

# **Transfer of Technology**

## **(ToT)**

- Technology refers to ways of making or doing things. It is derived from the Greek word “ techne” meaning art or craft and “logia” meaning area of study.
- A technology is a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving a desired outcome.
- A technology usually has two components: i) a hardware aspect consisting of tool that embodies the technology as material or physical objects, ii) a software aspect consisting of information base for the tool.
- According to Yotopoulos and Nugent (1976), a technology is a body of knowledge that can be applied in productive process.

## Characteristics of a technology.

- a. Science or scientific know-how
- b. Art of systematic knowledge
- c. Practical utility
- d. Production potentiality
- In nutshell, technology refers to the art of systematic knowledge of science or scientific know-how, which may be practically utilized in the related field for the purpose of boosting the production potentiality.

# Transfer of Technology

- Technologies are generated for their application in the appropriate field. **This involves transfer of technology (ToT) which is one of the important functions of extension service.**
- Transfer of technology is needed for improving the production potential and productivity in farming.
- **Brooks (1966) defined** “technology transfer” as the process by which science and technology are diffused through human activity.
- **According to Shand (1976),** ToT means translating the research findings or technologies into actual practice in the farms by recipients or farmers themselves. It implies the trial, evaluation and consequent adoption of technologies generated.

# The components of technology transfer

- i) Science or scientific know-how,
- ii) Dissemination,
- iii) Application or utilization,
- iv) Adoption and
- v) Improved production.

# Models of transfer of technology

- **I. Top-down-model (Conventional model):**
- **Salient features**
- - Farmers act as passive recipients of technologies
- - No contact between farmers and scientists
- - Extension plays the role to persuade the farmers to adopt new technologies
- In this model, the client's views and problems are not given due importance which is an inherent problem of this model.

- **II. Feedback model**

- **Salient features**

- - Research values identification of target group and its problems.
- - Close interaction between research and extension systems.
- - Research is carried out both at research farms and farmers' fields
- - Researchers include extension personnel and social scientists to have a holistic understanding of farmers' problems.

- **III. Farmer- back to- farmer model (Farmer participatory model)**
- - An alternative to the two models discussed earlier.
- - Here the underlying assumption is that research must begin and end with the farmer.
- - The farmers must be incorporated as fully active members of the problem solving team.



# Emerging concepts in TOT

- Participations Technology Development (PTD) is a new strategy in TOT that acknowledges the superiority of rural people's accumulated wisdom and its use in generating new technologies by the research systems.
- The rural people's accumulated wisdom which is also referred to as **Traditional Knowledge (TK) or Indigenous Technical Knowledge (ITK)** is the knowledge gathered by a society over a period of time based on experience, trial and error, natural selection and keen observation through centuries and it is passed on from generation to generation by words of mouth.
- It emphasizes on strengthening people's capabilities to technology development and extension. **This strategy involves techniques like Participatory rural Appraisal (PRA) , ITK and networking etc.** for efficient generation and transfer of technology.

# Role of N.G.O.s and Self Help Groups in TOT in Fisheries

- NGOs can undertake technology transfer by conducting: training programmes by their own staff or involving personnel from research organisations, demonstrations , awareness campaigns, exhibitions and periodical dissemination of information through mass media and publications.
- As many NGOs approach the clientele through Self Help Groups (SHGs), the individuals as members of such groups have a binding on the decisions made by such groups. Thus, technology transfer process can be hastened by involving NGOs and voluntary organisations in such programmes.

# Transfer of Technology Programmes in fisheries

- The **All India co-ordinated Research Project (AICRP)** on carp culture was started in 1971 for demonstrating composite fish culture technology in different agro-climatic zones.
- - The **Krishi Vigyan Kendras (KVK)** were started in 1974 as grassroot level institutions to impart need-based and skill-oriented vocational training in agriculture and allied fields including fisheries through work experience.
- - **Operational Research Project (ORP)** was launched in 1974-75 to disseminate proven technology in a cluster of villages for rapid dissemination of technical know-how.
- - **Fish Farmers Development Agency (FFDA)** was initiated in 1974-75 to popularise fish culture technology. Training programmes were given to selected beneficiaries. Assistance was also provided in construction and renovation of water resources, arranging credit facilities from nationalised banks, technical and input support and finally helping in marketing the produce.

- - **Lab to Land Project** was launched in 1979 with the objective to transfer technology from research laboratory to farmers' fields.
- - **Brackishwater Fish Farmers' Development Agency (1985-1990)** was established with an objective to promote shrimp fish farming in brackishwaters.
- - **Institute Village Linkage programme (IVLP)** was initiated in 1996 for assessment and refinement of technology in the light of bio-physical and socio-economic conditions.
- - **JaiVigyan Mission (2000)** was started for ensuring household and nutritional security through enhancing productivity in fisheries in tribal, backward and hilly areas in Orissa, Assam and Chhattisgarh.