

The role of Research in Promoting Innovation

Bitrina Diyamett

Science, Technology and Innovation Policy
Research Organization (STIPRO)

Introduction



- There is now a general consensus among academics and policy makers that innovation and development are intimately related.
- What remains is how innovation can be promoted in different social and economic settings.
- A big part of challenges surrounding promotion of innovation is its understanding.
- And therefore first is to define innovation:

It is successful creation, development, and marketing of new goods or successful application of new techniques or ways of working that improve the effectiveness of an individual and organization (Archibugi et al., 1994).

Definition of Innovation continues

- Note a terminological distinction between **invention**, which is creation of a new thing that is potentially useful for social and economic dev; and **innovation**, which is actual putting of the new thing into social and economic use.
- The new thing does not necessarily be radically new to be referred to as innovation; a change in an existing product and process is also innovation – but the change has to be significant, and must relate to the functional characteristics of a product or process.
- Innovation is **context specific** and **systemic** in nature, depending on fruitful interaction among important stakeholders in a given society.

Innovation and research



- Successful promotion and diffusion of innovation in a society therefore requires in-depth knowledge of the subject innovation (whether technological or otherwise), and that of the society itself.
- To a large extent this knowledge is acquired through systematic and credible research.
- Important fields of research include: science, technology, economics, sociology, humanities, etc.
- Innovation studies brings different fields together and it blurs disciplinary boundaries.
 - One hears of subjects such as technology, culture and innovation; technology and gender; economics of technological change, **political economy of technological change** etc.

Major specific ways in which research is used to enable innovation



- i) To produce new and improve existing products and processes (both tangible and intangible) – research largely in engineering and natural sciences.
 - In most cases here people think of production and marketing of radically new things.
 - But research is also used in adapting and upgrading of existing technologies.
 - It is how most of the now developed countries started to build their innovation capabilities (e.g. Japan).
 - Japanese R&D during the catch up period was on adapting imported technologies (Manil, 1999).

Major specific ways in which research is used to enable innovation cont..



ii) To inform decision making on innovation – normally research in the field of **social sciences**.

- A relatively new area of research, especially in Africa.

- Given different names at different universities

e.g. **innovation studies; science, technology and innovation policy studies; innovation and development; science and technology policy studies, etc.**

- Although the emphasis in these areas is slightly different, overall the objective is to build capabilities to monitor the dynamics of science, technology and innovation in societies – testing and refining concepts, identifying best practices and challenges that are useful in planning and policy making in science, technology and innovation.

Major specific ways in which research is used to enable innovation cont..



- Slightly different research area, but also in social sciences, is **innovation and technology management** – knowledge focused largely on promotion of business, and useful in decision making at the company level.

iii) To develop innovation indicators

- Regular and systematic monitoring of innovation dynamics in society is important, and it requires reliable indicators.
- Development of such indicators normally arise from a good amount of innovation studies over time (accumulation of knowledge); it is how manuals such as Oslo and Bogotá were developed.

Major specific ways in which research is used to enable innovation cont..



iv) Human capacity building in innovation:

- To promote creative and contextual thinking-research very important in human capacity building for innovation (PBL).
- Most inventive activity is carried out in private industry or in collaboration with the university. In most cases, the industry is interested in universities as educators of students in basic theory and research methods, than as sources of new industrial technology.
- When thinking broadly about the role of universities in the process of development, it is therefore important for universities to have high-quality programs in both basic and applied fields of research earlier mentioned.

Challenges facing research for innovation in Tanzania



- First is all the research related problems mentioned by colleagues.
- Over emphasis on the linear model of innovation – research- invention commercialization.
 - And lack of recognition and knowledge on the role of research in the adaptation and upgrading of existing technologies – very little is known on the status of this in Tanzania: **to what extent R&D contributes to this?**
- Very little research and teaching is undertaken in the area of innovation studies/ innovation policy research, and innovation and technology management.

Challenges facing research for innovation in Tanzania cont...



- Inadequate studies on science, technology and innovation in the country negatively affects efforts to promote innovation in a country.
 - This is especially the case for poor countries where:
 - i) there is pervasive market and system failures for innovation
 - ii) existing concepts and theories were developed largely from the empirical observation from developed countries.
 - More generally, factors governing innovation are constantly changing.
- Related to the two above is implementation of other research programs for innovation – research policy is guided by policy research.

Thank you very much for your kind
attention

For more information please visit us at
www.stipro.or.tz