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# Lecture - 1

## Extension and Advisory Services (EAS)

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## Extension – Meaning

The word ‘extension’ is derived from the **Latin roots**, ‘**ex**’ – meaning ‘**out**’ and ‘**tensio**’ -meaning ‘**stretching**’.

Stretching out is the meaning of extension.

In other words, the word “extension” signifies an **out-of school system of education**.





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# ***The Concept of Extension***

The use of the term `**extension**` originated in **England** in **1866** with a system of university extension which was taken up first by **Cambridge and Oxford Universities**, and later by other educational institutions in England and in other countries.

The term `**extension education**` was first used in 1873 by **Cambridge University** to take the educational advantages of universities to ordinary people. There are many experts and practitioners who have defined and opined extension in various ways encompassing many facets of extension's functions.





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- ❑ The **main objective** of all extension work is to teach people living especially in rural areas, how to raise **their standard of living by their own efforts** using their own resources of manpower and materials with the **minimum assistance** from Government  
(Paul Leagans, 1960).





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# Meaning and Definitions of Extension

**Extension** is a programme and a process of helping village people to help themselves, increase their production and to raise their general standard of living. - D. Ensminger 1967

**Extension** is a two way channel; it brings scientific information to the village people, and also takes the problems of the village people to the scientific institution for solution. It is a continuous educational process, in which both learner and teacher contribute and receive. -B. Rambhai

**Extension Education** is a science which deals with the creation, transmission and application of knowledge designed to bring about planned changes in the behaviour-complex of people, with a view to help them live better by learning the ways of improving their vocations, enterprises and institutions. - Reddy A Adivi 1993



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➤ **Extension Education** is an applied science consisting of content derived from research, accumulated field experiences and relevant principles drawn from the behavioural sciences synthesized with useful technology into a body of philosophy, principles, content and methods focused on the problems of out-of-school education for adults and youth. - **Leagans (1961)**

➤ **Agricultural Extension:** It is a professional method of non formal education aimed at inducing behavioural changes in the farmers for increasing their income through increased production and productivity by establishing firm linkages with research for solving farmer's problems ensuring adequate and timely supply of inputs and using proven methods of communication for speeding of the process of diffusion and adoption of innovations. -**Y.C. Sanoria.**

➤ It may be defined as a special branch of Extension Education which deals with the economic and social aspects of people engaged in or associated with agriculture. -**National Commission on Agriculture, 1976**



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# Basic definitions related to extension

- **Extension education** is an applied social science consisting of relevant content derived from physical, biological and social sciences and in its own process synthesised into a body of knowledge, concepts, principles and procedures oriented to provide non-credit out of school education largely for adults. - Paul Leagans (1971).
- **Extension service** refers to a program for agricultural development and rural welfare which (usually) employees the extension process as a means of program implementation.
- **Extension process** is that of working with rural people through out of school education along those lines of their current interest and need which are closely related to gaining a livelihood improving the physical level of living of rural families and fostering rural community welfare.



# Differences between Formal Education and Extension Education

	<b>Formal Education</b>	<b>Extension Education</b>
1	Teaching is largely confined to the premises of the institution	It is largely outside the four walls of the institution.
2	Learners are homogeneous with common goals	Learners are heterogeneous and have diverse goals.
3	There is a fixed curriculum, students are examined and degrees are awarded.	No fixed curriculum, it is flexible depending on the needs of the learners. No examinations are conducted and no degrees are awarded.
4	Knowledge flows from teacher to the learners (Vertical)	The extension worker also learns from those who he teaches (Horizontal). He teaches through local leaders.
5	Approach is from principles to problems	Approach is from problem to principles.



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# Importance of Extension Education

1. Extension uses democratic methods in educating the farmers.
2. Extension helps in adoption of innovations.
3. Extension helps in studying and solving the rural problems.
4. Extension increases farm yields and improve the standard of living of farmers
5. Extension makes good communities better and progressive.
6. Extension contributes to national development programmes



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# Scope of Extension Education

Need for creating awareness amongst the people and changing their behaviour by informing and educating them.

Kelsey and Hearne (1967) identified nine areas of programme emphasis, which indicate the scope of agricultural extension.

1. Efficiency in agricultural production.
2. Efficiency in marketing, distribution and utilisation.
3. Conservation, development and use of natural resources.
4. Management on the farm and in the home.
5. Family living.
6. Youth development.
7. Leadership development.
8. Community development and rural area development.
9. Public affairs



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The following statements will further amplify the scope of extension.

1. Extension is fundamentally a system of **out-of-school education for adults and youths** alike. It is a system where people are *motivated* through a proper approach to help themselves by *applying science* in their daily lives, in farming, home making and community living.
2. Extension is education for **all** village people.
3. Extension is bringing about *desirable changes* in the **knowledge, attitudes and skills** of people.
4. Extension is *helping people to help themselves*.



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5. Extension is working *with* men and women, boys and girls, to answer their *felt needs* and wants.
6. Extension is teaching through *learning by doing* and *seeing is believing*.
7. Extension is working in harmony with the *culture* of the people.
8. Extension is a *two-way channel*; it brings scientific information to village people and it also takes the problems of the village people to the scientific institutes for solution.
9. Extension is *working together* (in groups) to expand the welfare and happiness of the people with their own families, their own villages, their own country and the world.





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10. Extension is development of *individuals* in their day-to-day living, development of their *leaders*, their *society* and their *world* as a whole.





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# NEED FOR EXTENSION

1. Need for extension arises out of fact that the **condition of the rural people in general and in the farm families in particular** has to be improved
2. There is a **gap between "*what is and what ought to be*"**  
( Actual desirable situation)
3. The **gap has to be narrow down by the application of science and technology in their livelihood system and bringing appropriate change in their behaviour**



# Need for Extension



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**Supe ( 1987) explained “ the researcher neither have the time nor are they equipped for the job of persuading the villagers to adopt scientific methods and to ascertain from them their problems. Similarly, it is difficult for all the farmers to visit the research station and obtained first hand information.**

**Thus, there is need for an agency to interpret the findings of research to the farmers and to carry the problems of the farmers to the researchers for solution. This gap is filled by extension agencies.**





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## **\*Note**

### **Father of University**

**Extension**

**James Stuart**

**Father of Extension**

**J P Leagans**

**Father of Indian Extension**

**K. N. Singh**

**Father of Sociology**

**Auguste Comte**



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“Rural advisory services, also called **extension**, are all the different activities that provide the **information** and **services** needed and demanded by farmers and other actors in rural settings to assist them in developing their own **technical, organisational, and management skills and practices** so as to improve their livelihoods and **wellbeing**.” (Christoplos, 2010).







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- **Agricultural Extension** was once known as the application of scientific research, knowledge, and technologies to improve agricultural practices through farmer education.



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- **Agricultural Innovation System** “is a network of organisations, enterprises, and individuals focused on bringing new products, processes, and new forms of organisations into social or economic use, together with the institutions and policies that affect their behaviour and performance.” (GFRAS 2012).
- Important actors within such a system are **innovative farmers** who successfully determine, through trial and error, which crops/products, as well as the necessary technologies, are most profitable in supplying different and emerging markets.



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# Advisory Service(s)

- **Advisory Service(s)** is a term commonly used as an alternate for “**extension services**”.
- These systems involve a broad spectrum of market and non-market entities, and agents are expected to provide useful technical information about new technologies that can improve the income and welfare of farmers and other rural people.
- Apart from their conventional function of providing knowledge and technology to improve agricultural productivity, agricultural advisory services are also expected to fulfill a variety of new functions, such as linking smallholder farmers to high-value and export markets, promoting environmentally sustainable production techniques, adapting to climate change, and coping with the effects of HIV/AIDS and other health challenges that affect rural people.



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## Commodity-Based Advisory Services

- Commodity-based advisory services are similar to **value-chain extension systems** in which an economically important crop or product, generally for export (e.g., cotton, coffee, other highvalue crops or products), requires that producers use specified genetic materials or varieties and follow strict quality-control standards in producing and harvesting the crop or product.



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## Cooperative Extension Service

- This organizational and funding model for extension is unique to the United States of America.
- It is a joint effort of national, state, and county governments within each specific state to advance the practical application of knowledge through a wide variety of extension and outreach activities. The main program areas are: youth development (especially through 4-H), agricultural and rural development, natural resource management, family and consumer sciences, and community and economic development (i.e., helping local governments investigate and create viable economic options for community development).
- This extension system has traditionally focused on a wide range aspects of rural development at the household and community levels and is not limited to agricultural extension and advisory services.





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## Decentralized Extension

This concept is based on three major elements:

- (1) transferring specific **decision-making functions to local levels**, starting with simple managerial functions, then setting priorities and allocating funds and providing other administrative functions, including accountability and financing/co-financing;
- (2) encouraging **public participation**, reflecting the degree of authority that is formally transferred to rural people, starting in an advisory capacity for program planning and implementation, and eventually assuming control over selected financial planning and accountability functions; and
- (3) expanding local involvement in organizing and delivering extension services, be it through local government actors, private firms or non-governmental organizations.



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## Demand-Driven Extension

- “Demand-driven refers to the economic concepts of supply and demand”. However, most people view technology systems as being “supply-driven” by research institutions; therefore, extension scholars relate “demand-driven” to the technology system itself and are aware that research and development (R&D) is seldom farmer-led.
- Demand-driven extension is a concept in which the farm household is the central focus of a farmer-led or participatory extension system.
- “Farmer oriented knowledge services are a prerequisite for innovation”.



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# Diffusion of Innovation

It is the process by which new ideas and technologies spread through different farming systems, countries, and cultures.

Everett Roger's innovation theory (2003) states that innovation diffusion is a process that occurs over time through five stages: **knowledge, persuasion, decision, implementation, and confirmation.**

Accordingly, the innovation–decision process is the process through which an individual or other decision-making unit passes through the stages of (1) having awareness and knowledge of an innovation, (2) forming an attitude toward the innovation, (3) making a decision to adopt (or reject) the innovation, (4) implementing the new innovation, and (5) confirming the decision.



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# Farmer Field School

Farmer Field School is a group-based experiential learning approach which seeks to empower farmers to learn, understand and make informed decisions.

In a farmer field school, groups of farmers meet regularly in the field with a facilitator to observe, talk, ask questions and learn together.

Farmer field schools, were first conceived by FAO in the late 1980s as a way of training farmers on integrated pest management (IPM).



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## Farmer-to-farmer extension

Farmer-to-farmer extension is the provision of training by farmers to farmers, often through the creation of a structure of farmer-trainers.

Different organizations use different terms for the farmers they engage to be trainers, (e.g., lead farmer, farmer-promoter, community knowledge worker) and the different names often imply different roles.

There is also much variation in the way farmer trainers are selected, how they are trained and supervised and how, if at all, they are compensated for their time and expenses





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**Gender equality** means ensuring that both women and men have equal access to the opportunities, rights, resources and voice that allow people to pursue a life of their own choosing and to avoid extreme deprivations in outcomes. (World Bank, 2009)



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4-H Clubs are youth organizations with the mission of “engaging youth to reach their fullest potential while advancing the field of youth development.”

The 4 H’s stand for “head, heart, hands, and health”.

These clubs serve over 6.5 million members in the United States, and 4-H clubs or similar organizations now exist in many other countries.

The goal of 4-H is to develop citizenship, leadership, and life skills of youth, primarily through experiential learning programs.

Though typically thought of as an agriculturally focused organization, 4-H today encourages both rural and urban members to learn about many topics, such as youth leadership, youth– adult partnership, working together to achieve common objectives, practice parliamentary procedures, public speaking, and entrepreneurship.



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## Fee-for-Service Extension

Under fee-for-service extension programs (FSE), the provider may be a public entity, a non-governmental organization, a private-sector firm, or even a consultant.



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## Input Supply Advisory Services

Input Supply Advisory Services are one-on-one advisory services provided by private-sector input supply firms (and input-supply cooperatives) to farmers who purchase production inputs from these firms.

This is the dominant model in most industrially developed countries because it has become a “win– win” arrangement. Farmers get sound technical advice from certified crop advisors, and the input supply firms are able to recover the cost of advisory services through profits generated from the sale of inputs, especially to commercial farmers.



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## Market-Driven Extension

Focus of formerly technology transfer driven agricultural extension shifts from production to profitability and market orientation, and this focus tends to be more prevalent for high-value crops, livestock, fisheries, or value added products.



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# Pluralistic Extension systems

**Pluralistic Extension systems** encompass a range of service providers, approaches, funding streams, and sources of information available to farmers and clients.

This model can allow farmers the opportunity to choose the most appropriate extension services and providers for their needs.

Collaborating extension service providers could include governments/public systems, private companies, international or domestic non-governmental organizations, non-affiliated community extension workers, or other actors (World Bank, 2012).

Governments or public extension systems often serve as facilitators and help coordinate extension actors to deliver services that utilize the relative strengths of each entity.

When pluralistic systems work well, they are well equipped to deal with the diversity of conditions, needs, audiences, and farming systems that make up the agricultural landscape by providing an equally diverse array of services and service providers (Feder, Willett and Zijp, 1999).





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## Private Advisory Services:

Under a system of private advisory services (PAS), a private for-profit sector advisor or advisory firm (or non-governmental organization) is contracted by a government entity, donor, or a farmer organization to provide specified types of advisory services to farmers.

Private advisors often use the same basic tools and methods as public extension staff, but the management of a private firm has more flexibility in hiring or laying off employees and to provide incentives based on performance, as well as to more adequately allocate program and operating funds.

Therefore, the short-term performance of PASs can be efficient and effective. However, this approach appears less sustainable over the long-term, because policy changes (e.g., when a different political party takes over government leadership) may directly affect the availability of government funding for these PAS.



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# Strategic Research and Extension Plan

Formulating a strategic research and extension plan (SREP) involves identifying the farming systems and the resource base of farmers within a target area, as well as identifying the successes and failures of innovative farmers. It also involves the identification of problems and needs of farmers by using PRA techniques and then analyzing all of this information using a SWOT (strengths, weaknesses, opportunities and threats) analysis. In addition to farmer information, the SWOT analysis examines other important types of agricultural information, including (1) the different agro-ecological zones within a region (e.g., soil type/conditions; rainfall patterns; irrigation water, including availability and cost), (2) transportation infrastructure, and (3) available markets for all types of staple and high-value food crops/products. The analysis must consider all of this information in determining the most feasible economic opportunities for different categories of farm households within each agro-ecological zone of a region. The output of the SWOT analysis will be a preliminary SREP that is reviewed, modified, and eventually approved by a cross-section of agricultural community representatives, consisting of all types of farmers (including women farmers), rural banks, input supply firms, and agricultural product buyers



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**Technology Transfer:** Technology transfer is the process of disseminating new technologies and practices that largely result from research and development efforts in different fields of agriculture. In general, these technologies include (1) genetic improvement in the form of improved crop varieties/hybrids and livestock breeds; (2) improved production practices, including soil fertility and animal nutrition; (3) improved plant protection and animal health practices; (4) mechanical technologies that will improve labor efficiency and other management practices; and (5) sustainable natural resource management practices, such as drip irrigation, water harvesting, integrated pest management, and so forth—in other words, technologies that all types of agricultural producers will need in order to increase agricultural productivity and farm incomes. In recent years, the term has fallen out of favor among some development practitioners because the word “transfer” implies a one-way, linear path from research to extension to farmers, and because it appears to preclude feedback mechanisms and the modification of technology by users.



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Training and Visit Extension is based on the principles that (1) extension agents should have primary responsibility for carrying out extension functions, (2) extension should be closely linked with research, (3) training should be carried out on a regular and continuous timetable, (4) work should be time-bound, and (5) a field and farmer orientation should be maintained. This technology-driven approach was initially successful during the late 1970s and 1980s in disseminating the production management practices associated with growing Green Revolution wheat and rice varieties. However, in rain-fed and other production areas where these new technologies were not a good fit, the training and visit approach had limited success because here the extension agents did not have economically useful messages to disseminate to these farmers. The agents had not been trained nor equipped to assess the needs of farmers and then identify alternative technologies or production systems that might better address the needs of farmers in these areas.



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# Potential Roles of Extension and Advisory Services in Specific Areas

1. *Seed and input provision* are often a part of humanitarian responses in postdisaster and postconflict situations. If they have acquired such knowledge through prior presence on the ground, extension/advisory agents can play a role in informing providers of what inputs are appropriate in the affected areas and which ones could be locally sourced.

Extensionists can also help farmers learn how to use new varieties.

2. Regarding *climate change*, a core challenge for extension and advisory services in the future is shifting from providing “packages” of technological and management advice to supporting farmers with the skills and information they need to make informed decisions.



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3. *Information-sharing tools* such as information and communication technologies (ICTs) are another area at the nexus of these services and resilience. Farmers' exposure to risk and uncertainty is often aggravated by lack of information about weather, inputs, farm management practices, or market prices; this lack of information can have an adverse impact on crop production and income.





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## **TENTATIVE POLICY DIRECTIONS TO STRENGTHEN EXTENSION AND ADVISORY SERVICES FOR IMPROVED RESILIENCE**

1. *Build individual, organizational, and system capacity to deal with risk and change.*
2. *Consider long-term sustainability.*
3. *Use ICTs to communicate information to reduce and prevent risk.*
4. *Use intervention plans and programs such as weather insurance, once it is proven viable, to compensate for shocks that have occurred.*
5. *Develop policies that define the role of extension and advisory services in assisting smallholders to become more resilient.*



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# **Extension & Advisory Services**



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# Extension & Advisory Services

“Extension advisory services, are all the different activities that provide the information and services needed and demanded by farmers and other factors in rural people to assist them in developing their own technical, organizational and management skills and practices so as to improve their livelihoods and wellbeing.” (Christoplos, 2010).



**Meaning:** These systems involve a broad spectrum of market and non-market entities and agents are expected to provide useful technical information about new technologies that can improve the income and welfare of farmers and other rural people.



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# Pluralism in Extension

Many organizations are brought together at one platform in the efforts of delivering extension services to promote production and productivity.

Apart from their conventional function of providing knowledge and technology to improve agricultural productivity, agricultural advisory services are also expected to fulfill a variety of new functions, such as linking smallholder farmers to high-value and export markets, promoting environmentally sustainable production techniques, adapting to climate change, and coping with the effects of HIV/AIDS and other health challenges that affect rural people.





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# Components of EAS

Climate smart agriculture is an approach developed by FAO in 2010 to developing the technical, policy and investment conditions to achieve sustainable agricultural development for food security under climate change.

Objectives:

- ✓ Sustainably increasing agricultural productivity and incomes.
- ✓ Adapting and building resilience to climate change.
- ✓ Reducing or removing greenhouse gases emissions, where possible.

## *The 3 pillars of CSA*

Sustainably increase  
agricultural productivity  
and incomes

1



Adapt and build resilience  
of people and food  
systems to climate change

2



Reduce and/or remove  
greenhouse gas emissions,  
where possible

3





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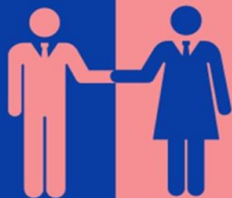
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# Commodity-Based Advisory Services

An economically important crop or product, generally for export (e.g., cotton, coffee, other high value crops or products), requires that producers use specified genetic materials or varieties and follow strict quality-control standards in producing and harvesting the crop or product.

**Gender equality:** Means ensuring that both women and men have equal access to the opportunities, rights, resources and voice that allow people to pursue a life of their own choosing and to avoid extreme deprivations in outcomes.

KOENIG



GENDER=EQUALITY





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# Farmer Field School

Farmer Field School is a group-based experiential learning approach which seeks to empower farmers to learn, understand and make informed decisions. In a farmer field school, groups of farmers meet regularly in the field with a facilitator to observe, talk, ask questions and learn together.

## Information Communication Technology:

The ICT is comprised of information technology, telephony, electronic media, and all types of process and transfer of audio and video signals and all control and managing functions based on network technologies.





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# **Integrated Rural Development**

Integrated Rural Development is “an ongoing process involving outside intervention and local aspirations; aiming to attain the betterment of groups of people living in rural areas and to sustain and improve rural values; through the redistribution of central resources, reducing comparative disadvantages for competition and finding new ways to reinforce and utilize rural resources”.



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# Challenges Faced by Indian Farmers



1. **Insufficient Water Supply:** Water availability in India is insufficient to irrigate all cultivation areas; the problem is that we still have to find cheap and suitable solutions to utilize such enormous water supplies. Due to several reasons, farmers either don't receive the appropriate amount of water or don't get the supply on time; many farmers rely on rainwater for irrigation.
2. **Less Use of Modern Farming Equipment:** In most areas, to date, farmers follow primitive cultivation methods; traditionally-used plough and relevant native accessories continue to be farmers' preference. Despite no shortage of efficient equipment and machinery, there's very little use of modern equipment, majorly because most farmers don't have lands huge enough to use advanced instruments, heavy machinery.



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### **3. Over Dependence on Traditional Crops:**

Indian farmers are growing rice and wheat for centuries now in several regions. The excessive production of the two grains, many times lead to the storage, sale problems and shortage of other farm products. Many farmers depending upon only these traditional crops indicates a lack of an effective, nation-wide agriculture plan.



**4. Poor Storage Facilities:** In rural areas, storage facilities are either insufficient or completely absent. In such a situation, farmers usually have no other option than selling their produce immediately once it's ready, at market prices that are often very low. They are far away from a legitimate income.



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**5. Agricultural Marketing:** Agricultural marketing still continues to be in a bad shape in rural India. In the absence of sound marketing facilities, the farmers have to depend upon local traders and middlemen for the disposal of their farm produce which is sold at throw-away price.

**6. Scarcity of capital:** Agriculture is an important industry and like all other industries it also requires capital. The role of capital input is becoming more and more important with the advancement of farm technology. Since the agriculturists' capital is locked up in his lands and stocks, he is obliged to borrow money for stimulating the tempo of agricultural production.





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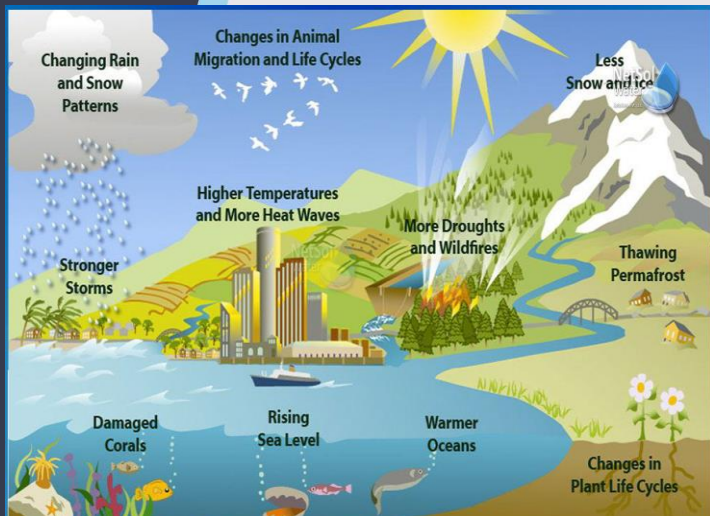
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# Natural Resource Management

Natural Resource Management (NRM) refers to the sustainable utilization of major natural resources, such as land, water, air, minerals, forests, fisheries, and wild flora and fauna.

The main objectives of Natural Resource Management are as follows:

- Sustainable management of land resources.
  - Maintaining and enhancing water assets.
  - Protecting and enhancing the marine and coastal environment.
  - Conserving and recovering biodiversity.
- Enhancing skills, capacity, and engagement.







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## **Management of declining/deteriorating water and soil for farming**

**Agroforestry**: It involves growing crops around trees and other plants such as hedges. Trees create their own microclimate, which is favorable for crops. They also act as a form of protection against wind and water damage and encourage biodiversity, which keeps ecosystems strong and healthy.

**Contour farming**: Contour farming is one of the most commonly used agronomic measures for soil and water conservation in hilly agro-ecosystems and sloppy lands.

**Crop rotation**: Crop rotation is the practice of growing different types of crops in succession on the same field to get maximum profit from the least investment without impairing the soil fertility.



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## CONT...

**Intercropping**: Cultivation of two or more crops simultaneously in the same field with definite or alternate row pattern is known as intercropping. It may be classified as row, strip, and relay intercropping as per the crops, soil type, topography, and climatic conditions.

**Mulching**: Mulch is any organic or non-organic material that is used to cover the soil surface to protect the soil from being eroded away, reduce evaporation, increase infiltration, regulate soil temperature, improve soil structure, and thereby conserve soil moisture.

**Organic farming**: Organic farming is an agricultural production system that devoid the use of synthetic fertilizers or pesticides and includes organic sources for plant nutrient supply viz. FYM, compost, vermicompost, green manure, residue mulching to maintain a healthy and diverse ecosystem for improving soil properties and ensuring a sustained crop production.



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- Installing special tanks that store rainwater for irrigation.
- Using drip irrigation for more efficient watering.
- Establishing schools for farmers where they learn how to adapt to climate change with drought-resistant crops, crop rotation, and sustainable ways to raise livestock.
- Starting seed banks to distribute local seeds more tolerant to extreme droughts and rainfall.