POVERTY REDUCTION THROUGH TECHNOLOGY IN SOUTH ASIA

History shows that technology has been a powerful tool for human development and poverty reduction. The dawn of the 21st century marked overall progress and revolutionary achievements in technological advancements. In almost every field, technological innovations have tantamount to explosive levels. Most observable advancements are: in medicine, information and food.

At the same time, the world leaders were forced to acknowledge that behind the records of overall progress lays a more complex picture of severe unequal distribution of development. Inequality exists between and within regions, countries and communities. The Digital Divide or technology divide, reflects these familiar inequalities - although technological change alone cannot address them.

About 40% of the world's absolute poverty lives in South Asia that contains one-fifth of the world population. South Asia is by now the poorest region in the world - its per capita income of US$ 309 is much below the US$ 555 of Sub-Saharan Africa and is only one-third of the average of US$ 970 for all developing countries.

The extent of human deprivation in South Asia can be summed up as follows:

- Over 515 million people live in absolute poverty.

- 36.6% live on less than 1$/day

- Less than 2$/day 88.8%

- 260 million people lack access to even rudimentary health facilities.

- 337 million people are without safe drinking water.

- 830 million people have no access to basic sanitation.

- 395 million adults are unable to read and write.

- 600 million people have no proper shelter.

- About 27% people live without adequate food

- About 50% children under 5 are malnourished in 1999 (increased from about 45% in 1995)

  (www.worldenergy.council.org, 25/09/03)

The above picture also shows that technology and access to technology and innovations is not benefiting a large numbers of poor people in the South Asia. The question is 'Why?' In South Asia we can see both extremes of the technology spectrum - nuclear research and ICTs at one end and bullock carts and hand tools at the other. Why are the benefits of technologies that are available in the countries of the South Asian region unavailable to all of the people in the region?

It appears that technology development is geared through market pressures and needs of the developed world and not of the needs of the poor countries that have little purchasing power. It is important to note here that currently over 60 percent of the research and development in these countries are carried out by the private sector *(Human Development Report 2001).*

The market has acted as a powerful engine for technological progress, but not enough to create and diffuse technologies needed to eradicate poverty, this is especially the case in South Asia.

It appears that technology development is geared through market pressures and needs of the developed world and not of the needs of the poor countries that have little purchasing power. In 1998 the 29 OECD (organization for Economic Cooperation and Development) countries spent $520 billion of research and development, an amount larger than the combined economic output of the poorest countries (30) of the world. OECD with 19% of the world's population accounted for 91% of the total patents issued in 1998. The research and development activities therefore, fail to develop technologies for the poor. Poor regions such as South Asia are consequently compelled to depend on OECD for new technologies that often need expensive adjusting and infrastructure investments and negative externalities.

The above statistics gives only a part of the picture of science & technology. Research and Development for the needs of poor in developing countries as in South Asia, happens at different levels and pace. A lot of innovations continue to happen at community level, at people's homes and through individuals (therefore locally/privately funded) with no official recognition and support. These science and technology advances provide solutions to new challenges faced by poor. These have the added advantage of being tailor made for specific situations. This science and technology are not recognised, there are no formal mechanisms through which these can be transferred and therefore the value given to this science and technology is limited. [E.g. Honeybee?]

It is well known fact that modern science and technology is built on itself. So, indigenous technologies played a crucial role in arriving where we are today with science & technology. Some technologies considered as "slow and ineffective" such as indigenous food, medicine, cosmetics, practices and the like, developed and used by the poor are of high commercial interest to the developed world. Although they lack the same recognition of R&D there are a number of instances of pilfering of locals' knowledge and re-presentation and commercial use of this knowledge by powerful countries and companies. For example, in the field of medical and bioresearch, researchers are analysing active ingredients of the traditional preparations that work well, and claim it as new knowledge. The recognition goes to the researcher rather than traditional technologists who arrived at these preparation/s and were really the ones who came up with solutions for problems.

On the other hand, many technologies transferred to the developing world have benefited sections of the population, e.g. immunisation against polio. Benefits of technology development in agriculture is less clear - could be said to be questionable. There are obvious benefits of productivity increase, although it may have created dependency and problems for large numbers engaged in subsistence agriculture in South Asia. Nevertheless, the science and technology presents immense opportunities to benefit many poor and impact positively on their lives.

The suspicions of anti technology boosters amongst us would say that it is the promotion of expensive inappropriate fixes that do not take realities in South Asia into account. On the other hand, turning our backs on trends based on new technologies may not be possible or wise. Choice of doing it, could risk marginalizing and denying ourselves of opportunities to transform the lives of poor in South Asia through the effective adoption of new technologies.

South Asia carrying about half of the world's absolute poverty needs to face this challenge of choosing suitable technologies for poverty reduction. Technological agenda in South Asia is led by the governments and have their political endowment. Therefore, if unravelling above issues will direct us in a revised direction, the new direction needs to have South Asian political backing.

The Human Development Report 2001 says that developing countries should be using the new advancements such as bio and information communication technologies for poverty reduction and argues for a new partnership between development and technology, which is needed. They also emphasise pro-poor strategies for achieving this.

Is South Asia rising to this challenge? In doing so, some of the important questions that may need answers would be:

- Are our R&D agendas commercially driven? If they are, will it benefit the poor? How can poor people's needs and priorities influence the R&D agenda of public bodies?
- What is role indigenous knowledge? How can technological change based on IK be fostered and supported to benefit South Asia and the half of world's poor in it?
- Is there adequate or required political will to address poverty and inequality in South Asia?

Questions:
- How can we make new technologies work for human development?
- Is transfer of the 'new' technologies practical and desirable (for example, it does not question the as yet unproven benefits of biotechnology in agriculture)?
- How can we be sure that, for example, information and communications technologies will not meet the same fate particularly when one third of humanity has yet to use a telephone? What are the barriers to people's access to technology, and how can they be tackled?
- Should the focus of the 21st century technology debate be restricted to 'new' technologies, or should it include all technologies of use to poor people?
- What are the 'opportunity costs' of neglecting low cost technologies in favour of untested (and, in the case of biotechnology, potentially damaging) 'new' technologies?
- With the decline in economic and political power of the nation state, to what extent can 'countries' choose technologies other than in a general policy sense?
- Is it people, not countries, who make technology choices?
- Is it the case that technology will only solve problems of poverty if we start from the people, and what they need from technologies?
- What types of investment are required from multilateral agencies, donor governments and developing country governments to assess how to build poor people's technological capacities?
- Is there the necessary commitment to expand on the best of these local lessons on a widespread scale?
- Is there the political will to enter partnerships with poor people, their associations and institutions, and to remove the barriers in their way?
- What are the "pro poor strategies" in science and technology that South Asia needs to develop and adopt?