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BEYOND THE TRANSFER OF TECHNOLOGY



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- What is technology transfer in extension education?

Technology transfer is a **one-way process** where **technologies developed by scientists** are passed on to extension services to be transferred to users.



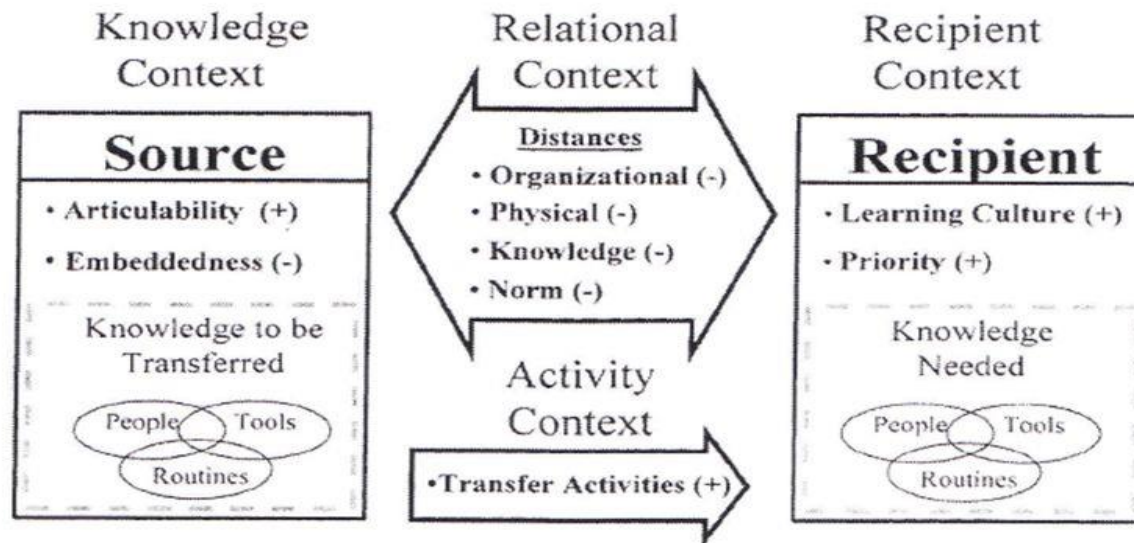
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- Technology transfer (TT), or transfer of technology (TOT), is an integral part of the extension process involving the transfer and spread of technical innovation and know-how to the farming population.
- The TOT model of the research-extension-farmer linkage is based on the tenets of DOI theory, in particular on a description of the diffusion process as a normal bell-shaped curve with farmers being placed in one of five categories according to their appearance on the curve.
- This linear model has limitations and has been severely criticized on a number of grounds, especially its assumptions about the dissemination process which raise the “issue of equality” and contribute to the “agricultural treadmill.”



Challenges and Barriers of Technology Transfer



(Cummings and Teng, 2003)



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ADVANTAGES OF TECHNOLOGY TRANSFER –

- Develops a platform to share ideas.
- Protects intellectual property.
- Promotes economic development through commercializing innovative technology.
- Enhances collaboration between the federal and non-federal science.



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Disadvantages of using modern farming methods are:-

- Modern farming methods have overused the natural resource base.
- Increased use of fertilizers has led to the loss of soil fertility.
- The use of groundwater for tube well irrigation has led to water depletion.
- Modern farming methods require a great deal of capital.



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CHALLENGES TO TECHNOLOGY TRANSFER-

There are three principles to be considered-

1. Asymmetric information.
2. Market power.
3. Externalities.

New technologies frequently challenge existing legal systems in new ways and foster the evolution of the law



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1-ASYMMETRIC INFORMATION-

- Asymmetric information is a term that refers to **when one party in a transaction is in possession of more information than the other.**

What is meant by asymmetric information

- In certain transactions, sellers can take advantage of buyers because asymmetric information exists whereby the seller has more knowledge of the good being sold than the buyer.

2-MARKET POWER-

- Market power refers to **the ability of a firm (or group of firms) to raise and maintain price above the level that would prevail under competition** is referred to as market or monopoly power.

3-EXTERNALITIES-

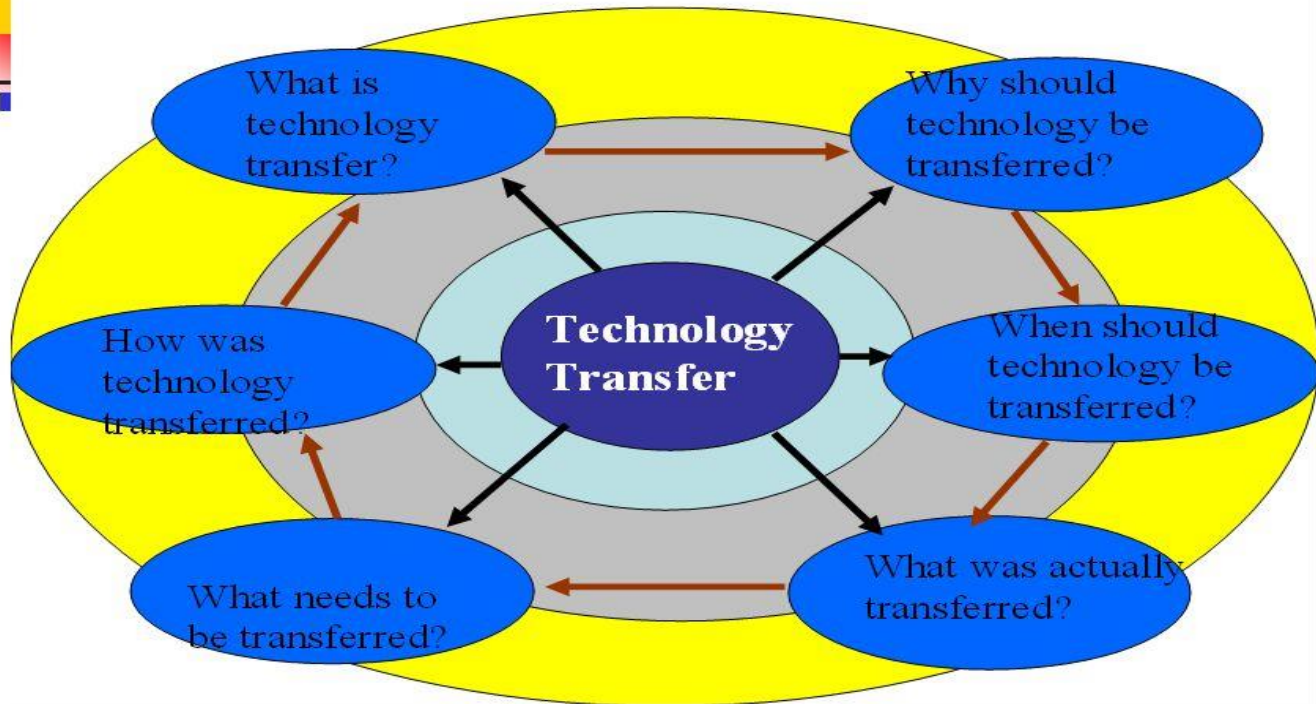
- Externalities refers to situations when the effect of production or consumption of goods and services imposes costs or benefits on others which are not reflected in the prices charged for the goods and services being provided.



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Technology Transfer: The Major Issues





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Different types of technology transfer organizations

Technology Transfer Offices (TTOs).

Technology and Innovation Support Centers (TISCs).

science and technology parks, technology incubators.

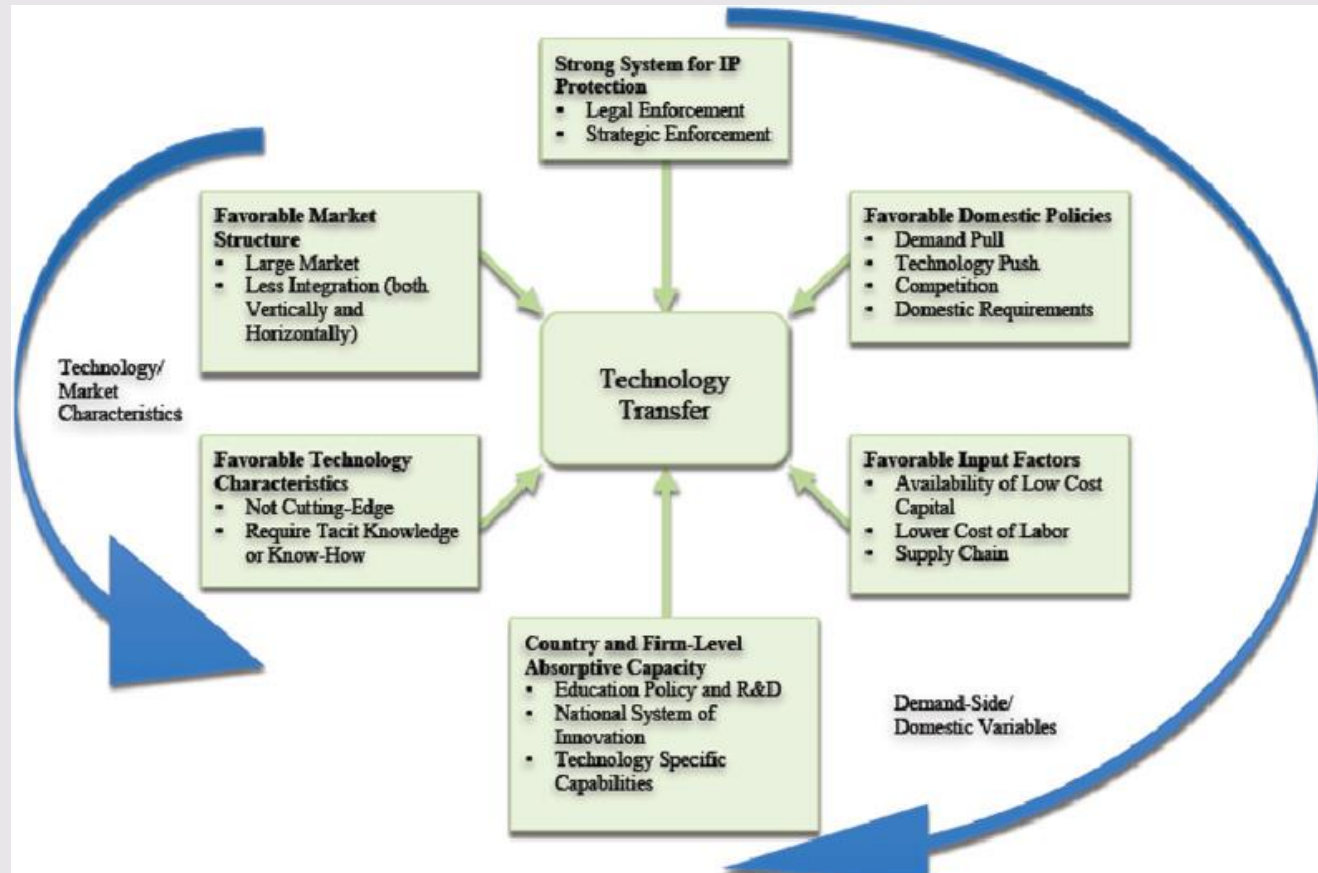
IP marketplaces.



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TYPES OF TECHNOLOGY TRANSFER IN ORGANIZATIONS-





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ORGANIZING-

- An extension agency is **an organisation that practices extension, in the context of community development**. An example is the Cooperative Extension Service, which aims to assist individuals or groups in defining and achieving their goals in rural communities in the USA.

PRODUCERS-

- A producer is **someone who creates and supplies goods or services**. Producers combine labor and capital—called factor inputs—to create—that is, to output—something else.



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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.** Together, these resources provide the ecosystem services that provide better quality to human life.





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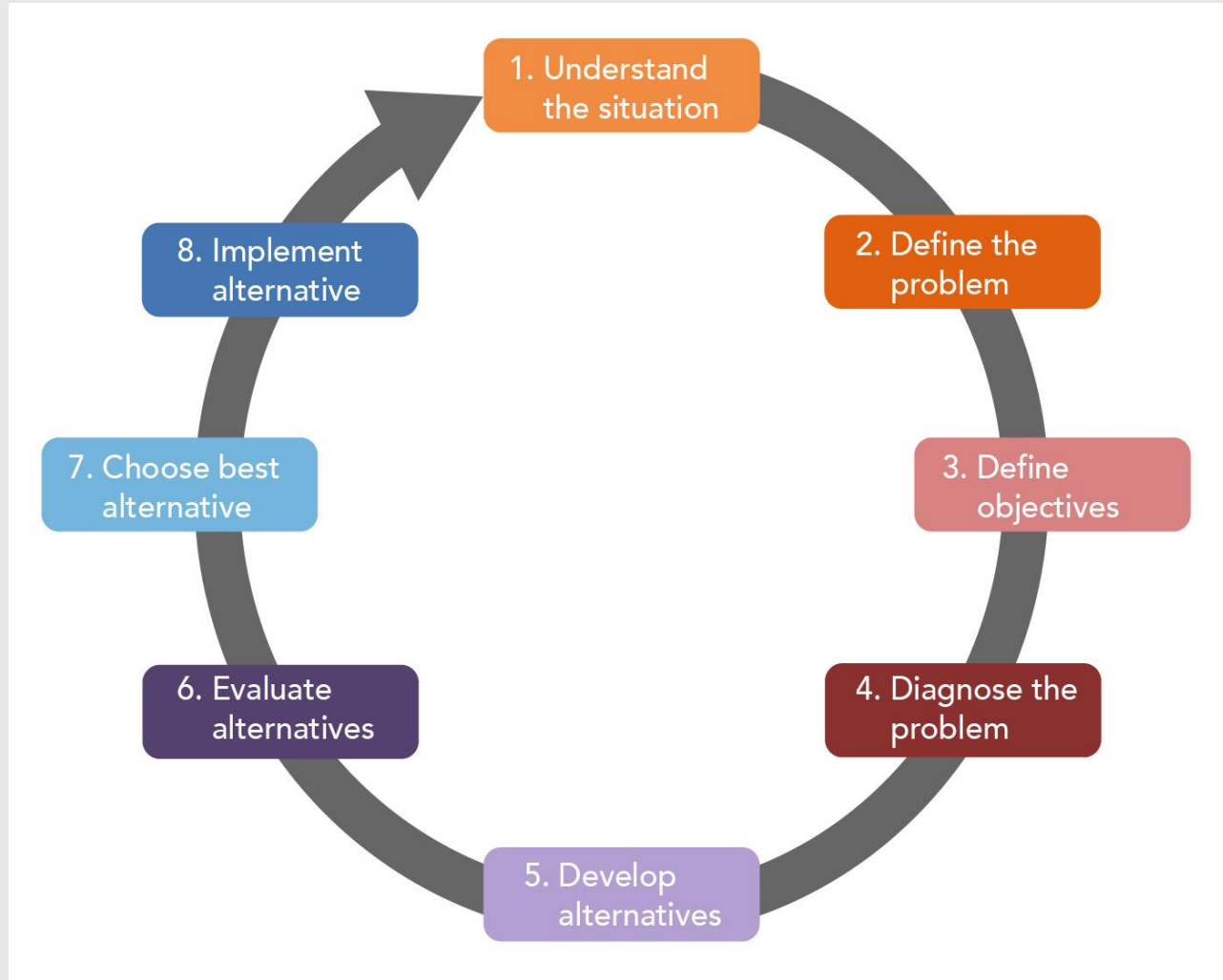
STRATEGIES FOR BETTER GROUP DECISION – MAKING-

- **Appoint a strategic dissenter (or even two).**
- **Collect opinions independently.**
- **Provide a safe space to speak up.**
- **Don't over-rely on experts.**
- **Share collective responsibility.**
- **Keep the group small when you need to make an important decision.**
- **Choose a heterogenous group over a homogenous one (most of the time).**



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ACCESS TO MARKETS-

Barriers in markets-

- Lagging legal and regulatory provisions (e.g., digital payments, cross-border commerce, etc.).
- Inadequate input markets (land, labor, capital).
- Cost barriers (compliance, formalization, informal payments).
- Limited access to finance, inputs, tools, assets, and collateral.
- Inadequate access to and limited use of technology enablers



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Continue-

- Market-related information constraints (e.g., input costs, prices, demand, etc.).
- Limited access to networks, (in-)formal information sharing, and role models.
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- Gender-based harassment in business transactions (e.g., buyers, sellers, suppliers, customs officials, etc.)
- Limited access to new customers.



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MARKET FAILURES IN NATURAL RESOURCE MANAGEMENT-

- ✓ Natural resource and environment are particularly prone to market failure.
- ✓ Market in other words, often fail to allocate natural in environmental resources efficiently.
- ✓ Implications from the conditions of competitive market.
- ✓ Prices do not affect relative scarcity and consumer preferences for goods.
- ✓ Over exploited.(efficient sustainable ad equitable NR use).



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