MODULE 4

Contents

Technology Development & ethics

Appropriate Technology

Technology Transfer & Global Justice

Surveillance

Social Impact of Technology Development & Engineering Solutions

APPROPRIATE TECHNOLOGY

- Appropriate technology is a movement (and its manifestations) encompassing technological choice and application that is small-scale, affordable by locals, decentralized, labour-intensive, energy-efficient, environmentally sustainable, and locally autonomous.

- Mahatma Gandhi is thought of as the father of the movement, developing the concept of village-based technology, though there was no name for it at the time.

- Economist Dr. Ernst Friedrick "Fritz" Schumacher coined the concept of appropriate technology in 1962, yet called it intermediate technology.

- Today appropriate technology is often developed using open source principles, which have led to open-source appropriate technology (OSAT) and thus many of the plans of the technology can be freely found on the Internet.

- OSAT has been proposed as a new model of enabling innovation for sustainable development.

- Appropriate technology
  - Use local materials and people-power often taking the form of "earth building"
  - Use Indigenous Technology
  - Can be built locally
  - Few moving parts — Less to go wrong
  - Easily repaired
  - Affordable
  - Suitably disposable
  - Are culturally sensitive
  - Have been requested by locals to fill a self-identified need
  - Involve interactive collaboration where both parties grow and develop from the experience.

EXAMPLES OF APPROPRIATE TECHNOLOGY ACROSS WORLD

Composting Toilets in the Amazon

Water Roller Project

UNIVERSAL GROUNDNUT SHELLER

SOLAR POWERED LIGHT BULB
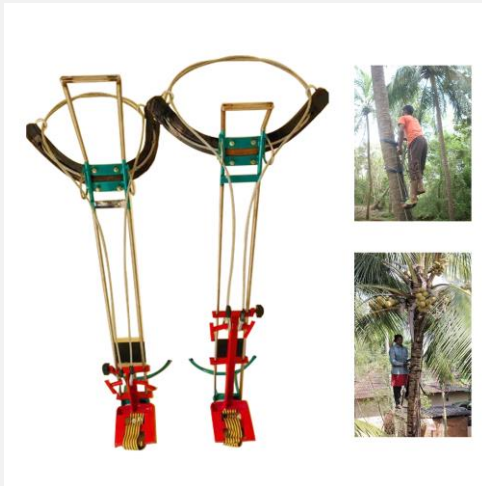
Pot-in-Pot Refrigerator

WATERLIGHT

APPROPRIATE TECHNOLOGY IN INDIA

- Hand pump

- Coconut Tree Climbing Device

- Grass pooler

- Oil Seed extractor on wheel

ETHICAL ASPECTS OF APPROPRIATE TECHNOLOGY

- Appropriate Technologies are designed on open-source principles.

- Designed and developed by taking into consideration the principle of "maximum good to maximum people"

- Unlike the products of big tech companies, it designed and developed on the principle of "no profit no loss".

- Empowering the marginalised.

- Doesn't promote the consumerism culture.

- Sensitive to sociocultural and political dynamics and norms.

- Unlike new technologies, it doesn't interfere in personal, private life of any individual.

- Nurturing to the environment and human health.

TECHNOLOGY TRANSFER & GLOBAL JUSTICE

- Technology transfer is the movement of data, designs, inventions, materials, software, technical knowledge or trade secrets from one organisation to another or from one purpose to another.

- The technology transfer process is guided by the policies, procedures and values of each organisation involved in the process.

- Technology transfer can take place between universities, businesses and governments to share skills, knowledge, technologies, manufacturing methods, and more.

TECHNOLOGY TRANSFER & GLOBAL JUSTICE

- This form of knowledge transfer helps ensure that scientific and technological developments are available to a wider range of users who can then help develop or exploit it.

- There has also been resistance against increased technology transfer, mostly from developed countries who have stressed the need for intellectual property rights (IPRs) in order to maintain innovations.

- This position has been challenged by developing countries who argue that IPRs are an unfair development barrier.

IS IT JUST?

- Non-domination
- Impartiality
- Mutual Recognition
- IPR vs Social Justice
- Maximum Good to maximum people.
- Financial Implications

SURVEILLANCE

- Surveillance is, simply put, the observation and/or monitoring of a person.

- One-way observation is in some ways an expression of control.

- Surveillance has evolved from a primitive and a careless procedure to a carefully planned out scheme that involves more than a few parties.

- The technological advancements that the contemporary society so enjoys has become the very tool to be used against them.

IS SURVEILLANCE APPROPRIATE?

It depends on the following three parameters

- The Means

- The Data Collection Context

- Uses

HOW DO WE MAKE SURVEILLANCE ETHICAL?

- At the individual level, privacy is an important thing.

- It makes us feel safe, makes us feel in control again, even if just for a while.

- Mass surveillance is a threat to this privacy, or at least that is what most people use to make their arguments against it.

- For mass surveillance to be ethical, there needs to be a **reason** for it.

- For surveillance to be ethical, there also needs to be **transparency**.

- This means that there should be **integrity** of motive- no secret agendas.

- Right from the way the data is collected to the way it is handled and used, there needs to complete honesty between the parties involved.

- The methods used need to be analysed for proportionality, there must be laws put in place to protect the interests of those being surveilled.