AGRI-BUSINESS MANAGEMENT OPPORTUNITIES FOR YOUTH

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This e-book is a compilation of resource text obtained from various subject experts of MCC, Chennai & MANAGE, Hyderabad, on "Agri-business Management Opportunities for Youth". This e-book is designed to educate extension workers, students, research scholars, academicians related to agriculture extension about the Agri-business Management Opportunities for Youth. Neither the publisher nor the contributors, authors and editors assume any liability forany damage or injury to persons or property from any use of methods, instructions, orideas contained in the e-book. No part of this publication may be reproduced or transmitted without prior permissionof the publisher/editors/authors. Publisher and editors do not give warranty for any error or omissions regarding the materials in this e-book.

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MESSAGE

National Institute of Agricultural Extension Management (MANAGE), Hyderabad is an autonomous organization under the Ministry of Agriculture & Farmers Welfare, Government of India. The policies of liberalization and globalization of the economy and the level of agricultural technology becoming more sophisticated and complex, calls for major initiatives towards reorientation and modernization of the agricultural extension system. Effective ways of managing the extension system needed to be evolved and extension organizations enabled to transform the existing set up through professional guidance and training of critical manpower. MANAGE is the response to this imperative need. Agricultural extension to be effective, demands sound technological knowledge to the extension functionaries and therefore MANAGE has focused on training program on technological aspect in collaboration with ICAR institutions and state agriculture/veterinary universities, having expertise and facilities to organize technical training program for extension functionaries of state department.

In India, about 20 to 30 per cent crop is wasted each year due to spoilage, floods, pests, diseases, improper handling, and lack of awareness about post harvest technologies. In a developing country like India, the agri-business sector has emerged as a field of prime importance. Organisations in all sectors i.e. public, private, and cooperative, are looking to hire competent and well trained professionals and agribusiness managers. The field opens up several avenues for those who hold a degree in Agribusiness management. A career in Agribusiness can open doors to a plethora of industries such as farming, real-estate, retail marketing, food processing and food production. From livestock, farming to human nutrition, food production, Agribusiness covers a significant number of careers globally.

It is a pleasure to note that, SAMETI, Uttarakhand and MANAGE, Hyderabad, Telangana are organizing a collaborative training program on "Agri business management opportunities for youth" during May 23-25, 2022 and coming up with a joint publication as e-book on "Agri business management opportunities for youth" as immediate outcome of the training program.

I wish the program be very purposeful and meaningful to the participants and also the e-book will be useful for stakeholders across the country. I extend my best wishes for success of the program and also I wish SAMETI, Uttarakhand many more glorious years in service of Indian agriculture and allied sector ultimately benefitting the farmers. I would like to compliment the efforts of Dr. Shahaji Phand, Centre Head-EAAS, MANAGE, Hyderabad, and Dr. B.D Singh, Professor, SAMETI, Uttarakhand for this valuable publication.

Dr. P. Chandra Shekara
Director General,
MANAGE

FOREWORD

Owing to decreasing cultivable land under population pressure coupled with its fragmentation over generations, plateau in production and increasing input cost shifted the farmers, entrepreneurs' focus towards the adoption of income generating enterprises like mushroom production, protected cultivation, poultry and dairy farming, bee keeping, aromatic and medicinal plants, vegetable and fruit processing, floriculture etc. A number of technologies have been developed by our university as well as other SAUs and ICAR. These technologies are cost effective and suitable for farmers. Hence, farmers may improve their economic status by the adoption of these technologies.

Looking to the scenario of Uttarakhand Agriculture, It is the prime source of livelihood for over 70 per cent of its population. Commercial agriculture is practiced in the plains while hill farmers are predominantly engaged in subsistence farming. Major crops grown in the state are rice, wheat, sugarcane, maize, soybean, pulses, oilseeds and a number of fruits and vegetables. Finger millet, Barn yard millet, Horse gram, Amaranth, buck wheat etc. are the some of the important crops grown in hilly areas of the state.

Marketing management is one of the biggest challenges for the farmers of hilly area. Many perishable products are damaged / destroyed in transportation from hilly areas, more over input cost also increase resulting into poor return. I am really delighted that realizing the importance and need, SAMETI Uttarakhand organized an online collaborative training program on "Agri business management opportunities for youth" during May 23-25, 2022 sponsored by the National Institute of Agricultural Extension Management (MANAGE), Hyderabad for the Extension officials, entrepreneurs and faculty of SAUs/KVKs/ICAR institutes, etc. I hope that the participants from different parts of the country would have been immensely benefitted from this online course by interacting with the expert resource persons selected for this training. I have no doubt that the course would have been intellectually rewarding to the participants. The compendium for the above said training programme has been designed to provide firsthand knowledge to the readers. Last but not the least, I am thankful to Dean, college of Agri Business Management for allowing his faculty members to deliver lectures. Also, congratulation to Dr B.D Singh, Professor (Agronomy) of the Directorate for smoothly organizing the training programme.

Anil Kumar Sharma
Director
Extension Education & SAMETI-Uttarakhand

PREFACE

Uttarakhand state with diverse agro-climatic endowments, the plains and hills present differing scenarios for agriculture. The hill farmers mainly practice subsistence farming. Although, now a days a number of well-educated rural youth are choosing Agriculture as profession and adopt modern agriculture as per their need and situation. The hills practice mixed cropping, while in the plains in a given season single crops are grown mostly. Irrigated land is available in the plains, with over 87 per cent land being irrigated as against a mere 10 per cent in the hills. The seed replacement rate for the plains stands at 15-20 per cent, while for the hills it is 3-4 per cent. Productivity across the same crops also differs greatly between the hills and plains. In the state, more than 75 percent of the population depends on agriculture for their livelihood. The average size of holding in the state is around 0.98 hectare. Another typical feature of hill farming is the small and scattered land holdings, rain fed farming and mostly adoption of traditional farming system. The productivity of various crops is also very poor.

If we see the marketing scenario of last 2-3 decades of state, it is very poor resulting into in adequate performance. Finally, the sufferers are farmer and entrepreneurs. Now, Government keenly focusing towards this area for the benefit of farmer. Besides, there is big opportunity for entrepreneurship in processing and value addition. The demand for processed and value-added products are increasing year by year and expected to grow further in the future in domestic as well as international market. There by realizing the need and importance, an online training had organized by SAMETI Uttarakhand in collaboration with MANAGE, Hyderabad on the topic "Agri business opportunities for youth" during May 23-25, 2022. The topic of very relevant training has been carefully identified to offer possible solutions to common problems/ issues encountered in business management. This e-book was made possible by the sincere efforts of the contributing authors and is the outcome of collaborative online training program. This book will be highly useful to field functionaries as well as extension workers who are working at the ground level. The editors express sincere thanks to Dr. Manmohan Singh Chauhan, Hon'ble Vice-Chancellor, G B Pant university of Agriculture and Technology, Pantnagar for encouragement in publishing this e-book. The financial aid provided by MANAGE, Hyderabad for this training program is duly acknowledged. Last but not least, the cooperation and support rendered by Dr Sneha Dohare, Assistant Professor, College of Agri business management is highly appreciated.

May, 2022

Dr. Shahaji Phand
Dr. Anil Kumar Sharma
Dr. B.D. Singh
Dr Sushrirekha Das

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Chapter-1

Agribusiness Management - Overview

Dr. Saurabh Singh, Assistant Professor

College of Agri-Business Management

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"It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest."

– Adam Smith ("An Inquiry into the Nature and Causes of the Wealth of Nations" 1776)

Introduction

Indian agriculture today does not stand on any one level when it comes to its development. It cannot be also in a vast country like India, which differing topographies, different agro-climatic zones, different level of soil fertility, difference in availability of water for irrigation, differing income and education level of citizens. Despite of it, at significant level Indian agriculture is witness and undergoing the transition directed towards agribusiness, though at some places in the country it's still primitive agriculture that is being practiced. Transition of agriculture towards agribusiness conveys that present day farmers are practicing agriculture in professional manner with intent of transforming it into commercial and more profitable activity as compared to early days. The farmer of today is aware of the fact that just farming alone will not do it, therefore he thinks of backward and forward integration and attempts to manage the entire supply chain to make whole process more efficient and profitable.

Agribusiness is a sector that supports the growth of the agricultural industry, which is pivotal to economic growth. It also continues to play a crucial role in the growth of developing countries. Agribusinesses can potentially improve agricultural productivity, which is why governments often offer subsidies to agricultural businesses. Agricultural activities also contribute to an improved system of food security and sustainable food production, as well as income for a majority of the poor in developing countries. However, the activities increase the

emission of greenhouse gases and contribute to global warming – which is why innovation is important to the sector to address such problems.

Conceptually agribusiness sector includes five distinct sub-sectors viz. inputs; production; processing; marketing and trade; and agricultural finance. These distinct sub – sector contribute towards value addition by way increasing the farm income, saving loss of farm products along the traditional supply chain, and creating more employment opportunities. Sound development of agribusiness provides a new frontier by creating an environment of much needed investment in agriculture marketing and trade. While the share of agriculture in GDP is declining over time, the share of agribusiness is consistently rising over last couple of decades. In 2017, the market value of agribusiness in India was estimated to be at about 287 billion U.S. dollars. This was projected to reach a market value of 350 billion dollars for 2022 (Statista 2022).

The business of agriculture or agribusiness has been practiced by human since very early days of various human civilizations in one form or the other, but the word “Agribusiness” as per many experts is of recent origin and two Harvard Business School professors, John Davis and Ray Goldberg after they published the book "A Concept of Agribusiness" in 1957 are credited with coining this term. This is despite of the fact, that even in western world, the earliest known use of this word is found in the Volume 155 of the Canadian Almanac & Directory published in 1847. Post 1956 various scholars have attempted to define the term “Agribusiness” in their own way. Some of them are produced below to help readers get a perspective of what all Agribusiness includes.

Davis and Goldberg (1956) defined “Agribusiness” as” the sum total of all operations involved in the manufacture and distribution of farm supplies; production operations on the farm; and the storage, processing, and distribution of farm commodities and items made from them."

Mark and Clifford (2005) of Loyola University Chicago reframed the definition of Agribusiness and put it as "A dynamic and systemic endeavour that serves consumers globally and locally through innovation and management of multiple value chains that deliver valued goods and services derived from sustainable orchestration of food, fiber and natural resources."

In 2012, Thomas and Boland defined the unique economic characteristics of agribusiness supply chains from industrial manufacturing and service supply chains. They have identified seven main characteristics:

1. Risks emanating from the biological nature of agrifood supply chains
2. The role of buffer stocks within the supply chain
3. The scientific foundation of innovation in production agriculture having shifted from chemistry to biology
4. Cyberspace and information technology influences on agrifood supply chains
5. The prevalent market structure at the farm gate remains oligopsony
6. Relative market power shifts in agrifood supply chains away from food manufacturers downstream to food retailers
7. Globalization of agriculture and agrifood supply chains

Goldberg (2017) defined “Agribusiness” as "the interrelated and interdependent industries in agriculture that supply, process, distribute, and support the products of agriculture."

The attempts made by numerous scholars and specially those quoted above, in defining ‘Agribusiness’ leads to an understanding that “Agri-Business includes all, either a product, commodities or a service and encompasses items such as 1) productive resource (feed, seed, fertilizers, equipments, energy, machinery etc. 2) Agricultural commodities (all food and fiber). 3) Facilitative services (credit, insurance, marketing, storages, processing, transportation, packing, distribution). Agribusiness is a term used to describe the sector that encompasses all economic activities that are related to farming, i.e., chemicals, breeding, crop production/farming, farm machinery, distribution, marketing, and sales.

The field deals with multiple aspects of getting a product to market. Risk management helps farmers and businesses deal with the ever-changing nature of the environment while food processing helps create products that are fit for consumption. Farm management cares not only for the crops or animals but the farm machinery involved in caring for and preparing the farm. The agricultural industry is large enough to have many moving parts, but even small farms must have some forms of agribusiness in place to handle day to day operations.

DIMENSIONS OF AGRI-BUSINESS

1. It deals with different components of both agricultural and industrial sector, their interdependence and influence of one sector on other.

2. It deals with decision making process of farm either private or government in relation to production and selling aspects.
3. It deals with strengths and weaknesses of a project and thereby their viability in competing enterprises.
4. Agri-business is always market oriented.
5. Structure of Agri-business is generally vertical and it comprises the following
    i. Govt. policies and programmes regarding raising of crops or taking enterprises etc.,
    ii. Research and extension programmes of the Govt.
    iii. Farm supplies or inputs
    iv. Agricultural production
    v. Processing
    vi. Marketing of agricultural products

UNIQUE CHARACTERISTICS OF AGRIBUSINESS

It may be easy to argue that management theory and principles are the same for any type of business enterprise. In many cases, good management is good management, regardless of the type of firm, or the market it is operating in. Yet key differences between large and small businesses or between agribusinesses and other types of firms arise in the specific business environment facing the organization. Therefore, management approach in case of agribusiness industry differs with that of other industries. The major traits of agribusiness that differentiate it from other industries and force adoption of different management approach can be put as below.

1. Uncertainty of the weather

Due to inherent nature of agricultural production food and agribusiness firms must deal with the vagaries of nature. Drought, flood, insects, and disease are a constant threat for most agribusinesses. This makes the production also uncertain. Thus agriculture is subjected to both higher risk and uncertainty which is not the case for other industries. All market participants, from the banker to the crop production chemical manufacturer are concerned with the weather.

2. Food as a product

Food is one of the most fundamental needs of humans due to being vital for survival and health of individuals. First worry of all the governments across the globe is of feeding their people and therefore, food is considered as a critical component of national security. Only after meeting the

requirement of food security, governments can turn their attention to higher order needs. Consequently the food system attracts attention from governments in ways other industries do not.

3. Biological nature of production agriculture

Both crops and livestock are biological organisms — living things. The biological nature of crops and livestock makes them particularly susceptible to forces beyond human control and this makes the agricultural products perishable. The variances and extremes of weather, pests, disease, and weeds exemplify factors that greatly impact production. Biological Nature of product makes production uncertain whereas Perishable nature of product influences the marketing. These attributes of the product make speedy handling of product and cold chain infrastructure essential to market them.

4. Seasonal nature of business

Partly as a result of the biological nature of food production, firms in the food and agribusiness markets can face highly seasonal business situations. Sometimes this seasonality is supply driven — massive amounts of corn and soybeans are harvested in the fall. Sometimes this seasonality is demand driven — the market for ice cream has a series of seasonal peaks and valleys, as do the markets for turkey and cranberries. Such ebbs and flows in supply and demand create special problems for food and agribusiness managers.

5. Types of firms

There is a great variety across the types of firms in this sector. A list of stakeholders may make a normal individual go dizzy. The stakeholders, besides others, include farmers, transportation firms, manufacturers, storage firms, mining firms, financial institutions, brokers, wholesalers, processors, retailers, food chains, and restaurants. The variety in size and type of agribusinesses, ranging from giants like ITC to individual farms, shapes the agribusiness environment.

6. **Variety of market conditions**

The wide range of firm types and the risk characteristics of agribusiness markets have resulted in equally wide range of market structures. In case of one agricultural product, like cotton, wheat etc., there can be perfectly competitive market where individual sellers have almost no influence over price. Markets for some agricultural products are global, whereas for other they may be totally local. In some markets buyer and seller have near equal bargaining, while in others they may be skewed.

7. **Government involvement**

Government has a fundamental role in agribusiness sector. Many agricultural products are directly influenced by government programmes and regulations. Some government programs influence commodity prices and farm income, while there are others intended to protect the health of the consumer through safe food and better nutrition information. Government through its policies regulates the use of chemicals for crop protection Tariffs and quotas impact international trade.

COMPONENTS OF AGRIBUSINESS

Some of the components of the agribusiness sector are described below:

1. **Agrochemicals**

Agrochemicals are the chemicals used in practice of agriculture as pesticides, fertilizers, and growth chemicals.

2. **Breeding**

Breeding refers to the branch of agriculture that focuses on raising animals for food products and/or the breeding of plant species to produce a genetically-enhanced crop seed.

3. **Machinery and Equipment**

The machinery and equipment segment happens to be one of the biggest segments in Agribusiness, and it includes all types of farm machinery – ranging from hand tools, such as shovels, to tractors.

STRUCTURE OF AGRI-BUSINESS

Agri-business sector provides crucial backward and forward linkages involving three important sectors.

1. Input sector: It deals with the supply of inputs required by the farmers for raising crops, livestock and other allied enterprises. These include seeds, fertilizers, chemicals, machinery and fuel. Thus it deals with agro-based industries providing seeds, fertilizers, feed, chemicals etc., and also the industries that supply machinery, implements and petroleum etc.

2. Farm sector: It aims at producing crops, livestock and other products.

3. Product sector: It deals with production and distribution of farm commodities and covers a spectrum of issues like storage, processing and marketing the finished products so as to meet the dynamic needs of consumers.

Therefore, Agribusiness is sum total of all operations or activities involved in the business of production and marketing of farm supplies and farm products for achieving the targeted objectives.

SCOPE OF AGRI-BUSINESS

Establishment of an agri-business enterprise results in strengthening of infrastructural facilities, expansion of credit; raw materials supply agencies, adoption of modern technology in production and marketing of agricultural products. It provides for the much needed backward and forward integration. Agri-business generates potential employment opportunities too in agribusiness management and trade. Due to its nature of covering a wide range of activities of differing magnitude, agribusiness has got tremendous scope. It encompasses input supply Sector; Product Marketing Sector; Processing Sector; and Wholesale and Retail Sector. Students have earned their degree in agribusiness too have great scope of getting employment in the mentioned sectors; otherwise they always have choice of turning into an Agripreneur.

Chapter-2

Role of ICT in Agribusiness Management

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Introduction:

Information and communication technology (ICT) has played vital role in every sector whether it is Education, Sports or Health. Along with these it has contributed efficiently in field of agriculture and has provided every possible way to make agriculture easy and fruitful profession worldwide. In modern world ICT (information and communication technology) and agriculture are both dependent on each other. ICT when linked with agriculture is resulted in new discipline that is called E- Agribusiness. As in past agriculture was so complicated that farmer was not aware of modern techniques and methods. It took so long for farmer to work, sometimes it took whole year and as a result he could not get handsome amount thus in past farmer was living from hand to mouth. Information and communication technology in agriculture (ICT in Agribusiness), also known as e-agriculture, is developing and applying innovative ways to use ICTs in the rural domain, with a primary focus on agriculture.ICT in Agribusiness offers a wide range of solutions to some agricultural challenges. ICT (Information & Communication Technology /Technologies) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and etc, as well as the various services and applications associated with them, such as videoconferencing and distance learning.

Advantages of ICT in E- Agribusiness:

- It can initiate new agricultural and rural business such as e-commerce, real estate business for satellite offices, rural tourism, and virtual corporation of small-scale farms. It can support policy-making and evaluation on optimal farm production, disaster

management, agro-environmental resource management etc., using tools such as geographic information systems (GIS).

- It can improve farm management and farming technologies by efficient farm management, risk management, effective information or knowledge transfer etc., realizing competitive and sustainable farming with safe products.
- It can provide systems and tools to secure food traceability and reliability that has been an emerging issue concerning farm products since serious contamination such as chicken flu was detected.
- It can facilitate rural activities and provide more comfortable and safe rural life with equivalent services to those in the urban areas, such as provision of distance education, telemedicine, remote public services, remote entertainment etc.
- Development of Knowledge Management, Decision Support and Advisory Systems to strengthen Extension services and also used for Farmers Redressal system
- Improved productivity and profitability of farmers through better advisory systems.

POTENTIAL OF ICT IN AGRICULTURE

The ICT in agriculture has its potential in two different ways- direct and indirect. The direct potential of ICT is when it is used as a tool contributing directly to the productivity of the crop yield while indirectly also it can be used where it provides information to the farmers for making quality decisions in the efficient management of their enterprises which otherwise is very mediocre. Direct contribution involves precise farming in the developed countries where there is the intensive use of ICT and its contribution directly to productivity and crop yield. In order to increase productivity, satellite technologies with remote sensors, geographic information systems (GIS), agronomics, and soil sciences are applied. ICT helps the farmers to track and monitor the weather conditions on a regular basis. Meteorological stations on fields supplied with solar energy can be connected to the computers of farmers in order to send information on current temperature, humidity conditions of the air and soil, rainfall, moisture of soil, length of the day, speed of the wind, solar radiation, amount of sunlight, etc. All these technologies are required for precise farming and result in increased quality of the crop yield.

Changes in the agricultural environment that farmers ace make the information useful and it becomes necessary for them to stay competitive and survive in globalized markets. However, efforts on providing ICT will be wasteful if they do not know how to use ICT effectively. Therefore, minimum computer literacy is very important for the farmers to utilize ICT in the best possible way. ICT would have the potential of making Indian farmers globalized. Through the internet, they can track the prices and communicate with farmers around the world as often as they want to. They can exchange ideas, ask questions and get answers for specific themes. Specific importance is when receiving feedback and suggestions from agronomists and researchers on the cultivation of crops and animals. ICT influences on reduction of the gap that presently exists between agricultural researchers and farmers. The reduction would definitely help the farmers leading to highly developed agriculture having an enormous contribution to the national economy and society

ICT empowers the farmers

- ICT provides information on the market trends and prices which helps the farmers to negotiate prices, protect their food security and livelihoods. The following areas where ICT can be applied are-
- Agricultural Advisory: ICT provides weather forecasts, crop-specific advisory according to the stage in the crop cycle, and price information which empowers the farmers and prepares them to gain maximum profit from the available resources.
- Agricultural marketing: ICT tools and technologies enable farmers to manage their supply chains and control production. ICT platforms assist in making better decisions regarding transportation and logistics, price and location, supply and demand, and cheaper access to inputs.
- The ICT platforms also facilitate financial transactions, capturing data about crop loss and damage assessment which would help in getting insurance claims for the farmers.
- ICT provides a means for exchanging vital information between the farmers and the service providers. Farmers always need services like credit, savings, transfer and payment facilities, insurance claims to achieve economic growth. The ICT has the potential to provide more diverse, financial facilities and lower business and transaction costs.

- ICT has resulted as game changer for agriculture sector due to strong bond of ICT this sector has reached to great heights. ICT has enhanced agriculture and developed rural domain through improved information and communication process.
- Through using these devices such as telephones and computers it is now easy to make timely decisions, It means that we can learn and get information about weather conditions in which crops should be harvested or cultivated.
- Through radio and televisions information about weather forecast and seasonal crops are beneficiary for farmers. Through mobile phones communication is very easy and information could be transferred easily from one place to another.
- Farmers get information about seeds and new fertilizers that are important for crops ,they also get familiar to many fatal diseases that are responsible for destruction of crops and their possible solutions .Internet is helpful as it provides up to date information of import and export ratio, stock market ,rise and decline of GDP .
- In a nutshell, role of ICT could never be neglected as through this agriculture has turned into E-Agriculture. This modern term with vast meanings and huge benefits has developed many countries.
- Modern techniques and methods are being used, there is increase in export, farmers are being educated, communication has become easier, as a whole it is shaping and fortifying economy of countries.

CONCLUSION

Farmers now need information about trend and technology needed in farming so as to produce more and participate effectively in setting price of their product. To make all this possible huge utilization of ICT must be taken as the first priority.

Chapter-3

Importance, Production Technology and Value Addition in Millets

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Importance of Millets

- Dual purpose crop i.e. grown for food and fodder and thus providing livelihood security to number of house hold and contributing economic efficiency of farming.
- Great source of starch, making it a high-energy food.
- Highly nutritious and rich in Vitamin B, Calcium, Iron, Potassium, Magnesium, Zinc etc.
- Excellent source or protein and fiber.
- Millets are quite rich in potassium which support effective kidney and heart functioning.
- Millets are also rich in calcium (10 per cent more than rice or wheat) and suitable for pregnant ladies and diabetic patient.
- The fiber available in millets favors our digestion.
- The crop may be grown easily even with least management practices (compare with rice and wheat).
- Millets have much more drought tolerant capacity when compared with rice and wheat.
- These crops are grown as rainfed crops in poor fertile/neglected soils, even then perform well and give satisfactory yield.
- Millets easily adopt themselves under changing climatic conditions and also less affected by insect pest.
- The year 2023 is going to be celebrated as “International Year of Millets”

Reasons of Low Productivity

- Grown as rainfed crop in poor fertile and neglected soil.
- Cultivation by traditional system and non-adoption of improved practices.

- In hilly areas, farmers have scattered land where it is difficult to adopt improved agricultural practices.
- Mostly farmer's use un decomposed FYM which invite the most harmful insect i.e. white grub in the field which affect the yield of crop drastically.
- Least or negligible chemical fertilizer use.
- Non adoption of plant protection measures.

Major Millets

Name of Crop- Hindi	Neme of Crop- English	Botanical Name
eaMqok @jkxh	Finger Millet	*Elesusine coracana Gaertn*
ekfnjk@lkaok@>axksjk	Barnyard Millet	*Echinochloa Frumentacea* (L.)
dkS.kh@dkWxuh	Foxtail Millet	*Setaria italica Beauv* (L.)
phuk @ph.kk	Proso Millet	*Panicaum miliaceum* L.

Production Technology of Finger Millet High Yielding Varieties

Name of Variety	Year of Release	Productivity (qt./ha)	Recommended Area
VL Mandua 380	2019	18-20	Hilly areas of Uttarakhand
VL Mandua 379	2018	30-32	Jharkhand, Madhya Pradesh and North East States
VL Mandua 376	2018	28-30	Uttarakhand, Andhra Pradesh, Bihar, Jharkhand, Gujrat, Karnataka, Madhya Pradesh and Orissa
VL Mandua 348	2016	18-20	Hilly areas of Uttarakhand
VL Mandua 352	2014	25-30	Hilly areas of Uttarakhand Including all mandua producing states (except Maharastra and Tamil Nadu)
VL Mandua 347	2012	20-22	Uttarakhand, Bihar, Gujrat, Jhankhand, Karnataka, Madhya Pradesh
Pant Ranichauri Mandua-2	2007	20-25	Hilly areas of Uttarakhand- Rainfed
Pant Ranichauri Mandua-1	2006	20-25	Hilly areas of Uttarakhand- Rainfed
VL Mandua 315	2006	20-25	Hilly areas of Uttarakhand
VL Mandua 324	2006	20-25	Hilly areas of Uttarakhand
VL Mandua 146	1996	25-30	Uttarakhand, Bihar, Orissa, Maharastra, Karnataka
VL Mandua 149	1991	25-30	Hilly areas of Uttarakhand Including all mandua producing states (except Andhra Pradesh and Tamil Nadu)

Sowing Time

High Hills (more than 1500 meter) - Second fort night of May

Mid Hills (1000-1500 meter) - May last week- June first week

Lower Hills (less than 1000 meter) -First fort night of June

Seed Rate and Method of Sowing

- Direct seeded: 8-10 kg/ha
- Transplanting: 4-5 kg/ha

Nursery: May last week

Transplanting: 3rd week of June

- Broadcasting: 12 kg/ha
- Sowing should be done at a spacing of 20-25 cm and at 3-4 cm depth
- Thinning should be done one month after sowing and maintain plant to plant spacing of 10 cm.

Fertilizer Management

- Fertilizer should be used based on soil testing result.
- If there is no soil testing result then use
  Nitrogen 60 kg, Phosphorus 40 kg, Potash 20 kg/ha
- Half dose of nitrogen, full dose of phosphorus and potash should be used as basal dose.
- Rest half dose of nitrogen should be top dressed three weeks after sowing, i.e. after first weeding
- Broadcast well decomposed FYM @ 8-10 tone/ha during land preparation.
- FYM should be treated with bio-pesticide *Trichoderma* and *Pseudomonas* @ 100g/q FYM.

Weed Management

- First weeding- 15-20 DAS

- Second weeding- 30-35 DAS
- Herbicide Isoproturon @ 0.75kg/h should be used immediately after sowing. If some weeds remain in the field they may be uprooted manually.

Diseases

Blast Disease

The fungus infects in different stages of crop leading to leaf blast, neck blast and finger blast.

Symptom

The symptoms appear as circular lesions that are pointed towards either ends. The center of the spots appears grayish and the borders become brownish.

When the fungus infects the neck region, a few inches of neck just below the finger turns brownish black ultimately leading to breakage of the peduncle.

Maximum damage is caused by neck blast as it prevents grain formation or shriveling of grains.

मंडुवा के विभिन्न रोगः (1) पर्णीय झोंका (2) ग्रीवा झोंका (3) अंगुलिकाओं का झोंका (4) हरित बाल (5 एवं 6) सर्कोस्पोरा पर्ण चित्ती।

Control Measures

- As the disease is seed-borne, Seed treatment with fungicide Thiram or Bavistin @2.50 g/ kg seed should be done before sowing.
- Use of bio-control agents such as *Trichoderma, Pseudomonas* @10g/kg seed.
- As field spray as well as in seed treatment has been found effective.
- High plant density encourages blast disease development and hence needs to be avoided. Follow the spacing (25 x 10 cm) for appropriate plant population.
- Avoid the excessive use of nitrogenous fertilizers, as a positive correlation has been found between higher nitrogenous fertilizer dose and blast incidence.
- Intercropping and crop rotation of Mandua with pulses is not only economical but also helps in soil nutrient enrichment and in reducing the fungal inoculum.

Production Technology of Barnyard Millet

High Yielding Varieties

Name of Variety	Year of Release	Productivity (qt./ha)	Recommended Area
VL Madira 8	1982	-	Hilly areas of Uttarakhand

VL Madira 29	1988	-	Throughout the country except Tamilnadu and Andhra Pradesh
VL Madira 21	1990	-	Entire Uttarakhand, Jharkhand, Madhya Pradesh and North East states.
VL Madira 172	2000	20-23	Uttarakhand, Gujrat and Karnataka
VL Madira 181	2001	-	Bihar, Karnataka, Madhya Pradesh and Tamilnadu
PRJ-1	2003	20-25	Hilly areas of Uttarakhand
VL Madira 207	2008	16-19	Throughout the country except Tamilnadu and Gujrat

Sowing Time

- High Hills (more than 1500 meter)- Second fort night of April
- Mid Hills (1000-1500 meter)- First week of May
- Lower Hills (less than 1000 meter)- Mid May-June first week

Seed Rate and Method of Sowing

- Direct seeded- 8-10 kg/ha
- Broadcasting- 12 kg/ha
- Sowing should be done at a spacing of 25 cm and at 3-4 cm depth
- Thinning should be done one month after sowing and maintain plant to plant spacing 10 cm.

Fertilizer Management

- Fertilizer should be used based on soil testing result.
- If there is no soil testing result then use

  Nitrogen 60 kg, Phosphorus 40 kg, Potash 20 kg/ha
- Half dose of nitrogen, full dose of phosphorus and potash should be used as basal dose.
- Rest half dose of nitrogen should be top dressed three weeks after sowing i.e. after first weeding.
- Broadcast well decomposed FYM @ 8-10 tone/ha during land preparation.
- FYM should be treated with bio-pesticide *Trichoderma* and *Pseudomonas* @ 100g/q FYM.

Weed Management

- First weeding- 15-20 DAS
- Second weeding- 30-35 DAS
- Herbicide isoproturom @ 0.75kg/h should be used immediately after sowing. If some weeds remain in the field they may be uprooted manually.

Production Technology of Foxtail Millet

- In Uttarakhand the crop is known as Kauni/ Kangni.
- The area of this crop is Uttarakhand, Andhra Pradesh, Karnataka, Maharastra, Bihar, Jharkhand, Orissa, Rajasthan etc.
- The crop is grown for grain and fodder.
- In Uttarakhand it is grown as sole crop and mixed cropping with soybean, horse garm, rice bean, rajmash, buckwheat etc.
- However now a days the crop is grown mainly on the boundaries of the field.

High Yield Varieties

Pant S 4, Pant Ranichauri Kauni 1

Sowing time

- High Hills – First fortnight of April
- Mid Hills – First fortnight of May
- Lower Hills – First fortnight of June

Seed Rate

- Line sowing: 8-10 kg/ha
- Broadcasting: 12kg/ha
- Spacing: Line to line – 22 cm
- Plant to plant – 10 cm

Seed Treatment

- Bio agent *Trichodarma*– 10g/kg seed followed by
- Bio fertilizer– 10g/kg seed

Fertilizer Management

- Nitrogen- 20kg and Phosphorus- 20kg/ha
- Broadcast well decomposed FYM @ 8-10 tone during land preparation.

- FYM may be treated with bio-pesticide *Trichodarma* and *Pseudomonas* @ 100g/q FYM.

Weed Management

Follow like finger millet

Yield

18-20 q/ha

Production Technology of Proso Millet

Sowing Time

a. Hilly Area

- Mid Hills – (1000-1500 Meter)- June first week
- Lower Hills – (Less than 1000 Meter)
- Mid May – June first week

b. Plain

First fortnight of July

Seed Rate and Method of Sowing

- Direct seeded- 8-10 kg/ha
- Broadcasting- 10-12 kg/ha
- Sowing should be done at a spacing of 25 cm and 3-4 cm depth
- Thinning should be done one month after sowing and maintain plant to plant spacing 10 cm.

Fertilizer Management

- Fertilizer should be used based on soil testing result.
- If there is no soil testing result then use

  Nitrogen 60 kg, Phosphorus 40 kg, Potash 20 kg/ha
- Half dose of nitrogen, full dose of phosphorus and potash should be used as basal dose.
- Rest half dose of nitrogen should be top dressed three weeks after sowing i.e. after first weeding.
- Broadcast well decomposed FYM @ 8-10 tone/ha during land preparation.

- FYM should be treated with bio-pesticide *Trichoderma* and *Pseudomonas* @ 100g/q FYM.

Weed Management

- First weeding : 15-20 DAS
- Second weeding : 30-35 DAS

Yield

- Grain : 20-25q/ha
- Straw : 50-60q/ha

Value added products of Millets

- Finger millet is used as Mandua floor, Biscuit, Papad, Namkeen, Pakaura, Halwa etc.
- During winter several dishes like, Chapatti of Mandua, Lesu Roti, Fana, Halwa etc. are prepared and used in meal by hilly area people.
- Barnyard millet is used as Rice, Kheer and Jaula.
- Finger millet is used in the preparation of Malt.

Chapter-4

Promotion Strategies for Agri-Business

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Agribusiness System

The agribusiness system in India is poised for a period of rapid change. The growth in the use of computers and biotechnology, fluctuating interest rates, new environmental regulations, and so on, have combined to alter many of the ways our agricultural system operates. The future will belong to those business managers who can adapt their firms to meet these new challenges of this market place. Agri-Business marketing encompasses many different aspects depending mostly on the size and needs of the business. Small retail localized agribusinesses have limited marketing needs compared to large commercial farms which serve different areas groups of people. Whichever the case, it is very important for any business to promote / put their products and services in front of the right people such that they can generate sales and grow. Agriculture had been developed and developing countries a major industry across the globe. This meant that most farmers had small quantities of crops to sell. As a result, they had to be nearly self sufficient, since there was little money to buy things they needed.

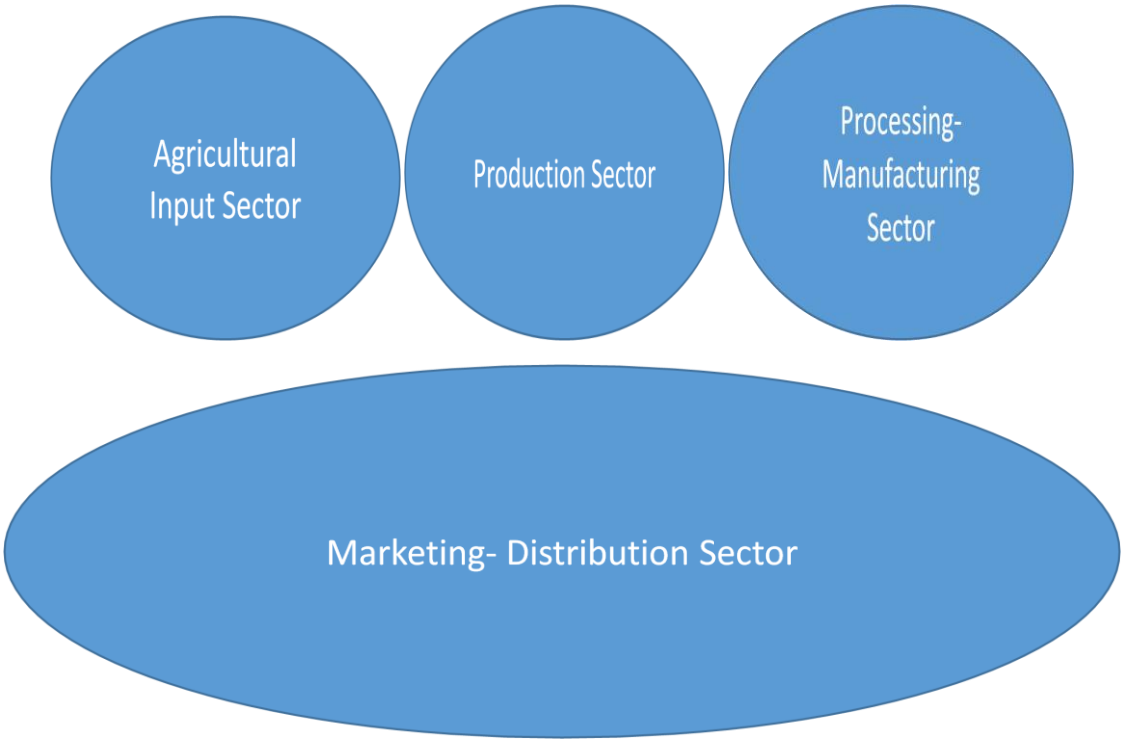
- Agricultural products are very perishable so they can go bad if not sold as soon as possible which can result in catastrophic losses for the farm business.
- For traditional farmers who don't use modern urban farming techniques like indoor vertical farming and smart agriculture perish ability can be very disastrous because their costs of production are very high.
- Factors like cost of tilling, weeding, and harvesting, planting, labour all increase the price of production and lower the profits from the produce as compared to indoor urban farming.

- Modern agriculture is the result of a variety of economic and technological forces. An abundance of productive and inexpensive land has also played a key role in the agricultural success of our country.

- Advances in agriculture are at the heart of the economic prosperity in the country. Growth in agriculture triggers the economic growth in the country. It is estimated that one percent increase in agriculture growth results in three – four times increase in overall growth in gross domestic product in India. A large number of industries draw raw material from agriculture.

  Growth in population, problems created in farm labour, squeeze on land holding, and generation of new farm technologies and inputs prompted farmers to increasingly indulge in buying labour saving and yield increasing farm inputs from market. Even some members of farm families started withdrawing from farm and moving to non-farm jobs. The marketed and marketable surplus on farm started growing, turning agriculture from subsistence to commercial. Business started building up in and around agriculture. This resulted in the real birth and growth of agribusiness.

  Agribusiness is a combination of the words "agriculture" and "business" and refers to any business related to farming and farming-related commercial activities. Agribusiness is the business sector encompassing farming and farming-related commercial activities. It involves all the steps required to send an agricultural good to market, namely production, processing, and distribution. This industry is an important component of the economy in countries with arable land since agricultural products can be exported. Climate change has placed intensifying pressure on many companies in the agribusiness industry to successfully adapt to the large-scale shifts in weather patterns. The agribusiness strategy includes “all the firms involved in manufacturing and supplying inputs or services to production agriculture or that handles or process farm outputs until they reach the final consumer”, they consist of following four sub sectors:



These are some Agribusiness enterprises

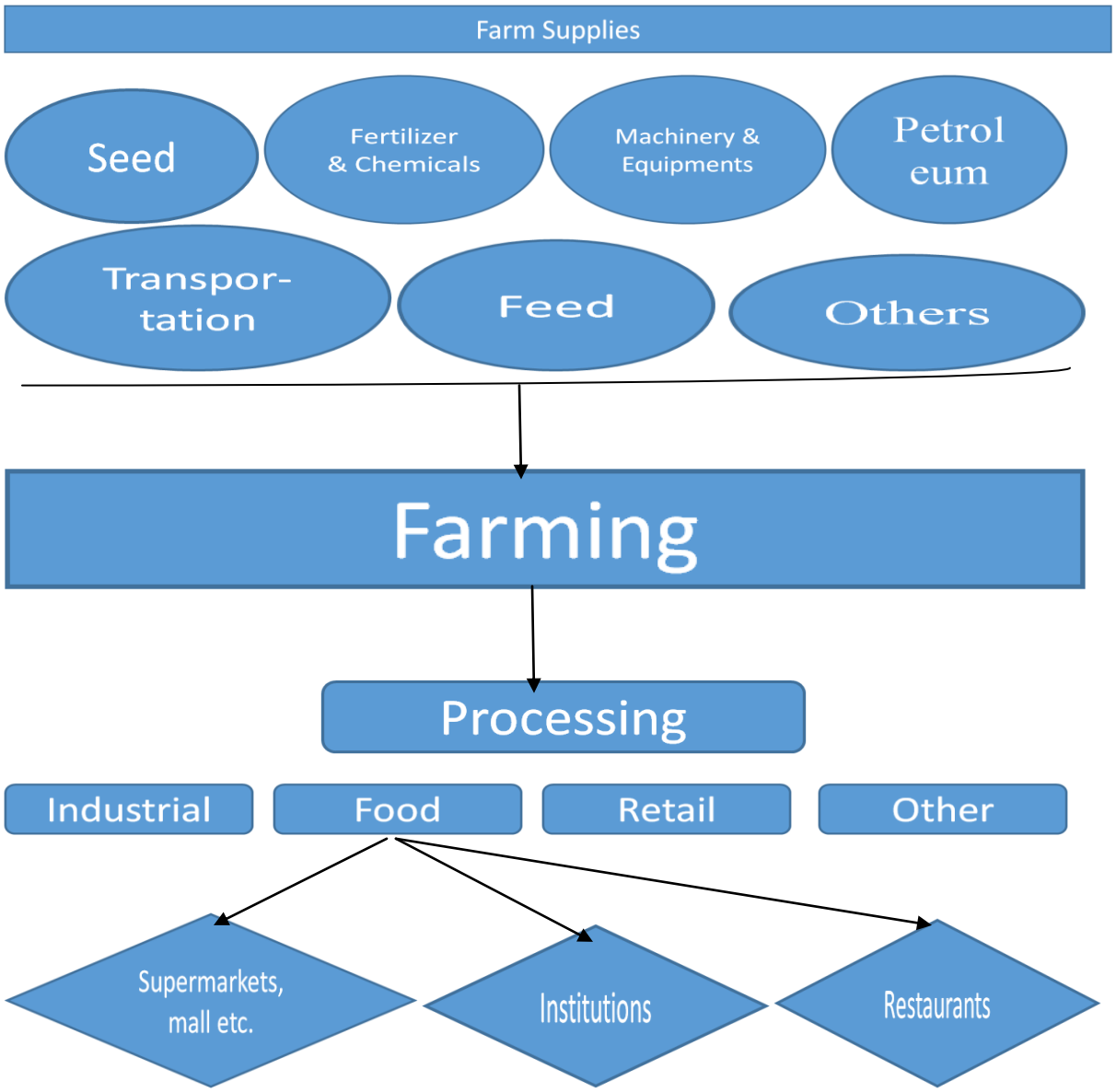
Business of Agribusiness:

The human require food and fiber in daily activity. Walking through the local supermarket; one might consider the number and type of activities involved in producing food and putting it on the shelf, or the process by which raw products turn into a hamburger sandwich at a favourite fast food restaurant. There has been efficient work by many people in the input-farm-food-production marketing system. This system begins with many varied activities from the farm supply sector which provides a myriad of production inputs and services to the farm, and then continues through the marketing, processing, and distribution activities necessary to satisfy consumer wants. As the agricultural production process becomes increasingly complex and specialized, the farm supply sector takes on important new dimensions. Also as consumer's incomes rise, more services are demanded with respect to food products purchased. As these trends continue, the agribusiness sector becomes increasingly important because it is faced with the responsibility of providing not only the right type and amount of purchased inputs to the farm sector but the correct mix of services to products as they move through the food system to the final consumer. The agribusiness sector in today's economic environment combines:

- Diverse commercial enterprises
- Heterogeneous combination of labour, materials, capital and technology.

The food and fiber system is an extremely large complicated system that is constantly changing to meet current consumer demands and provide food and fiber for both domestic and world market. Agribusiness includes the total input-farm-product sectors that supply farm inputs, are involved in production and finally handle the processing, distribution, wholesaling and retailing to the final consumer. So we can say agribusiness is a list of thousands of occupations and industries that require or utilize agribusiness competencies.

Breakdown of the input, Farm and Product Market Sectors



The different types of skills and knowledge utilized by those employed in agribusiness:

- Agricultural production and propagation of animals, animal products, plants, floriculture, medicine and aromatic plants, forests and forest products.
- The design, installation, operation, repair, servicing of machinery equipments and construction of structures used in agricultural production.
- Any activity related to inspecting, processing and marketing of agricultural products.

- Any aspect of greenhouse, Hi-tech nursery, land scaping and other ornamental horticulture and floriculture operations.
- The conservation, propagation, improvement and utilization of renewable natural resources.
- The multiple uses of forestlands and resources.
- Agribusiness is a broad industry; it incorporates a wide range of different companies and operations. Agribusinesses include small family farms and food producers up to multinational conglomerates involved in the production of food on a national scale.
- Agribusinesses include farm machinery producers such as Deere & Company, seed and agrichemical manufacturers such as Monsanto, food processing companies such as Archer Daniels Midland Company, as well as farmer's cooperatives, agro-tourism companies, and makers of bio fuels, animal feeds, and other related products.

TOP 10 PROFITABLE AGRICULTURE BUSINESS IDEAS IN INDIA

India is considered as Agricultural Country since ancient times because most of the population in India has adopted agriculture as their primary business or family business. Most of the products are export to other countries from India. Due to Covid-19, when all business were announced to close or pause for a short time, at that time, farmers and landlords were still working in their farms so it has become emerged one of the most reliable sectors in business industries. This sector has been expanded a lot and still expanding because of having many of the money making Agriculture Business Ideas. There are hundreds of industries which have been linked with agriculture.

1. **Agricultural Land**:
2. **Grocery Shopping Portal**:
3. **Tree Farm**:
4. **Dry Flower Business**:
5. **Beekeeping**:
6. **Fruit and Vegetables Export**
7. **Dairy Business**:
8. **Broom Production**
9. **Groundnut Processing**:
10. **Medicinal Herbs Farming**:


Best Online Shopping
Sites For Grocery

Chapter-5

Entrepreneurship Models in Agriculture

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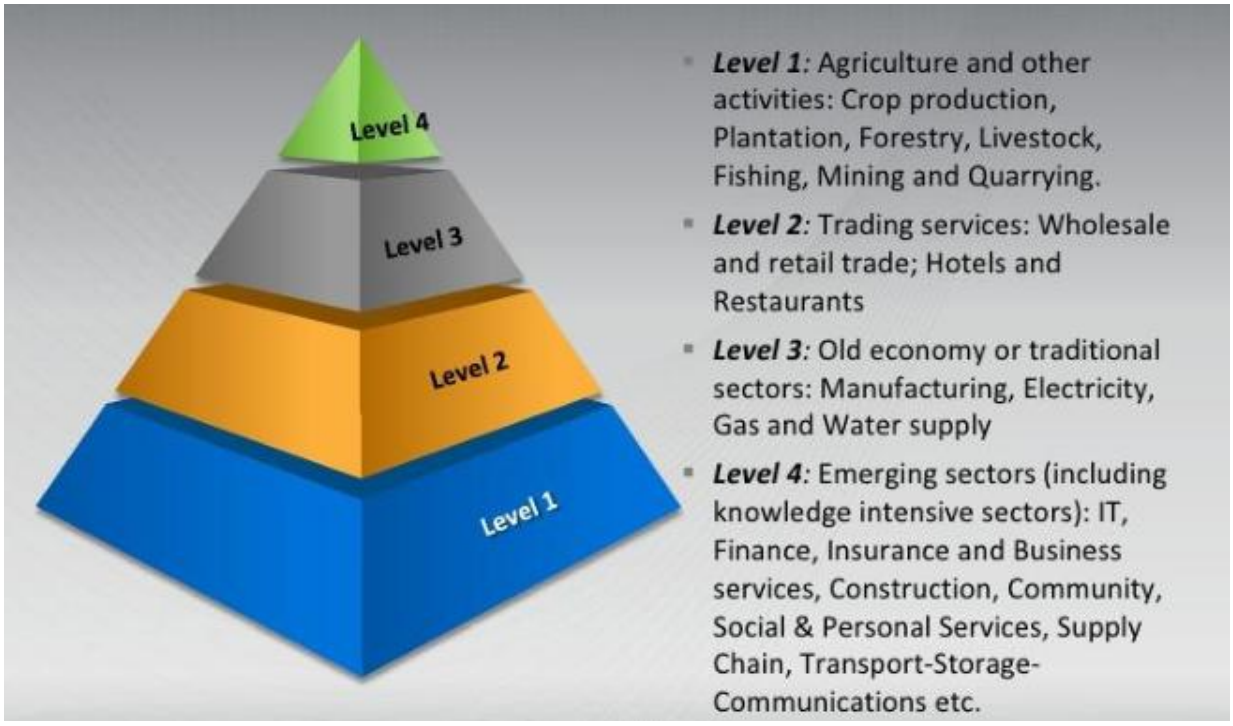
Introduction

Agriculture and agribusiness is the engine of growth in India. The performance of Indian economy depends a lot on the performance of agriculture and its allied sector. If we include the contributions from various agribusinesses, the percentage contribution of agriculture and its allied sector including various agribusinesses would be even much higher. In export earnings the contribution of agriculture and agribusiness products is outstanding. A shift from agriculture to agribusiness is an essential pathway to bring change or make revolution in Indian agriculture and to make more attractive and profitable venture. An agripreneur may be defined as someone who undertakes a variety of activities in agriculture and its allied sectors. Agripreneurship has the potential to contribute to a range of social and economic development such as employment generation, poverty reduction and improvements in nutrition, health and overall food security in the national economy.

Traditionally, agriculture was seen as a low-tech industry with limited dynamics dominated by numerous small family firms, which are mostly paying attention on doing things better rather than doing novel things. Over the last decade, this situation has changed dramatically due to economic liberalization, a reduced shelter of agricultural markets, and a fast changing, more decisive, society. These alterations have cleared the way for new participator, innovation, and portfolio entrepreneurship. Rural entrepreneurs are a key figure in economic progress of a developing country like India. Rural entrepreneurship is the way of converting developing country into a developed nation. Therefore, there should be more stress on integrated rural development programs. The Indian economy is basically an agrarian economy; it can serve as a platform for agricultural entrepreneurship, food processing and other allied activities.

Entrepreneurship Pyramid in India



1. Models of Entrepreneurship

1. **Large business entrepreneurship**

These are the massive businesses that thrive on sustaining innovative products and services. Over a while, they have built an expansive organization. They are constantly engaging in research & development to keep advancing their technology to meet the ever-evolving needs of their customers. A classic example of large business entrepreneurship would be Apple or Samsung.

2. **Small business entrepreneurship**

More often than not, these start with a single person, a pretty basic idea, and a lot of passion and determination. Research says, 75% of the businesses are part of the small entrepreneurship model, and their capital is raised via friends and family. They usually hire local manpower as

well as family members and thrive on high profit. Examples of this kind of business are the local coffee shop, Hair Salon, Grocery stores, Consultants, etc.

3. **Social entrepreneurship**

It is for people who genuinely think that they can bring about a change in the world with their innovations and actually have the potential to do so. The entire focus in this model is more on a social cause rather than just profits. Non-profit organizations are also a part of this business model. Examples of this business model are microfinance institutions, co-operatives, educational programs, and welfare services.

4. **Scalable startup entrepreneurship**

These kinds of business models get funding from venture capitalists for further growth after tasting success at level one of setting up their enterprise. Entrepreneurs who pick this model are confident of their vision and believe that it can change the world! One of the most famous examples of a scalable startup is Face book.

5. **Innovation Entrepreneurship**

This business model is based on finding gaps in the market. These entrepreneurs use innovative thinking and technology to develop products and services that can make life easier for the people and something no one else has clocked on yet! This is ideal for people who are constantly thinking outside the box. I-phones and Tesla are real-world examples of innovation entrepreneurship done right.

2. Models of corporate entrepreneurship

Opportunist, enabler, advocate and producer are the four models of corporate entrepreneurship that Robert C. Wolcott and Michael J. Lippitz discuss in 'Grow from within.

a) The Opportunist

However, the opportunist model works well only in trusting corporate cultures that are open to experimentation and that have diverse social networks behind the official hierarchy. "There need to be multiple executives who can say yes to a new business concept. Without that type of environment, good ideas can easily fall through organization cracks or receive insufficient funding to prove feasible", say Wolcott and Lippitz.

b) The Enabler

In contrast to the opportunist model of diffused ownership and ad hoc resource allocation, the enabler model has dedicated resources. "Early stages of new business conception are explicitly supported, encouraged, and often strategically channeled, with a promise of serious management attention to those concepts that look promising." But the enabler model is not only about allocating capital for corporate entrepreneurship. It is also about personal development and executive engagement.

c) The Advocate

In the third model, the advocate (with focused ownership and ad hoc resource allocation), a company assigns organizational ownership for driving the creation of new businesses to a designated corporate-level group, but it intentionally provides the group with only a modest budget. Advocate organizations act as evangelists and innovation experts, facilitating corporate entrepreneurship in conjunction with business units, which must demonstrate their commitment to new business development by paying most of the bills, as the authors note.

d) The Producer

The fourth model, the producer, with focused ownership and dedicated resources, aims to protect emerging projects from turf battles, to encourage cross-unit collaboration, to build potentially disruptive businesses, and to create pathways for executives to pursue careers outside their business units, Wolcott and Lippitz explain.

Models Related To Psycho-Social Environment

a. The Psychological Model

This is also known as the trait-behavioral model. It believes that entrepreneurs are born; they are born with certain inborn characteristics, attributes, attitudes. Once an entrepreneur, always an entrepreneur- since an entrepreneur is a personality, a state of being that doesn't go away.

These are few desired Entrepreneurial Characteristics of an entrepreneur:

- Creative independent
- Risk-taking resilient
- Innovative bold, confident
- Determined visionary

- Courageous flexible
- Persistent love for ambiguities

b. The Psychodynamic Model

The entrepreneurs come from a group of people whose childhood socialization process was characterized by deprivation (economically, politically, socially etc.). As a result of this depravity, they turn to acquire the characteristics of the person born. Such person work hard to overcome the situation in which he is born and this sense of strong willpower to make it by all means gives him a sense of achievement, determination etc. just like the person already born with entrepreneurial traits.

Although, the importance of early socio psychological experiences in shaping personality, motivation, knowledge and business ability cannot be denied, It is necessary to recognize that what happens to the entrepreneur once he has started in business is crucial in shaping his future or later behaviour.

Chapter-6

Capital Budgeting Technique/Investment Appraisal/ Business Feasibility Analysis

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Evaluation Approaches: Either to accept or reject a project, ranking of capital expenditure project on the basis of some predetermined discounted measures.

Project Evaluation Techniques: A project under consideration can be either accepted or rejected once project cost and benefits are identified, priced and valued.

It is divided into following two groups:

1. Undiscounted measures:

a) Pay Back Period (PBP)
b) Accounting Rate of Return (ARR)
c) Ranking by inspection

2. Discounted Measures:

a) Net Present value or worth (NPW or NPV)
b) Benefit cost ratio (B/C ratio).
c) Internal Rate of return (IRR)
d) Profitability Index

Undiscounted measures

Payback Period (PBP)

It is the number of years required to recover the original cash outlay invested in a project i.e. the present value of total cash inflows from an investment equals the total cash outflows. According to the criterion, the project that has shortest payback period is preferred.

Simple rate of return (SRR)

SRR is a commonly used criterion of project evaluation. It basically expresses the average net profits (Net Cash Flows) generated each year by an investment as a percentage of investment over the investments expected life. The investment will be accepted if SRR > RRR, otherwise it will be rejected.

3. Ranking by inspection

It is based upon size of costs and length of the cash flow stream. Suppose if the two projects are with same investment and same net value of production, but with difference in length of period, then the project with longer duration is preferred to the one with shorter time period. This leads to the bias in the choice obviously due to the absence of more elaborate and appropriate analysis.

Discounted Measures

1. **Net Present worth (NPW)**

The NPV is the difference between the present value of future cash inflows and the present value of the initial outlay or cash outflows, discounted at the firm's cost of capital. It represents the present worth of incremental net benefit.

NPW = Present worth of benefit stream – Present worth of cost stream. The NPW of the project can be estimated using formula as given below:

$$NPW = \sum_{t=1}^{n} \frac{Bt}{(1+r)t} - \sum_{t=1}^{n} \frac{Ct}{(1+r)t}$$

Or,

Where,

B_t =Benefits in t^{th} year.

Ct = Costs in t^{th} year.

n = life span of the project

i = interest or discount rate.

Decision Rule: If the NPW of a project is positive, then it is considered that the project is economically feasible.

2. Benefit-Cost Ratio (BCR): The BCR can be calculated using the following formula:

$$BCR = \frac{\sum_{t=1}^{n} \frac{Bt}{(1+r)t}}{\sum_{t=1}^{n} \frac{Ct}{(1+r)t}}$$

If the BCR is greater than 1, then it is worth wile to invest on the project.

3. **Internal rate of return**

It shows marginal efficiency of capital or return generating capacity of investment. IRR is that rate of discount which makes the present worth of benefits and costs equal or the net present worth of cash flow equal to zero. If IRR is greater than the opportunity cost of capital, the project is feasible.

Such rate of interest can be calculated by trial and error method by using discount rates:

Steps in computing IRR

- Find out R_1 (lower discount rate) at which NPW is just positive.
- Locate R_2 (higher discount rate) at which NPW is just negative
- Calculate IRR as follows:

$$IRR = \begin{bmatrix} \text{Lower} \\ \text{Discount} \\ \text{Rate} \end{bmatrix} + \begin{bmatrix} \text{Difference between} \\ \text{two discount rates} \end{bmatrix} \frac{\begin{matrix} \text{NPW of} \\ \text{cash flow} \\ \text{at lower} \\ \text{discount rates} \end{matrix}}{\begin{matrix} \text{Absolute difference} \\ \text{between NPW of} \\ \text{cash flow at two} \\ \text{discount rates} \end{matrix}}$$

Decision Rule= a) If IRR > Required rate of return; then accept the investment

b) If IRR< required rate of return; then reject the investment

c) If IRR = Required rate of return; then be indifferent.

4) Profitability Index (PI): PI approach measures the present value of returns per rupee invested. It is defined as ratio of NPV of cash inflows to initial capital investment. It is observed in shortcoming of NPV that, being an absolute measure, it is not a reliable. PI method provides solution to this kind of problem. This method is also known as B/C ratio because numerator measures benefits and denominator cost.

$$Profitability\ Index = \frac{Present\ value\ of\ cash\ inflow}{Initial\ Investment}$$

Decision Rule:

- Accept the project when PI > 1
- Reject the project when PI < 1
- May or may not accept when PI = 1, the firm is indifferent to the project.

  Higher is the PI, more attractive the investment.

Chapter-7

Banking system and agriculture Overview and financial inclusion

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Introduction

Agriculture is the art and science of cultivating the soil, growing crops and raising livestock. It includes the preparation of plant and animal products for people to use and their distribution to markets. Agriculture provides most of the world's food and fabrics. Cotton, wool, and leather are all agricultural products. Agriculture also provides wood for construction and paper products. These products, as well as the agricultural methods used, may vary from one part of the world to another. Many farmers used an open-field system of planting. One field would be planted in spring, another in autumn, and one would be left unplanted, or fallow. This system preserved nutrients in the soil, increasing crop production. Agricultural production includes these activities when they result in a product that will be sold at retail. Depending upon the geographical conditions, demand of produce, labour and level of technology, farming can be classified into two main types. These are subsistence farming and commercial farming. The main factors of production are natural resources (land, water, soil, and rainfall), labour and capital. These are different products produced by farmers, each of which uses inputs to produce outputs.

Factors of production:

- Most crucial factor
- Owned and borrowed

Recent trends in Agricultural finance:

Finance in agriculture is as important as development of technologies. Technical inputs can be purchased and used by farmer only if he has funds. But his own money is always inadequate and he needs outside finance. Professional money lenders were the only source of credit to agriculture till 1935. They used to charge exorbitantly high rates of interest and follow unethical practices while giving loans and recovering them. As a result, farmers were heavily burdened with debts and many of them are living in perpetuated debts. There was widespread discontentment among farmers against these practices and there were instances of riots also.

Agricultural finance generally means studying, examining and analyzing the financial aspects pertaining to farm business, which is the core sector of India. The financial aspects include money matters relating to production of agricultural products and their disposal. It is playing a catalytic role in strengthening the farm business and augmenting the productivity of scarce resources. When newly developed potential seeds are combined with purchased inputs like fertilizers & plant protection chemicals in appropriate / requisite proportions will result in higher productivity. Indian agriculture is still traditional and subsistence in nature, agricultural finance is needed to create the supporting infrastructure for adoption of new technology.

Credit / loan are certain amount of money provided for certain purpose on certain conditions with some interest, which can be repaid sooner (or) later.

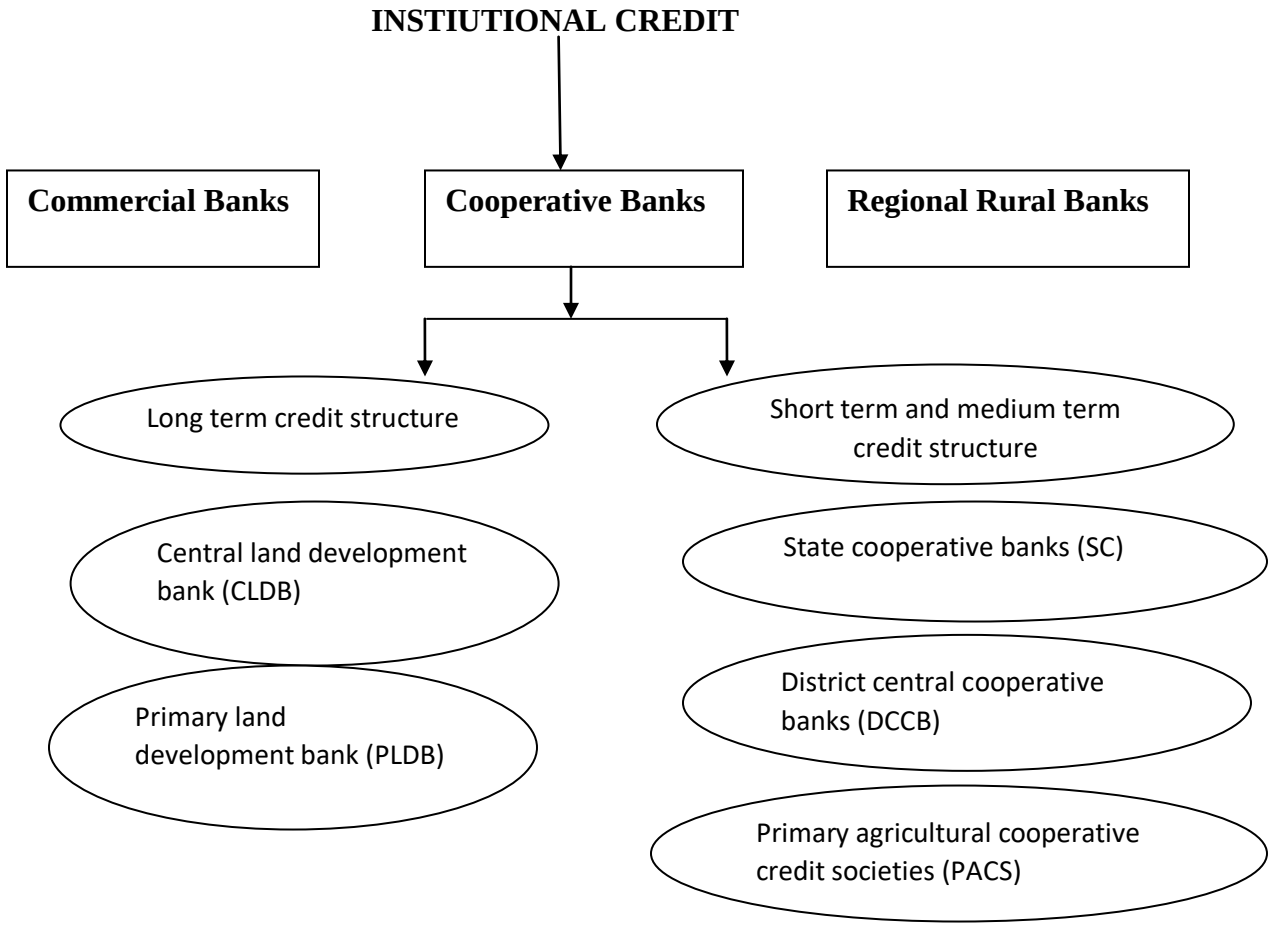
Credit needs in Agriculture:

Agricultural credit is one of the most crucial inputs in all agricultural development programmes. For a long time, the major source of agricultural credit was private moneylenders. But this source of credit was inadequate, highly expensive and exploitative. To curtail this, a multi-agency approach consisting of cooperatives, commercial banks and regional rural banks credit has been adopted to provide cheaper, timely and adequate credit to farmers.

Sources of credit:

Institutional credit: Here are loans are advanced by the institutional agencies like co-operatives, commercial banks. Ex: Co-operative loans and commercial bank loans.

Non-institutional credit: Here the individual persons will lend the loans Ex: Loans given by professional and agricultural money lenders, traders, commission agents, relatives, friends, etc.



Classification of Credit:

1. Based on time: This classification is based on the repayment period of the loan. It is sub-divided in to 3 types

Short–term loans: These loans are to be repaid within a period of 6 to 18 months. All crop loans are said to be short–term loans, but the length of the repayment period varies according to the duration of crop.

Medium – term loans: Here the repayment period varies from 18 months to 5 years. These loans are required by the farmers for bringing about some improvements on his farm by way of purchasing implements, electric motors, milch cattle, sheep and goat, etc.

Long – term loans: These loans fall due for repayment over a long time ranging from 5 years to more than 20 years or even more. These loans together with medium terms loans are called investment loans or term loans. These loans are meant for permanent improvements, levelling and reclamation of land, construction of farm buildings, purchase of tractors etc.

2. Based on Purpose: *Based* on purpose, credit is sub-divided in to 4 types.

Production loans: These loans refer to the credit given to the farmers for crop production and are intended to increase the production of crops. They are also called as seasonal agricultural operations (SAO) loans or short – term loans or crop loans. These loans are repayable with in a period ranging from 6 to 18 months in lump sum.

Investment loans: These loans are given for purchase of equipment the productivity of which is distributed over more than one year.

Marketing loans: These loans are meant to help the farmers in overcoming the distress sales and to market the produce in a better way. These loans help the farmers to clear off their debts and dispose the produce at remunerative prices.

Consumption loans: These loans seem to be unproductive but indirectly assist in more productive use of the crop loans i.e. without diverting then to other purposes. Consumption loans are not very widely advanced and restricted to the areas which are hit by natural calamities. The loan is to be repaid within 5 crop seasons or 2.5 years whichever is less.

3. Based on security: The loan transactions between lender and borrower are governed by confidence and this assumption is confined to private lending to some extent Therefore it is essential to classify the loans under this category into two sub-categories viz., secured and unsecured loans.

Secured loans: Loans advanced against some security by the borrower are termed as secured loans. Various forms of securities are offered in obtaining the loans and they are of following types. Personal security, Collateral Security, Chattel loans, Mortgage (Simple mortgage and equitable mortgage and Hypothecated loans (Key loans and Open loans).

Unsecured loans: Just based on the confidence between the borrower and lender, the loan transactions take place. No security is kept against the loan amount.

4. Lender's classification: Credit is also classified on the basis of lender such as:

Institutional credit: Here are loans are advanced by the institutional agencies like co-operatives, commercial banks. Ex: Co-operative loans and commercial bank loans.

Non-institutional credit: Individual persons will lend the loans these loans given by agricultural money lenders, traders, commission agents, relatives, friends, etc.

5. Based on liquidity: The credit can be classified into two types based on liquidity

Self-liquidating loans: They generate income immediately and are to be paid within one year or after the completion of one crop season. Ex: crop loans.

Partially- liquidating: This type of loans takes some time to generate income and can be repaid in 2-5 years or more.

Nationalization of Banks

At the time of independence, the private sector banks were predominantly urban–oriented and under the control of a few industrialists which had not helped in achieving the basic socio–economic objectives. The credit needs of agriculture, small– scale industries and also weaker sections such as small traders and artisans continued to be ignored. Even though for nearly three fourths of population, agriculture is the main occupation and contributed 50 per cent of gross domestic product, the total bank credit advanced to this sector was only one per cent as on June, 1967. The bulk of the deposits contributed by the public were being advanced to the industrial and trade sectors ignoring the prime sector of agriculture. In agriculture, the credit scene was dominated by the private money lenders who were charging exorbitant rates of interest. The main aim of social control was achieving of wider spread of bank credit to the priority sectors thereby reducing the authority of managing directors in advancing the loans. Social control created the tempo of banks expansion, as evident by the addition of 785 new branches by the end of first half of 1969. But this did not make dent in increased channelization of credit to agricultural sector and to weaker sections .The directions issued by the Government were also

ignored by any of the banks. Under these circumstances the Government thought that the social control of banks was not sufficient for socio – economic development and nationalization of banks was considered as an alternative solution. The Government of India on 19th July 1969 promulgated an ordinance called "The Banking companies Ordinance 1969" (Acquisition and Transfer of Undertakings). Under these act 14 commercial banks having deposits of more than Rs. 50 crore each were nationalized and they were:

1. Central Bank of India
2. Bank of India
3. Punjab National Bank
4. Bank of Baroda
5. United commercial Bank
6. Canara Bank
7. United Bank of India
8. Dena Bank
9. Union Bank of India
10. Allahabad Bank
11. Syndicate Bank
12. Indian Bank
13. Bank of Maharashtra
14. Indian overseas Bank

The average population served per bank branch declined markedly from 65,000 in June, 1969 to 32,000 by June, 1975. Encouraged by the success of first spell of nationalization of banks, six more banks in the private sector, having deposits more than Rs.200 crore were nationalized on 15th April 1980.

The six banks nationalized in the second spell were

1. Punjab and Sind bank
2. Andhra Bank
3. New Bank of India
4. Vijaya Bank
5. Oriental Bank of Commerce
6. Corporation Bank.

Higher financing institutions:

WORLD BANK (IBRD): The World Bank (www.worldbank.org) is among the world's leading development institutions with a mission to fight poverty and improve living standards for people in the developing world by promoting sustainable development through loans, guarantees, risk management products, and (non-lending) analytic and advisory services. The World Bank is one of the United Nations' specialized agencies. The member countries are jointly responsible for how the institution is financed and how its money is spent. The World Bank concentrates its efforts on reaching the Millennium Development Goals aimed at sustainable poverty reduction. The World Bank Group consists of:

1. The International Bank of Reconstruction and Development (IBRD): IBRD was established in 1945 and has 188 members at present. IBRD aims to reduce poverty in middle-income countries and creditworthy poorer countries by promoting sustainable development, through loans, guarantees, and non-lending services.

2. The International Development Association (IDA): IDA was established in 1960 and currently has 172 members. IDA is the concessional arm of the World Bank and plays a key role in supporting the Bank's poverty reduction mission. IDA assistance is focused on the world's 79 poorest countries, to which it provides interest-free loans (known as 'credits') and other non-lending services.

3. International Finance Corporation (IFC): Established in 1956, IFC is owned by 184 member countries, a group that collectively determines the policies. It works in more than 100 developing countries allowing companies and financial institutions in emerging markets to create jobs, generate tax revenues, improve corporate governance and environmental performance, and contribute to their local communities.

4. Multilateral Investment Guarantee Agency (MIGA): On April 12, 1988 an international convention established MIGA as the newest member of the World Bank Group. The agency opened for business as a legally separate and financially independent. The mission is to promote foreign direct investment (FDI) into developing countries to help support economic growth, reduce poverty, and improve people's lives.

5. International Centre for Settlement of Investment Disputes (ICSID): ICSID is an autonomous international institution established under the Convention on the Settlement of Investment Disputes between States and Nationals of Other States (the ICSID or the Washington

Convention) with over one hundred and forty member States. The Convention sets forth ICSID's mandate, organization and core functions. The primary purpose of ICSID is to provide facilities for conciliation and arbitration of international investment disputes.

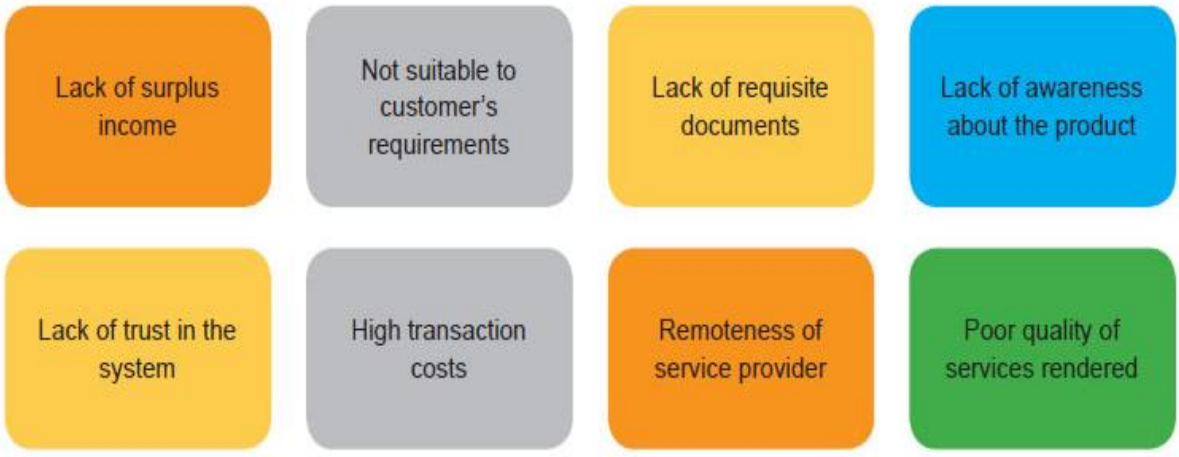
Asian Development Bank (ADB):

The Asian Development Bank (ADB) is a regional development bank established on 19 December 1966, which is headquartered in the Ortigas Centre located in the city of Mandaluyong, Metro Manila, Philippines, The Company also maintains 31 field offices around the world to promote social and economic development in Asia. ADB now has 68 members. The ADB was modelled closely on the World Bank, and has a similar weighted voting system where votes are distributed in proportion with members' capital subscriptions. Upon completion of their study programs, scholars are expected to contribute to the economic and social development of their home countries.

Financial Exclusion:

Financial exclusion is when people are unable to access financial services such as current accounts, savings accounts and other beneficial financial services as they are deemed to be too high risk. There are many negative effects of this exclusion, and it generally means that people become unable to remove themselves from poverty.

Causes of Financial Exclusion:



KCC as an initiative…….

- Introduced by Government of India on August, 1998 with the aim to provide credit to farmers on the basis of their land holdings.
- Provides timely credit
- Implemented by commercial banks, cooperative banks and RRBs.
- Under interest subvention scheme n interest subvention @2% for short term crop loan and prompt repayment incentive of 3%. Thus the effective rate of interest is of 4%.

Chapter-8

Business Environment and its legal component

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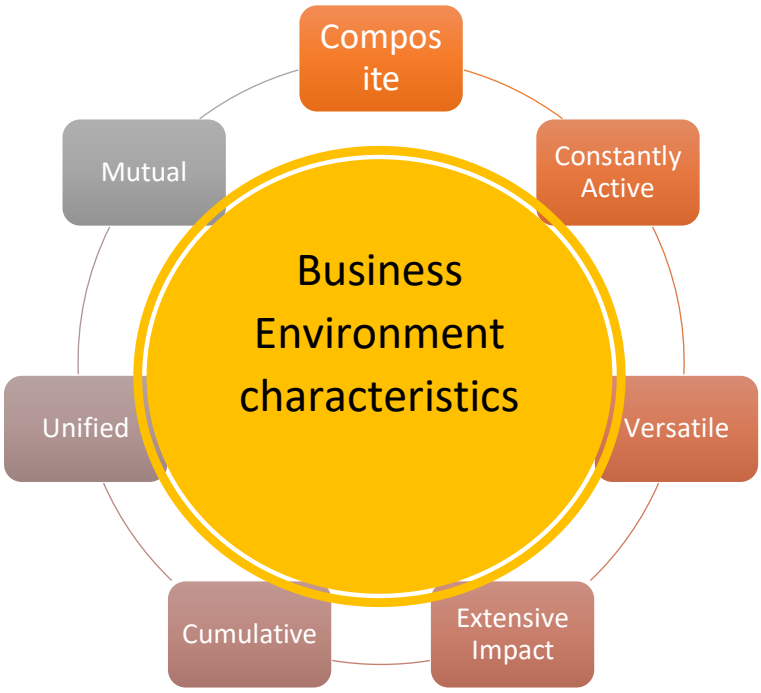
Businesses are like human being, they also do not survive in isolation. Businesses are not material that did not get impacted in vacuum, they actually requires several surrounding factors to function. Business is devised within the pertinent environment in which they have to work. The degree of prosperity of any business is set on by the techniques, it reciprocate to the environment. Organization those are not committees to change itself according to the changing phases of the surrounding factor often results in vanish out. Only the organizations those can be sustained in long-term by all adversity can articulate a successful history.

Characteristics



Business environment characteristics elaborate the various features that environment reflects. These features can impact organization fully or partially.

Composite

Any business Environment defined as intermingling number of event, situation and influences generated through various sources. Hence, it is composite in nature. Occurrence of multiple complexity results in thorny business environment.

Constantly Active

The business environment for every organization is dynamic even in its basic nature. It regularly changes its shape and character. That results it in more unpredictable.

Versatile

Business environment indicate very frequent changes, hence it is also as dynamic. It sustains the single form. Whereas. each person observes the changes in environment differently as his or her perspective. The change which can be seen by one person or organization as opportunity could be interpreted as threat to others. So, business environment could be easily stated as multi – faceted.

Extensive – impact

Whatever occurs in any business environment does not result in instantly. In fact, any circumstance in business environment either small or big always have long lasting impacts. Apart from instant reactions, it always impact in long term.

Cumulative

Business environment cannot be sustained as single force. It comprises composition of multiple forces. These forces are out of control of any business but have severe impact on any business. Environment is a inclusive jumbo vigor that sustain several external forces.

Unified

There are several factors important factors in any environment. They all are interrelated. Here change in partial or complete in any of them may result in the change complete scenario.

Mutual

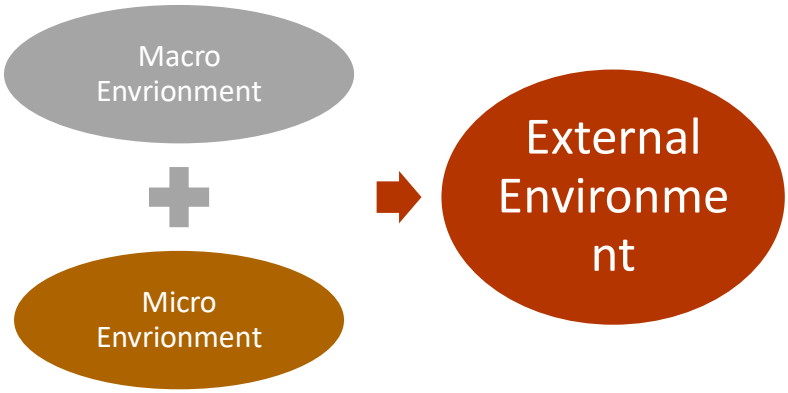
The relationship in any business or its surrounding is completely reciprocal; a minor change may bring multiple variations in over all forces.

Dimensions of Business Environment

The facets of business environment depicts to collectively all forces, organizations, entities and factors that tangibly or in tangibly affecting the overall business actions. To contain the more understanding the environment is categorized into two broader aspects:

External

External environment force collectively surrounds the business from outside its boundaries. Certainly there is always perplexed in defining these boundaries in clear, simple and precise. i.e. shareholders are the part of organization but they are also sometimes resides out of it.



Internal / Micro Environment: All the forces those are collectively or partially impacting the organization from inside are the part of internal or micro environment. It affects the organization's management. This includes organization's mission, corporate culture, owners, and board of directors, employees, and other unit of organization unions.

Demographic Environment: these are factors generally followed to distinguish among the groups of customers. These factors can be easily quantified for the purpose of segregation of various studies. Demographic factors include age, sex, family size; family life cycle, education, occupation, income, religion, race, and nationality. All major changes in society occur due to these factors and all industries get influenced by these factors either positive or negative.

Social-Cultural Environment: It contains all customs, values, culture tradition and beliefs of society in which any organization functions.

Value: A company that follows long-held values like social justice, freedom, equal opportunities, gender equality, etc. excels in that given society.

Tradition: Celebration of rituals and traditions. In India, festivals like Diwali, Christmas, and Holi provide a financial opportunity for several market segments like sweet manufacturers, gifting products suppliers, etc

Recurrent Trends: It often refers to the trends those are been opted over the period due to societal changing norms. i.e. chia seeds pudding consumptions or oats puddings.

Legal Environment:

It refers to the legit, laws, acts regulation those are framed by government and executed for business. Organizations residing under the certain boundaries are abide under the rules.

Economic Environment:

It discusses the financial framework and banking system in the country. It often depicts the market conditions, fiscal policies & monetary policies of the country. It discusses the system of equity acquisition under the act in country. Economic Policies is also the part of economic environment - Policies like corporate tax rate, export duty, and import duty influence a business.

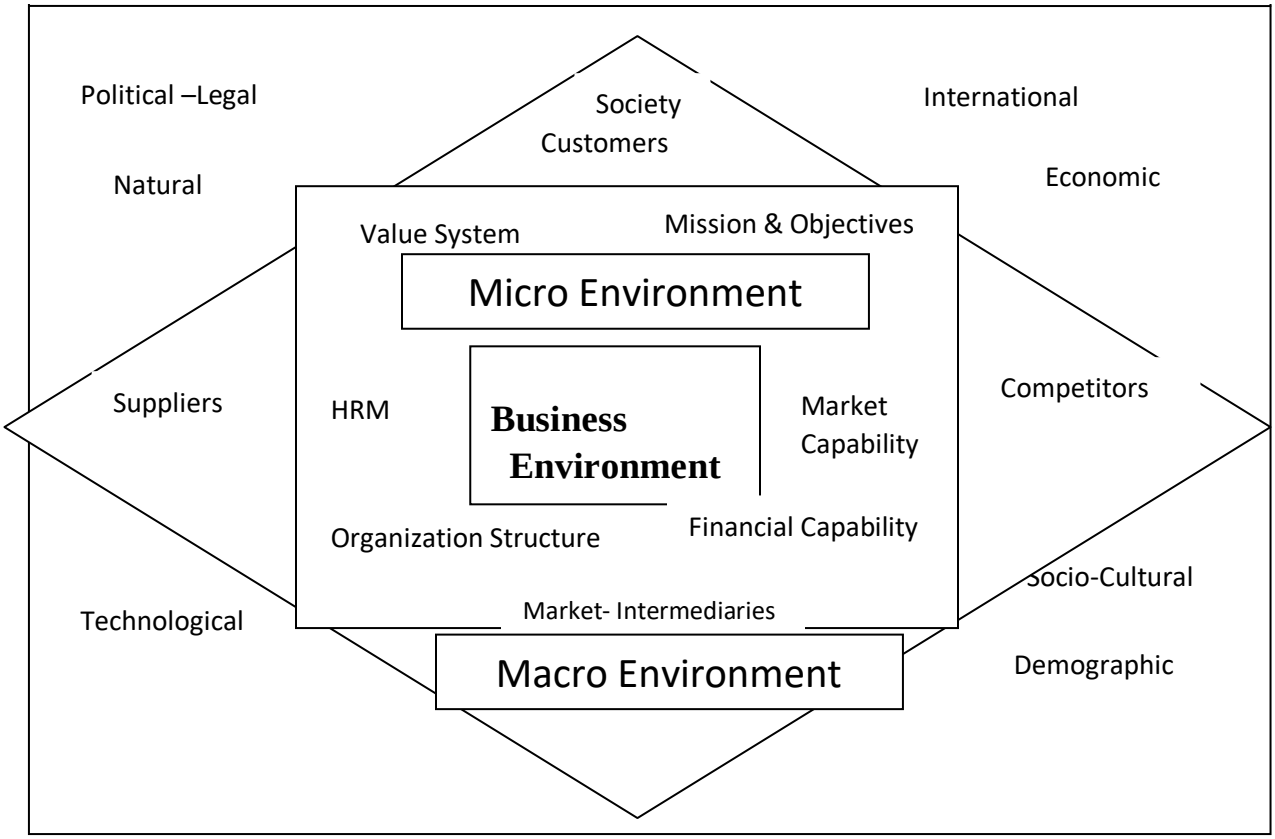
Political Environment:

It depicts the forces those are currently running the country and their inclination towards certain issues. Treatment towards the individual those are inside the country boundaries or those are alien. It comprises the government's attitudes towards businesses, ease-of-doing-business policies, the stability of the governing body, and peace within the country.

All of these factors are extremely crucial for a company to sustain itself. If the central and local government sanctions, policies, or acts are in favour of businesses, the nation's overall economy strengthens due to increasing employment, productivity, and import and export of various products. Example - A pro-business government will make foreign investments more attractive in that country.

Technological Environment:

It consists of the latest technological adaptation and advancement. It contains Attitude towards the scientific innovations to improve the quality and relevance of goods and services. A company that regularly keeps track of this news can mould its business strategies accordingly. Example: A company those are making traditional utensils are also started making cast iron utensils.



The factors which are under the control of the organization, but can influence business strategy and other decisions are termed as internal factors. It includes:

(*a*) Value System: It refers to elements those are integral element of regulatory framework in any organization. i.e. culture, climate, work processes, management practices and organizational norms.

(*b*) Vision, Mission and Objectives: The superior aim of the company and the purpose to arrive at that ends. The organization vision, mission predicts the future aspects of the organization business for its existence and objectives.

(*c*) Organizational Structure: the structure always provides the way to reach the organization its ultimate goals. It can be matrix structure, functional structure, divisional structure, bureaucratic structure, etc

(*d*) Corporate Culture: the values , beliefs and underlying behavior of organization that determines the ultimate way in which employees and management communicate and manage the macro environment.

(*e*) Human Resources: Human resource is consisting as the assets for any organization, which ascertain the failure and success of organization.

(*f*) Physical Resources and Technological Capabilities: All tangible assets come under the criteria of physical assets, which ensure the competitive competency of organsaition. Whereas technological capabilities emphasis on technological advancement of the company.

The Legal Environment of Business

The legal environment of any business depicts the pertinent intervention and attitude of government towards the trade and company of that country. It also contains the current trends, economics system, taxation policies and historical development of business. Besides it also regulates the competition of market. Agreement and contract freedom, bona fide legalization, relationships among the investors and creating healthy legal environment for growth of business. If the government is serious towards taking any action against the illegal practices, it creates sturdy steps to develop the economy.

Hence, it is essential for any organization to be acquainted legal environment for better economy. Only strong economy can enhance the healthy environment.

The business environment depicts set of condition and social, legal, economical and institutional conditions. All can be divided in internal and external events.

1. Internal Environment: It includes the human resource, capital, machinery and not least is machinery. Generally business is controlled internally. It the prevailing governing system want to alter the policies, they can alter the function and proceed forward to increase profitability.

External environments: These external factors include the system ahead of the certain enterprise. Taxation, legislative factors, social events, economic functions and government policies are the major external factor for any business.

Features of a legal environment of business:-

1. The legal environment o any business organization is dynamic in nature. Any minuscule alteration are pretty frequent, this result in several to business reguraly.
2. It is essential part to be liasoned.
3. Legal environment of any business is often considered as free from all internal and external threats. i.e. many industries are adhering the same regulation for the trade.

4. It is not about reaction measures it is also about preventive measures.

To enhance the compliances and legal environment, government has implemented some laws which take care of smooth functioning of any origination and swiftly excel. i.e. Contract laws, labour laws, company act etc. At the same time for protecting the consumer as well as society by any malpractice of business there are consumer protection act, employee's protection act, Health and security laws, security and on the job benefits.

Conclusion

A business cannot be separated from it environment and when we talk about legal environment. To create a successful story for any business, it environment will be always first and foremost take that should be dealt. Every individual the moment he or she born become the part of the laws of that country. He/ she is bind into it, Either willingly or unwillingly. Thus, business environment and its legal component is an inevitable part of business.

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