated Farming System (IFS)** – combination of crop + livestock + fishery + other enterprises.

6. **Pastoral System** – rearing of livestock on natural grazing lands.

7. **Shifting Cultivation (Jhum)** – moving cultivation in hilly and forest areas.

Regional Prevalence of Farming Systems



India – Diverse Farming Systems, Stronger Livelihoods

☆ Factors Influencing Prevalence

- Agro-climatic conditions (rainfall, temperature, soil type).
- Land holding size and farm structure.
- Availability of water and irrigation.
- Market access and infrastructure.
- Socio-economic and cultural factors.
- Government policies and support systems.

Importance for Livelihood

- Provides food and nutrition.
- Generates employment (on-farm and off-farm).
- Increases rural income and reduces poverty.
- Supports allied sectors (dairy, fisheries, forestry, horticulture).
- Ensures sustainable use of natural resources.

☆ Remember

Different regions → Different farming systems → Different livelihood opportunities.

Farming Systems and Their Contribution to Livelihood

Farming System	Major Regions in India	Main Enterprises	Contribution to Livelihood
Cropping System	Indo-Gangetic plains, coastal areas	Cereals, pulses, oilseeds, vegetables	Food security, income, employment
Livestock System	Rajasthan, Gujarat, J&K, Himachal	Cattle, buffalo, sheep, goat, poultry	Milk, meat, wool, manure, income
Agroforestry System	Central India, NE India, hilly regions	Trees + crops + livestock	Timber, fuelwood, fodder, income, soil conservation
Horticulture System	J&K, Himachal, Maharashtra, Karnataka, Tamil Nadu	Fruits, vegetables, spices, plantation crops	High income, employment, export
Integrated Farming System	All agro-climatic regions	Crops + livestock + fish + poultry + other enterprises	Diversified income, risk reduction, resource use efficiency
Pastoral System	Rajasthan, Gujarat, Ladakh	Sheep, goat, camel, yak	Livelihood for nomads, wool, milk, meat
Shifting Cultivation (Jhum)	North-East India, tribal areas	Millets, vegetables, forest produce	Food, minor income, cultural identity

☆ Overall, the diversity of farming systems in India ensures food security, generates rural employment and plays a vital role in the livelihood of millions of farm households.

Types of Traditional and Modern Farming Systems

Introduction

Farming systems vary from region to region and over time. They can be broadly classified into traditional and modern farming systems based on the level of technology, inputs, and management practices used.

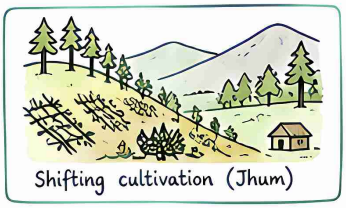
Traditional Farming Systems

Definition

Traditional farming systems are the age-old systems of agriculture based on indigenous knowledge, local resources and low external inputs. They are mainly labour intensive and depend on natural processes.

Types of Traditional Farming Systems

1. **Shifting Cultivation (Jhum)**
   - Common in hilly and forest areas.
   - Involves clearing and burning of forest land.
2. **Subsistence Farming**
   - Grown for family consumption.
   - Low surplus, low input, low productivity.
3. **Mixed Farming**
   - Combination of crop and livestock.
   - Common in small and marginal holdings.
4. **Nomadic/Transhumance Farming**
   - Seasonal movement with livestock.
   - Common in arid and semi-arid regions.
5. **Primitive/Extensive Farming**
   - Low input, low output.
   - Uses simple tools and traditional methods.



Shifting cultivation (Jhum)

Key Features

- Low technology
- Dependence on nature
- Low productivity
- Labour intensive
- Limited market access

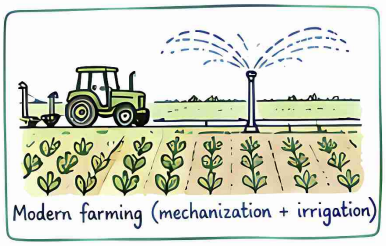
Modern Farming Systems

Definition

Modern farming systems are advanced and technology-based systems of agriculture that use improved inputs, mechanization and scientific practices to increase productivity, profitability and sustainability.

Types of Modern Farming Systems

1. **Intensive Farming**
   - High use of inputs (fertilizers, pesticides, irrigation).
   - Multiple cropping and high productivity.
   - Common in fertile plains and irrigated areas.
2. **Commercial Farming**
   - Grown for market and profit.
   - Includes cash crops (cotton, sugarcane, tea, coffee etc.).
   - Uses modern technology and better resources.
3. **Plantation Farming**
   - Grown on large estates for industrial crops.
   - Examples: tea, coffee, rubber, coconut, oil palm.
4. **Integrated Farming System (IFS)**
   - Combines crops, livestock, fisheries, horticulture etc.
   - Ensures better resource use and income stability.
5. **Organic Farming**
   - Uses organic inputs and natural methods.
   - No synthetic chemicals.
   - Focus on soil health and sustainability.



Modern farming (mechanization + irrigation)

Key Features

- High technology
- Improved inputs
- High productivity
- Market oriented
- Sustainable & scalable

Comparison of Traditional and Modern Farming Systems

Basis	Traditional Farming Systems	Modern Farming Systems
Technology	Low, simple tools	High, mechanization and scientific methods
Inputs	Minimal, natural resources	High (fertilizers, pesticides, improved seeds, irrigation)
Productivity	Low	High
Cropping Pattern	Mostly traditional crops, single/mixed	Multiple cropping, high value crops
Labour	Labour intensive	Capital + labour intensive
Market Linkage	Limited	Strong, market oriented
Environmental Impact	Often degrades soil and resources	Better resource use, but can cause pollution if mismanaged
Economic Returns	Low and uncertain	Higher and more stable
Sustainability	Low (resource depletion)	More sustainable (with proper management)

Important for Exam

- Traditional systems are based on indigenous knowledge.
- Modern systems focus on technology, input use and market.
- Both systems have their own importance and are region specific.

Remember

Traditional → survival & subsistence

Modern → productivity & commercialisation

Components of Farming System / Farming-Based Livelihood Systems

Meaning

Farming systems / farming-based livelihood systems are made up of different components that work together to produce food, generate income and provide employment and livelihood security to farm households.

Key Components

- Crops and cropping systems
- Livestock (dairy, piggery, goatry, poultry, duckry etc.)
- Horticultural crops
- Agro-forestry systems
- Aquaculture (duck/poultry cum fish, dairy cum fish, piggery cum fish etc.)

1 Crops and Cropping Systems

Crops

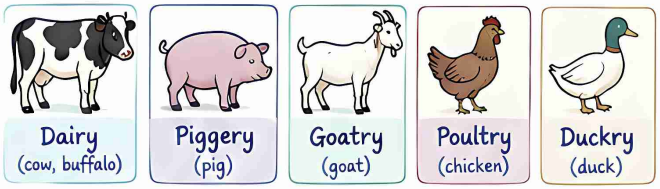
- Food crops: rice, wheat, maize, millets.
- Cash crops: cotton, sugarcane, oilseeds, etc.
- Pulses: chickpea, pigeon pea, green gram, etc.
- Vegetables & spices: tomato, chilli, onion, turmeric, etc.

Cropping systems

- Monocropping, mixed cropping,
- intercropping, crop rotation, relay cropping, etc.

2 Livestock

Livestock provides milk, meat, eggs, draft power, manure and additional income.



Key benefits

- Provides regular income and nutrition.
- Utilizes farm by-products (crop residues, kitchen waste).
- Supports rural employment and women empowerment.

3 Horticultural Crops

Includes fruits, vegetables, spices, plantation crops and medicinal & aromatic plants.

Examples

- Fruits: mango, banana, citrus, guava, papaya.
- Vegetables: tomato, brinjal, chilli, cabbage, etc.
- Spices: turmeric, ginger, cumin, coriander, etc.
- Plantation crops: coffee, tea, rubber, coconut, etc.
- Medicinal & aromatic plants: tulsi, mint, aloe vera, etc.

4 Agro-forestry Systems

Combines trees with crops and/or livestock on the same land to get multiple products and benefits.

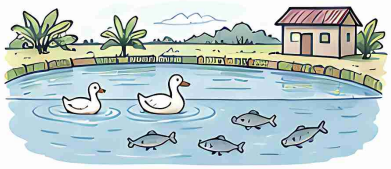
Benefits

- Improves soil fertility and prevents erosion.
- Provides fuelwood, timber, fodder and fruits.
- Diversifies income and reduces risk.
- Helps in carbon sequestration and climate resilience.

5 Aquaculture (Integrated Farming Systems)

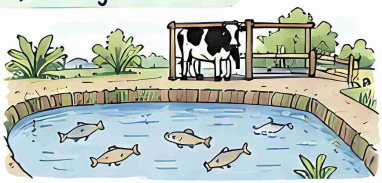
Combines fish culture with other farm enterprises for better resource use and higher income.

a) Duck/Poultry cum Fish



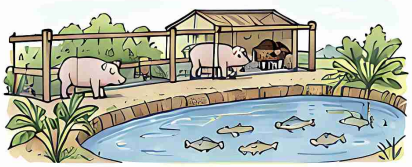
- Ducks/poultry control pests and weeds.
- Their droppings act as natural fertilizer for fish.
- Increases fish production and income.

b) Dairy cum Fish



- Cow dung and urine fertilize the pond.
- Provides both milk and fish.
- Efficient use of water and land resources.

c) Piggery cum Fish



- Pig waste is used as pond fertilizer.
- Gets both pork and fish.
- Reduces waste and increases productivity.

Overall Significance

- These components work together in an integrated way to ensure food security, higher income, efficient resource use and sustainable livelihoods for farm households.

More Diversity = Stronger Livelihoods

Small, Medium and Large Enterprises including Value Chains and Secondary Enterprises as Livelihood Components for Farmers

Introduction

Farmers' livelihoods are strengthened when they adopt a mix of enterprises of different sizes, participate in value chains and develop secondary enterprises. These components create multiple income sources, reduce risk and increase income, employment and overall well-being.

Key Components

- Small, medium and large enterprises
- Value chains
- Secondary enterprises

All these act as livelihood components by creating income, employment and market linkages for farmers.

Diversified Enterprises = Stronger Livelihoods

1. Small, Medium and Large Enterprises

Small Enterprises

- Low investment, family-based.
- Simple technology and local resources.
- Easy to manage and flexible.
- Examples: goat rearing, backyard poultry, vegetable cultivation, small processing units, beekeeping.

Benefit: Quick income, low risk, suitable for marginal farmers.

Medium Enterprises

- Moderate investment and scale.
- Uses improved technology.
- Requires some skilled labour.
- Examples: dairy farming, fish culture, mushroom production, agro-processing (flour mill, oil expeller), seed production.

Benefit: Higher returns, more employment, better market access.

Large Enterprises

- High investment and large scale.
- Advanced technology and mechanization.
- Requires skilled labour and management.
- Examples: commercial dairy, large poultry farms, sugarcane processing, rice mills, large-scale horticulture.

Benefit: High profit, economies of scale, strong market linkage.

2. Value Chains

Value chains include all activities from input supply to final consumption, adding value at each stage. Farmers participate in different stages to receive better prices and higher income.

Typical Agricultural Value Chain

Input Supply (seeds, fertilizer, feed, machinery) → Production (farming, rearing, fishing) → Collection & Aggregation (FPOs, cooperatives, collectors) → Processing (cleaning, grading, packaging, value addition) → Marketing & Distribution (wholesalers, retailers, exports) → Consumer (local/national/global markets)

3. Secondary Enterprises

Secondary enterprises use farm produce as raw material or provide additional services. They increase value addition, create extra income and full-time employment, and reduce post-harvest losses.

Examples of Secondary Enterprises

Agro-processing
- Pickle, jam, juice
- Flour, oil, jaggery
- Dairy products
- Dried fruits/veg

Livestock based
- Milk processing
- Cheese, paneer
- Meat processing
- Eggs & egg products

Non-farm/other
- Handicrafts
- Biofertilizer
- Vermicompost
- Mushroom cultivation

Service based
- Custom hiring
- Farm machinery rental
- Input supply
- Rural tourism

Importance

- Diversifies income sources and reduces dependence on a single enterprise.
- Enhances resource use efficiency (land, labour, water, etc.).
- Creates employment for family and rural youth.
- Strengthens value chains and market linkages.
- Builds resilience against climate and market risks.

Small + Medium Enterprises → Value Chains → Secondary Enterprises

More Enterprises → More Income → Better Livelihoods

Factors Affecting Integration of Various Enterprises of Farming for Livelihood

Introduction

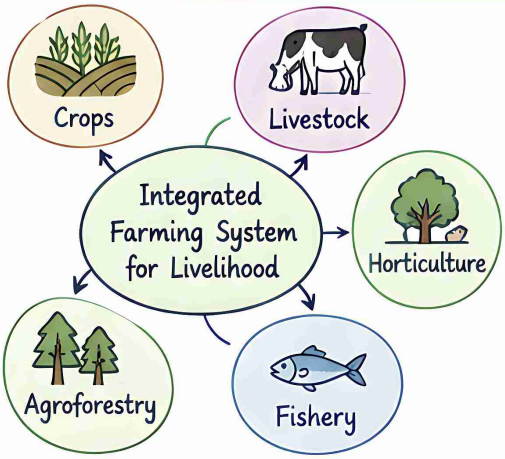
Integration of various farm enterprises (e.g., crops, livestock, horticulture, fisheries, agroforestry, etc.) helps in better resource use, higher income and risk reduction. However, the success of integration depends on several factors, which can be grouped into different categories.

Key Factors

1. **Natural Resource Endowment** – land, water, soil fertility, climate, topography.
2. **Economic Factors** – input costs, market demand, price stability, profitability, credit and subsidies.
3. **Social Factors** – family labour, education, skill level, tradition, gender roles, social networks.
4. **Institutional & Policy Support** – extension services, credit facilities, infrastructure, government schemes, land tenure laws.
5. **Technological Factors** – availability of improved varieties, machinery, ICT, value addition technologies.

1. Natural Resource Endowment

- **Land quality & size** – determines what enterprises can be combined.
- **Water availability** – essential for irrigation, livestock and aquaculture.
- **Climate** – affects crop, livestock and horticulture suitability.
- **Topography** – influences type of enterprises (e.g., terrace farming, hill crops).
- **Soil fertility** – affects productivity of crops and fodder.



2. Economic Factors

- Input availability and cost (seeds, feed, fertilizer, fuel).
- Market demand and price fluctuations.
- Access to credit and financial services.
- Profitability and risk management.
- Value addition and processing opportunities.

3. Social Factors

- Family labour availability and skills.
- Education and training level.
- Gender roles and decision-making.
- Traditional knowledge and local practices.
- Collective action and social networks (FPOs, SHGs, cooperatives).

4. Institutional & Policy Support

- Extension and advisory services.
- Credit and insurance facilities.
- Infrastructure (roads, storage, market yards).
- Government schemes and subsidies (e.g., PM-KISAN, KCC, NRLM).
- Land tenure and resource rights.

5. Technological Factors

- Improved seeds and breeds.
- Farm machinery and tools.
- Integrated nutrient & pest management (INM/IPM).
- ICT and digital platforms (weather, market, advisory).
- Processing and value addition technologies.

6. Environmental & Sustainability Factors

- Climate change and extreme weather.
- Soil and water conservation.
- Biodiversity and ecosystem services.
- Sustainability of resource use.
- Environmental regulations and ecological balance.

7. Market and Value Chain Factors

- Access to markets and buyers.
- Transportation and logistics.
- Processing and storage facilities.
- Value chain linkages (input suppliers, processors, retailers).
- Consumer preferences and quality standards.

Conclusion

The integration of multiple farm enterprises for livelihood is influenced by a combination of natural, economic, social, institutional, technological, environmental and market factors. Addressing these factors holistically enhances proactivity, income stability and long-term sustainability for farming households.

Integrated Farms = Better Livelihoods

Feasibility of Different Farming Systems for Different Agro-Climatic Zones

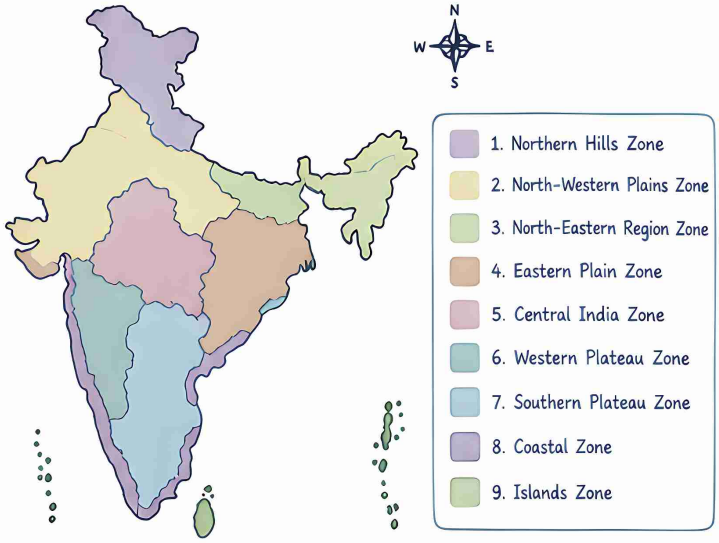
Introduction

Different agro-climatic zones have unique climate, soil, water and resource conditions. Therefore, farming systems must be selected according to the suitability of each zone to ensure higher productivity, profitability and sustainability.

Key Factors for Feasibility

- **Climate** — Rainfall, temperature, length of growing season, frequency of droughts/floods.
- **Soil** — Soil type, fertility, depth, drainage, pH.
- **Water Resources** — Irrigation availability, groundwater, water quality.
- **Topography** — Land slope, elevation, plains/hills, drainage.
- **Market & Infrastructure** — Access to markets, roads, storage, processing.
- **Socio-economic** — Farmer's knowledge, capital, labour, policy support.

India's Agro-Climatic Zones



India – 9 Agro-Climatic Zones

Feasible Farming Systems in Different Agro-Climatic Zones

S. No.	Agro-Climatic Zone	Key Features	Suitable / Feasible Farming Systems
1	Northern Hills Zone	• High rainfall (1000–2000 mm) • Cool climate • Sloping land, shallow soil	• Horticulture (apple, peach, plum) • Temperate vegetables (cabbage, potato) • Agro-forestry + livestock (dairy, goatry) • Tea (in suitable areas)
2	North-Western Plains Zone	• Low-moderate rainfall (400–800 mm) • Hot summer, cold winter • Fertile alluvial soil	• Wheat–rice, maize, cotton, sugarcane • Dairy, poultry • Horticulture (citrus, guava) • Agro-forestry (poplar + crops)
3	North-Eastern Region Zone	• High rainfall (1500–3000 mm) • Humid, warm climate • Forested, acidic soils	• Rice + fish (integrated) • Arecanut, tea, spices • Horticulture (banana, pineapple) • Poultry, piggery, duckry
4	Eastern Plain Zone	• Moderate rainfall (800–1200 mm) • Hot & humid • Alluvial soil, flood prone	• Rice–wheat, rice–maize • Pulses, oilseeds • Fish-cum-duck / fish-cum-poultry • Agrk; bamboo)
5	Southern Plateau Zone	• Low rainfall (600–900 mm) • Hot climate • Red & laterite soil	• Ragi, groundnut, pulses • Horticulture (mango, banana, coconut) • Dairy, poultry, goatry • Agro-forestry (cashew + crops)
8	Coastal Zone	• High rainfall (1000–3000 mm) • Humid, moderate temperature • Sandy/loamy soil, saline patches	• Coconut, arecanut, cashew • Rice, vegetables, spices • Fish + prawn culture • Duckry, poultry, dairy
9	Islands Zone	• High rainfall (2000–4000 mm) • Tropical climate • Sandy & coastal soils	• Coconut, arecanut, banana • Spices, tuber crops • Marine fisheries + aquaculture • Poultry, piggery (small scale)

Key Takeaways

- There is no single best farming system for all zones.
- Feasibility depends on matching farming systems with local climate, soil, water and socio-economic conditions.
- Proper planning and support can increase productivity, income and sustainability in all agro-climatic zones.

Conclusion

Selecting suitable farming systems for each agro-climatic zone ensures efficient use of natural resources, reduces risk and improves the livelihoods of farming households across India.

Right System
Right Zone
Better Livelihoods

Commercial Farming-Based Livelihood Models by NABARD, ICAR and Other Organizations across the Country

Introduction

NABARD, ICAR and other organizations have promoted several commercial farming-based livelihood models to enhance farmers' income, create sustainable value chains and strengthen rural economies across India. These models focus on enterprise diversification, technology adoption, market linkages and institutional support.

Key Objectives

- Increase farmers' income and profitability
- Promote value addition and market access
- Encourage sustainable and climate-resilient farming
- Support SHGs, FPOs and cooperatives
- Reduce risk and ensure long-term livelihood security

Better Farming
Better Livelihoods

NABARD
(National Bank for Agriculture and Rural Development)

Commercial Farming-Based Models

1. **Dairy Development**
   - Dairy cooperatives, milk processing units, cold chain.
   - Example: Amul model (replicated across states with NABARD support).
2. **Horticulture & High-Value Crops**
   - Fruit, vegetable, spice and flower cultivation.
   - Support for polyhouses, drip irrigation, post-harvest management.
3. **Integrated Farming Systems (IFS)**
   - Crop + livestock + horticulture + fisheries.
   - Promoted through SHGs and FPOs.
4. **Farmer Producer Organizations (FPOs)**
   - NAFPO/PO financing, capacity building, market linkages.
5. **Agri-Value Chain & Rural Infrastructure**
   - Warehouses, cold storage, processing units, rural haats, e-NAM support.

NABARD provides credit, capacity building, subsidy and technical support to scale up viable commercial farming enterprises.

ICAR
(Indian Council of Agricultural Research)

Commercial Farming-Based Models

1. **Technology-Driven Enterprises**
   - High-yielding varieties, integrated pest management (IPM), precision farming.
2. **Seed & Planting Material Production**
   - Foundation and certified seeds for commercial crops (e.g., hybrid maize, vegetables, oilseeds).
3. **Livestock & Dairy Models**
   - Improved breeds, feed management, disease control, value addition (cheese, yoghurt, ghee).
4. **Horticulture & Floriculture**
   - Tissue culture, protected cultivation, post-harvest technology.
5. **Fisheries & Aquaculture**
   - Fish seed production, cage culture, RAS and integrated fish farming.
6. **Agro-Processing & Value Addition**
   - Food processing, functional foods, ready-to-eat products.

ICAR develops technologies, provides training and extension support to make farming more productive and commercially viable.

Other Organizations & Their Models

SFAC (Small Farmers' Agribusiness Consortium)
- Supports agribusiness and FPO-led models.
- Value chain development, market access, branding and export promotion.

NCDC (National Cooperative Development Corporation)
- Promotes cooperative-based commercial farming (dairy, horticulture, fisheries).
- Provides financial and technical support.

NRLM (National Rural Livelihood Mission)
- Supports SHGs and women-led enterprises.
- Includes organic farming, backyard poultry, yogtery, mushroom, etc.

APEDA (Agricultural and Processed Food Products Export Development Authority)
- Promotes export-oriented farming.
- Support for GI-tagged products, spices, fruits, vegetables, processed foods.

State Agricultural Universities & KVKs
- Region-specific commercial models.
- Training, demonstrations and handholding.

Private Sector & NGOs
- Contract farming, FPO formation, CSR projects, market linkages.

Examples of Commercial Farming-Based Models Across India

Dairy Units (Amul Model)	Vegetable & Flower Commercial Farming	Integrated Farming (Animal + Crop + Fish)	Organic Farming	Spice & Plantation Crops	Fisheries & Aquaculture
					
Gujarat, across India	Maharashtra, Karnataka, Tamil Nadu	West Bengal, Odisha, Assam	Sikkim, Himachal Pradesh, Uttarakhand	Kerala, Karnataka, Tamil Nadu	Andhra Pradesh, Odisha, West Bengal

Impact

- Higher and stable income for farmers
- Employment generation in rural areas
- Strengthened farmer institutions (FPOs, cooperatives, SHGs)
- Better market access and price realization
- Improved food and nutritional security
- Balanced regional development and sustainable resource use

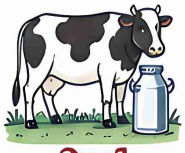
Conclusion

Through NABARD, ICAR and other organizations, commercial farming-based livelihood models have created opportunities for farmers across India. These models, when tailored to local agro-climatic conditions and supported with technology, finance and market linkages, can significantly improve rural livelihoods and ensure long-term sustainability.

Sustainable Farming
Prosperous Farmers
Strong Rural India

Case Studies on Different Livelihood Enterprises Associated with the Farming

1. Dairy Farming – Anand (Gujarat)



Background • Smallholder farmers in Kheda district adopted dairy farming with support from NDDB (Amul).

Intervention • Organized cooperative model, animal health services, assured milk procurement, quality feed and training.

Outcome • Stable daily income, improved nutrition, women's empowerment, rural development.

Key Point • Cooperative-based dairy model is a successful example of farming-linked livelihood.

Amul
The Taste of India

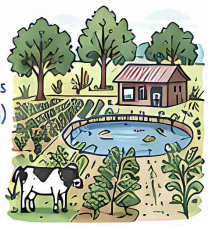
2. Integrated Farming System – ICRISAT (Telangana)

Background • Small and marginal farmers in semi-arid regions faced low and uncertain income.

Intervention • ICRISAT promoted integrated farming systems (crop + livestock + horticulture + agroforestry) with water harvesting and improved varieties.

Outcome • Higher productivity, diversified income, better soil health and climate resilience.

Key Point • Integrated approach reduces risk and increases overall farm income.



ICRISAT
Science for a food-secure future

3. Horticulture-based Livelihood – Maharashtra

Background • Farmers in Pune district had low returns from traditional crops.

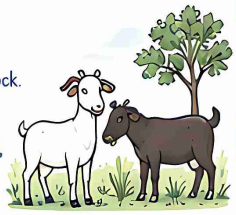
Intervention • Horticulture crops (pomegranate, mango, guava) with drip irrigation and farmer training through Horticulture Department and KVKs.

Outcome • 3–5 times higher income, better market linkages, employment for family members.

Key Point • Horticulture is a profitable and sustainable livelihood option for small farmers.

MahaHorti
Maharashtra State Horticulture Mission

4. Goat Rearing – Rajasthan



Background • Drought-prone area with limited crop productivity; high dependence on livestock.

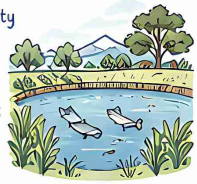
Intervention • NABARD supported women SHGs for improved goat breeds, fodder development, veterinary services and market linkage.

Outcome • Increased income, better nutrition, women's empowerment, risk diversification.

Key Point • Goat rearing is a resilient livelihood option in dryland areas.

NABARD
Transforming Rural Lives

5. Fish Farming – West Bengal



Background • Flood-prone areas with low crop productivity in coastal and delta regions.

Intervention • Integrated fish farming (rice-fish system) with support from state fisheries department and local NGOs.

Outcome • Higher income, year-round employment, improved food security.

Key Point • Fish farming with crops is a suitable livelihood for water-rich areas.

Department of Fisheries
Government of West Bengal

6. Agroforestry – Sub-Himalayan Region (Uttarakhand)

Background • Farmers faced soil erosion, low productivity and fuelwood scarcity.

Intervention • ICAR and State Forest Dept. promoted agroforestry (alder, poplar, fodder trees) with horticulture and crops.

Outcome • Soil conservation, diversified income, fodder and fuelwood, long-term sustainability.

Key Point • Agroforestry improves ecological balance and farm profitability.

ICAR
Indian Council of Agricultural Research

7. Poultry Cum Crop – Tamil Nadu

Background • Farmers had low income from only crop production.

Intervention • Integrated poultry with crop farming (poultry sheds + crop residues as feed) with support from TNAU and state schemes.

Outcome • Additional income from eggs/meat, better nutrient recycling, improved farm efficiency.

Key Point • Integration of poultry with crops maximizes resource use and income.

TNAU
Tamil Nadu Agricultural University

8. Beekeeping – Himachal Pradesh

Background • Farmers in hilly areas had limited income and pollination issues.

Intervention • State Horticulture Dept. and KVKs promoted beekeeping with training, bee boxes and market linkage for honey.

Outcome • Extra income from honey and beeswax, improved pollination and better fruit yield.

Key Point • Beekeeping supports both farm productivity and livelihood diversification.

ICAR
Horticulture Department
Himachal Pradesh

Key Learnings from Case Studies

- Integrated and diversified farming systems reduce risk.
- Support from government and institutions (NABARD, ICAR, KVKs, etc.) is crucial for success.
- Value addition, market linkages and training increase income.
- Women and smallholders are key beneficiaries.
- Sustainable and climate-resilient models ensure long-term livelihood security.

Overall Conclusion

Different livelihood enterprises, when properly supported and integrated with farming, provide additional income, employment, food security and environmental sustainability for farmers across India.

Diversified Farming
Stronger Livelihoods

Risk and Success Factors in Farming-Based Livelihood Systems

Introduction

Farming-based livelihood systems are dynamic and influenced by multiple risks and opportunities. Farmers face various uncertainties, but with the right resources, support and strategies, they can achieve stable income, improved well-being and sustainable livelihoods.

Key Points

- Risks can reduce productivity, income and stability.
- Success factors help in managing risks and improving farm income.
- Both internal (farm level) and external (policy/market level) factors play a role.
- Understanding these factors helps in building resilient and sustainable farming-based livelihoods.

Manage Risks
Build Success

Risk Factors

Risks can be natural, economic, social, technological or institutional in nature.

1 Natural / Environmental Risks

- Droughts, floods, heat waves, frost, hailstorms.
- Pest and disease outbreaks.
- Soil degradation, water scarcity, climate change.

2 Economic Risks

- Price fluctuations of inputs and outputs.
- Market instability and lack of fair prices.
- High cost of credit and low profitability.

3 Social Risks

- Land fragmentation, small land holdings.
- Labour shortage and migration.
- Lack of education and skill gaps.

4 Technological Risks

- Poor access to improved seeds, breeds and inputs.
- Outdated farming practices and equipment.
- Limited access to extension and digital services.

5 Institutional Risks

- Weak policy support and inconsistent schemes.
- Inadequate infrastructure (irrigation, storage, roads).
- Limited access to insurance and institutional credit.

Success Factors

Success factors help farmers manage risks, improve productivity and increase income and resilience.

1 Natural Resource Management

- Soil health, water conservation, efficient irrigation.
- Climate-resilient practices and biodiversity conservation.

2 Access to Resources

- Land, water, quality inputs, credit and insurance.
- Farm machinery and modern technology.

3 Knowledge & Skills

- Training, extension services, farmer field schools.
- Digital literacy and market information.

4 Market Linkages & Value Addition

- Access to better markets and fair pricing.
- Processing, storage and branding.
- Diversification and value addition.

5 Institutional & Policy Support

- Supportive government policies and subsidies.
- Farmer Producer Organizations (FPOs) and cooperatives.
- Insurance, risk management and credit facilities.

6 Diversification & Innovation

- Integrated farming systems and multiple enterprises.
- Adoption of new technologies and sustainable practices.
- Climate-smart and resource-efficient farming.

Key Takeaways

- Risks are inevitable, but can be minimized with proper planning and support.
- Success depends on resources, knowledge, market access and strong institutions.
- Integrated and diversified farming systems increase resilience and reduce overall risk.
- A balanced approach to risk management and success factors ensures sustainable and profitable farming-based livelihoods.

In Short

Manage Risks → Use Success Factors → Sustainable Farming-Based Livelihoods

- Build resilience
- Reduce losses
- Ensure stability

- Improve productivity
- Increase income
- Enhance well-being

Less Risk → More Success → Better Livelihoods

Resilient Farmers → Stronger Communities → Sustainable Future

Schemes and Programs by Central and State Government for Farming-Based Livelihood Systems

Introduction

Government schemes and programmes support farmers and rural communities by providing income support, risk management, irrigation, credit, insurance, infrastructure, diversification, livestock and horticulture development, processing and value addition, and thus strengthen farming-based livelihoods.

State Government Programmes

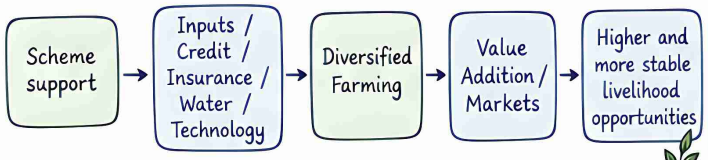
(Example: Madhya Pradesh)

- Mukhyamantri Kisan Kalyan Yojana – State income support to eligible farmers.
- MP Natural Farming Development Yojana – Support for natural farming.
- MP Crop Diversification Promotion Scheme – Encourages diversification of crops.
- Horticulture and Food-Processing Support Programmes – Support for horticulture development and food processing.
- Livestock Schemes – Dairy, goat, piggery, poultry assistance.
- State Irrigation, Farm Mechanization and Farmer Training Programmes – Improve productivity and skills.

Central Government Schemes

1. PM-KISAN – Income support to eligible landholding farmer families (₹6,000/year in three equal instalments).
2. PMFBY – Crop insurance and risk protection to farmers.
3. PMKSY – Irrigation and water-use efficiency.
4. Kisan Credit Card (KCC) – Institutional agricultural credit.
5. Agriculture Infrastructure Fund (AIF) – Financing support for post-harvest and community agricultural infrastructure.
6. RKVY – Support for state agricultural development.
7. PKVY – Promotion of organic farming.
8. DAY-NRLM – Rural livelihoods through SHGs and livelihood activities.

Livelihood Linkage



Importance for Farming-Based Livelihood

- Reduces production risk (e.g., crop failure, price fluctuation).
- Improves access to resources and technology.
- Promotes enterprise diversification (crops + livestock + allied).
- Strengthens market and value chains.
- Creates rural employment and income opportunities.
- Supports sustainable resource use (soil, water, biodiversity)."

Comparison of Central and State Government Programmes

Level	Examples	Main support	Livelihood contribution
Central Government	• PM-KISAN • PMFBY • PMKSY • KCC • AIF • RKVY • PKVY • DAY-NRLM	• Income support • Insurance & risk management • Irrigation & water efficiency • Credit & finance • Post-harvest infrastructure • State agriculture development • Organic farming • SHGs & livelihood promotion	• Stable income • Reduced risk • Better resource access • Improved productivity • Value addition & market linkages • Diversified enterprises • Rural employment
State Government (Madhya Pradesh) as example)	• Mukhyamantri Kisan Kalyan Yojana • Natural Farming Development Yojana • Crop Diversification Scheme • Horticulture & Food Processing • Livestock Schemes • Irrigation, Mechanization & Training	• State income support • Natural farming inputs • Crop diversification incentives • Horticulture & processing support • Livestock assistance • Irrigation, machinery & training	• Higher farm income • Sustainable farming • Better market access • Increased value addition • Livestock-based income • Improved skills & productivity

Important for Exam

- ✓ Central schemes = national level, uniform across states.
- ✓ State schemes = vary from state to state (e.g., MP, UP, etc.).
- ✓ Key focus areas = income support, insurance, irrigation, credit, infrastructure, diversification, value addition.
- ✓ Schemes aim at "sustainable, profitable and inclusive farming-based livelihoods."

Quick Revision

- Central: PM-KISAN, PMFBY, PMKSY, KCC, AIF, RKVY, PKVY, DAY-NRLM.
- State (MP): Kisan Kalyan Yojana, Natural Farming, Diversification, Horticulture, Livestock, Irrigation & Training.
- Goal: Higher income + lower risk + diversification + value addition + rural employment.

Stronger Farmers → Stronger Rural Livelihoods → A Sustainable Future

Public and Private Organizations Involved in Promotion of Farming-Based Livelihood Opportunities

Public Organizations

(Government bodies, research institutes, and public sector agencies)

Ministry of Agriculture & Farmers Welfare (GoI)

- Policy making, schemes, farmer welfare, extension services.
- Supports crop diversification, FPOs, and market linkages.

ICAR (Indian Council of Agricultural Research)

- Research, technology development, and capacity building.
- Supports agri-enterprises, value addition and livelihood models through Krishi Vigyan Kendras (KVKs).

State Departments of Agriculture & Allied Sectors

- Extension services, input supply, training and subsidies.
- Promote schemes like PM-KISAN, crop insurance, soil health and farmer producer organizations (FPOs).

KVKs (Krishi Vigyan Kendras)

- Frontline extension, skill development and training.
- Demonstrations on integrated farming systems and local livelihood models.

NABARD (National Bank for Agriculture and Rural Development)

- Credit, financial inclusion and rural development.
- Supports SHGs, FPOs, value-chain finance and rural enterprises.

RKVY (Rashtriya Krishi Vikas Yojana)

- Funds for agriculture and allied sector development.
- Promotes farm mechanization, irrigation, and diversification.

SFAC (Small Farmers' Agribusiness Consortium)

- Creates market linkages for small farmers and FPOs.
- Supports agribusiness and value addition.

National Horticulture Board (NHB)

- Development of horticulture and high-value crops.
- Provides support for planting material, training and marketing.

Private Organizations

(NGOs, companies, farmers' collectives, and industry bodies)

NGOs (e.g., BAIF, PRADAN, ICRISAT, CARE, WWF-India)

- Community mobilization, training and capacity building.
- Support sustainable agriculture, women empowerment and livelihood diversification.

FPOs (Farmer Producer Organizations)

- Collective marketing, input procurement and value addition.
- Improve bargaining power and income of smallholders.

Agri-input Companies (e.g., Bayer, UPL, Syngenta, DEKALB)

- Provide quality seeds, fertilizers, crop protection and advisory services.
- Support contract farming and technology adoption.

Food Processing & Value Addition Companies

- Procure farm produce, support processing and branding.
- Create market access and employment opportunities.

Microfinance & Rural Finance Institutions

- Provide loans and credit support for farm and non-farm enterprises.
- Help in risk management and financial inclusion.

Export-Import Organizations (APEDA, Spices Board, etc.)

- Promote export of agricultural and processed products.
- Provide market intelligence and global linkages.

Private Extension & Consulting Firms

- Technical advisory, farm planning and enterprise development.
- Support in certification, quality standards and compliance.

Input Suppliers & Agri-Tech Startups

- Offer digital platforms, precision farming, and IoT solutions.
- Improve productivity and market access.

Other Important Organizations & Platforms

Self Help Groups (SHGs)

- Savings, credit and livelihood activities.
- Empower rural women and small farmers.

Cooperatives

- Input supply, credit, processing and marketing.
- Support collective farming and value chains.

CSR Initiatives

- Funding for infrastructure, training and technology.
- Support sustainable livelihood projects.

International Organizations

FAO / World Bank / IFAD

- Technical and financial assistance.
- Support policy, research and capacity building.

Universities & Research Institutions

- Research, innovation and incubation support.
- Link academia with farmers and industry.

Key Roles in Promoting Farming-Based Livelihoods

- ✓ Provide financial and institutional support (credit, subsidy, insurance).
- ✓ Facilitate training, extension and technology transfer.
- ✓ Promote market access and value addition.
- ✓ Enable policy and regulatory support.
- ✓ Build capacity and strengthen farmer collectives (FPOs, SHGs, cooperatives).
- ✓ Encourage sustainable and climate-resilient practices.

Overall Impact

- ✓ Higher and stable farmer income.
- ✓ Diversified livelihood opportunities (on-farm and off-farm).
- ✓ Better access to markets, credit and technology.
- ✓ Stronger rural economies and employment generation.
- ✓ Improved food and nutrition security.
- ✓ Sustainable use of natural resources.

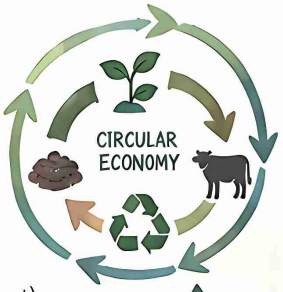
Stronger Farmers → Stronger Rural Communities → A Sustainable Future

Role of Farming-Based Livelihood Enterprises in 21st Century

in View of Circular Economy, Green Economy, Climate Change, Digitalization and Changing Life Style

1. Circular Economy

(Reduce – Reuse – Recycle)



- Utilization of farm & food waste (biogas, compost, animal feed, value-added products).
- Resource efficiency and minimal waste generation.
- Recycling of nutrients (e.g., livestock manure → biogas/compost).
- Strengthens local value chains and creates additional income streams.

From waste to wealth

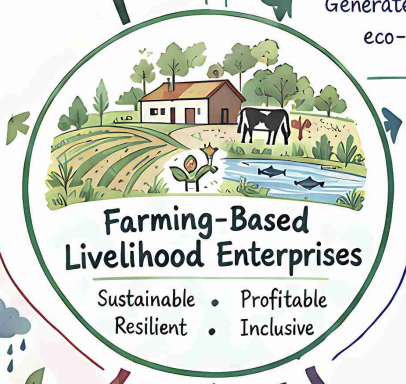
2. Green Economy

(Sustainable + Low Carbon + Nature Friendly)

- Promotes organic and climate-smart farming practices.
- Encourages renewable energy (solar, biogas, biomass).
- Conserves natural resources (soil, water, biodiversity).

Generates green jobs and eco-friendly products.

Greener farming for a healthier planet



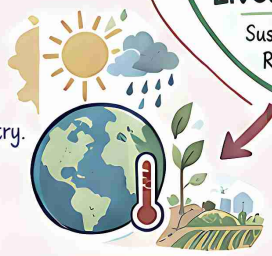
Farming-Based Livelihood Enterprises

Sustainable • Profitable
Resilient • Inclusive

3. Climate Change

(Adaptation + Mitigation + Resilience)

- Diversifies income and reduces dependence on single crop.
- Promotes climate-resilient crops, water management and agroforestry.
- Uses climate information and early warning systems.
- Helps in carbon sequestration (trees, soil, agroforestry).



Stronger livelihoods, more resilient communities

4. Digitalization

(Smart Farming + Data + Connectivity)

- Precision farming (soil testing, weather data, GPS, drones).
- Market access through e-commerce and digital platforms.
- Better decision-making with data and mobile apps.
- Online learning, extension services and financial inclusion (e.g., digital payments, e-NAM).

Technology for smarter and better farming

5. Changing Life Style

(Health + Nutrition + Convenience + Quality)

- Rising demand for safe, nutritious and quality food (organic, traceable, locally sourced).
- Growth in value-added and ready-to-cook products.
- Increased demand for plant-based and functional foods.
- Promotes rural tourism, farm stays and experiential learning.

Healthier people
→ Higher value
→ More opportunities

Key Roles in 21st Century

Economic Growth	Food & Nutrition Security	Environmental Sustainability	Social Inclusion	Rural Transformation
Increases income, employment and rural prosperity.	Ensures safe, diverse and nutritious food for all.	Conserves resources, reduces pollution and protects biodiversity.	Empowers small and marginal farmers, women and youth.	Strengthens rural infrastructure, services and resilience.

In Conclusion

In the 21st century, farming-based livelihood enterprises are not just about producing food, but about building circular, green, climate-resilient, digital and people-centric rural economies. They play a key role in achieving sustainable development, poverty reduction and a better quality of life for future generations.

Sustainable Farming
⇒ Prosperous Rural Communities
⇒ A Greener Future

Smart Farming → Green Economy → Resilient Communities → Sustainable Future