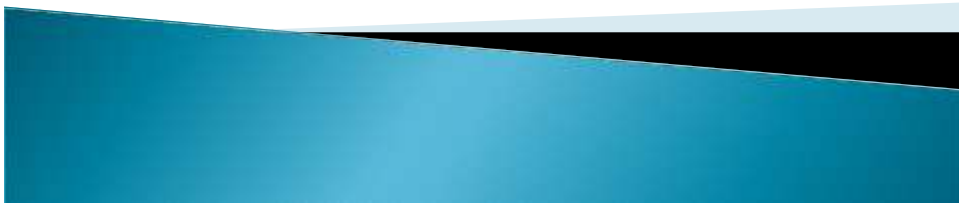


Technological capacity and requirement in South Asia

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Structure of presentation

- ▶ Technological capacity in South Asia
- ▶ Constraints on technological advancement
- ▶ Technology transfer
- ▶ Way forward



Technological capacity in South Asia

- ▶ As a region South Asia ranks much lower in global ranking on most indicators of technology (Table 1 and Figure 1) when compared with other neighbouring countries such as China, Iran and Thailand
- ▶ Within the region there is some variations with India and Sri Lanka in general having better capacity compared to other countries, and Sri Lanka, in fact, having better ranking than other comparator countries
- ▶ LDCs such as Bangladesh and Nepal are at the bottom of the list; and the situation has not changed much in the past few years



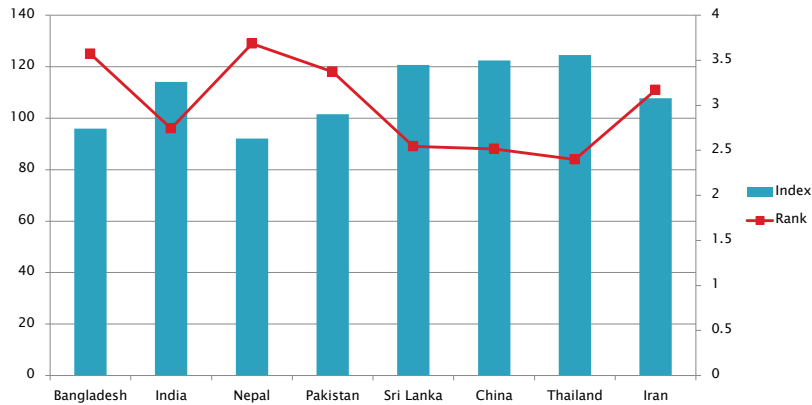
Table 1: Technology and innovations indicators

Economy	Year	Percentage of firms			
		with an internationally-recognized quality certification	using technology licensed from foreign companies*	having their own Web site	using e-mail to interact with clients/suppliers
World	...	16.5	15.2	35.1	64.5
East Asia & Pacific	...	19.2	18.7	29.2	64.1
South Asia	...	9.4	5.6	22.8	43.6
Afghanistan	2008	8.5	10.8	24.1	46.6
Bangladesh	2007	7.8	3.8	15.7	39.7
Bhutan	2009	5.4	6.9	30.1	58.5
India	2006	22.5	5.3	31.1	56.7
Nepal	2009	3.1	0.6	23.3	46.2
Pakistan	2007	9.6	2.7	16.6	26.8
Sri Lanka	2011	9.1	9.3	18.6	30.5
Thailand	2006	39	...	50	74.1

Source: IFC Enterprise Surveys



Figure 1: Technological readiness, 2012-2013

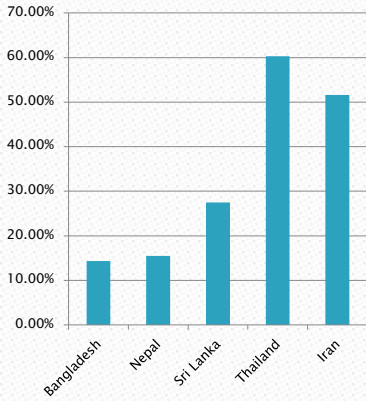


Source: World Economic Forum (2012)

Constraints on technological advancement

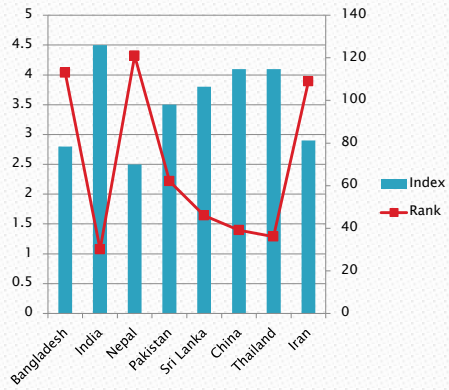
- ▶ Budgetary constraints
 - Very low Gross Expenditure on R&D (GERD) as percentage of GDP (e.g., 0.37% for Nepal and 1% for India as opposed to 4.28% and 3.36% for Israel and Korea respectively)
- ▶ Human resource constraints (Figure 2a and 2b)
- ▶ Policy-implementation gap
- ▶ Silo mentality of technology promoting institutions
- ▶ Limited involvement of private sector in R&D
- ▶ Limited technology transfer (Figure 4)

Figure 2a: S&T graduates as % of total graduates



Source: UNESCO

Figure 2b: Extent of brain drain, 2012-2013



Source: World Economic Forum (2012)

Technology transfer

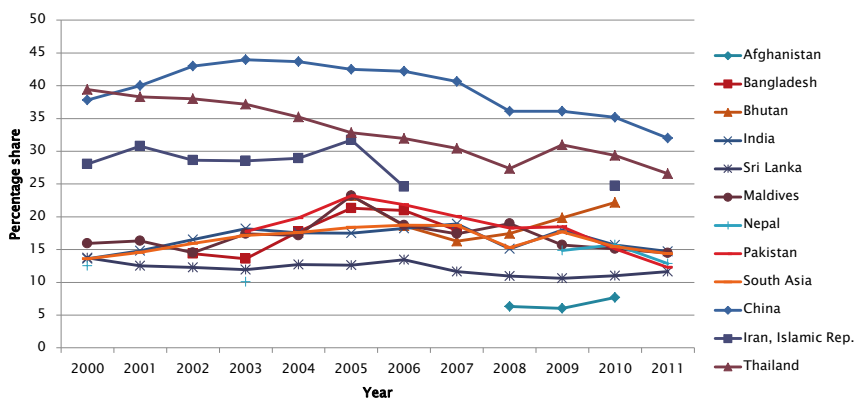


Pathways to technology transfer

- ▶ Import of capital goods
 - South Asian countries perform very poorly vis-à-vis its neighbours (Figure 3)
- ▶ Foreign aid (foreign funded projects)
 - There are a few anecdotal evidence, but there is limited data on how much the countries in the region have been receiving technology through this channel
- ▶ Foreign direct investment (FDI)
 - South Asia in general receives very limited amount of technology transfer through this channel compared to its neighbours
 - Trade Related Investment Measures (TRIMS) does not allow countries to impose any performance (including technology transfer) requirement on foreign investment



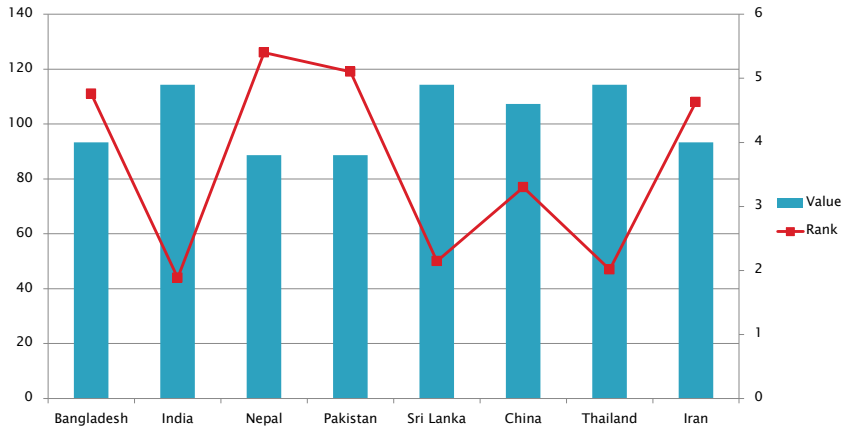
Figure 3: Share of capital goods imports to total imports, 2000-2011



Source: WITS online



Figure 4: FDI and technology transfer, 2012-2013



Source: World Economic Forum (2012)

North-South technology transfer

- ▶ Despite rhetoric and its mention on various agreements/conventions, there is no binding international legal instrument to facilitate North-South technology transfer
- ▶ Even MGD goal 8 (dealing with Global Partnership) is silent on the issue of technology transfer
- ▶ The only seemingly binding provision in relation to LDCs contained in Art. 66.2 of the Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement of the WTO too is not operational, due to:
 - absence of milestones and deadline
 - lack of a robust monitoring mechanism, despite the requirement of periodic updates since 2003
 - lack of clear understanding on the part of developed countries on the nature of their obligations

South-South technology transfer

- ▶ South-South technology transfer is preferred due to low cost of transfer and fast diffusion as well as adaptation
- ▶ There is nothing worth highlighting in terms of regional mechanism for technology transfer – either through SAARC or BIMSTEC
- ▶ Bilateral technology transfer – with or without any formal mechanisms – could be more useful. Examples include:
 - Climate resistant seed variety from International Rice Research Institute (e.g., IRRI to various South Asian countries)
 - Converting waste agricultural biomass into energy and drought and flood resistant seeds (e.g., India to Nepal)
 - Rice milling technology (e.g., China – Bangladesh, India, Nepal)
 - Providing scholarships and fellowships for S&T education (e.g, India to Nepal; India to Bhutan)



Way forward

- ▶ Keeping own house in order (budget, human capital, collaboration, implementation)
- ▶ Inclusion of technology as a cross-cutting issue in international development framework (post-2015)
- ▶ More binding provision with milestones and targets to make multilateral commitment enforceable
- ▶ Increased use of existing mechanism for technology transfer
- ▶ Enhanced South-South technology transfer



Thank you

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