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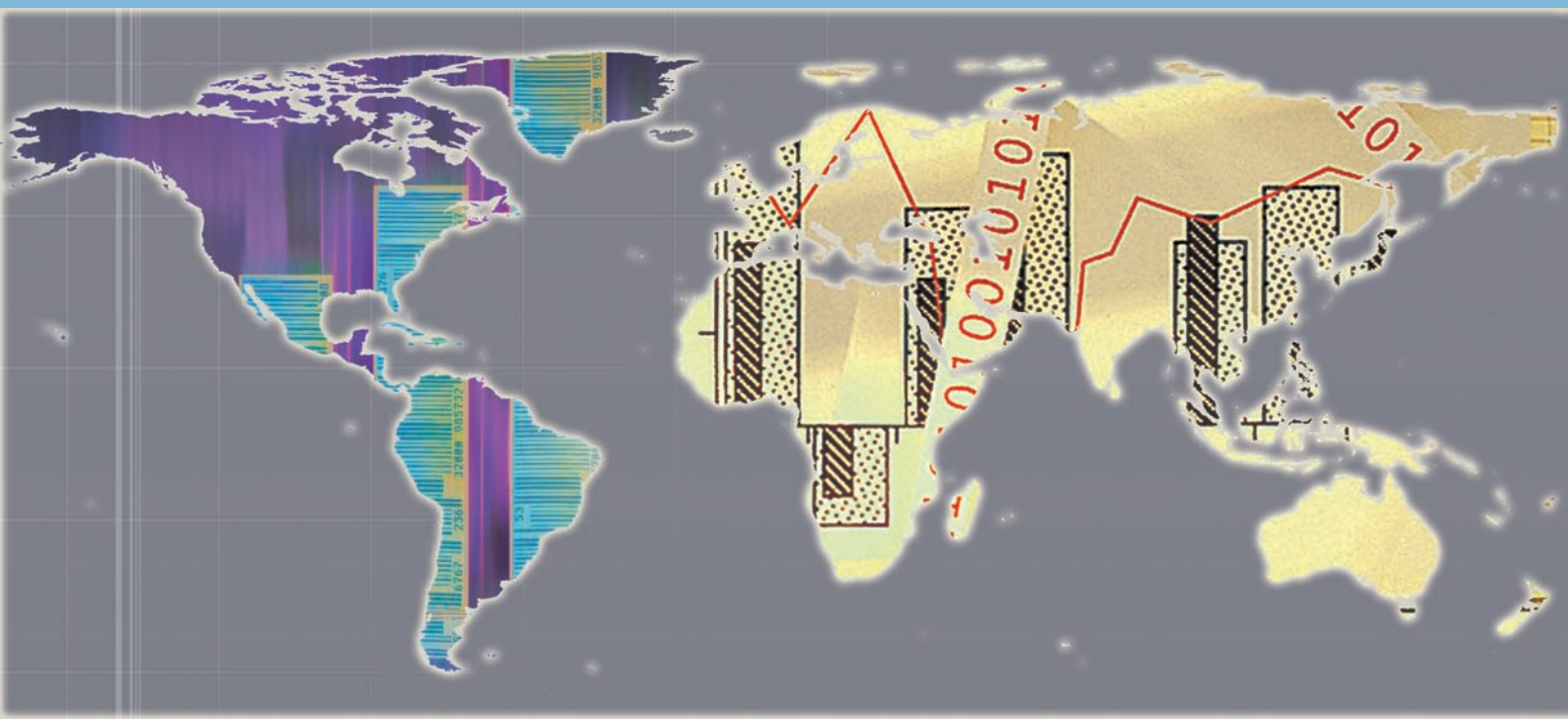

South-South Cooperation, Economic and Industrial Development of Developing Countries: Dynamics, Opportunities and Challenges

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South-South Cooperation, Economic and Industrial Development of Developing Countries: Dynamics, Opportunities and Challenges

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Contents

List of abbreviations and acronyms

ASEAN	Association of Southeast Asian Nations
BRICS	Brazil, Russia, India and China
DCs	developing countries
EU	European Union
FDI	foreign direct investment
FTAs	free trade agreements
LDC	least developed countries
MDGs	Millennium Development Goals
MERCOSUR	Mercado Común del Sur (Southern Common Market)
MHT	medium- and high- technology
MNEs	multinational enterprises
MVA	manufacturing value added
NAFTA	North American Free Trade Agreement
NICs	newly industrializing countries
R&D	research and development
RTAs	regional trade agreements
SACU	Southern Africa Customs Union
SSA	Sub-Saharan Africa
SSC	South-South Cooperation
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNIDO	United Nations Industrial Development Organization
VIIT	vertical intra-industry trade
WTO	World Trade Organization

Introduction

Two key considerations that animate this issues paper are: the increasingly complex and growing framework of Regional Trade Agreements (RTAs); and the dynamic and integrated, but geo-spatially distributed, activities of international production referred to as 'the global factory'[1] [Grunwald and Flamm (1985); Buckley (2003); Bartels (2005)] within which South-South[2] cooperation (SSC) takes place. The international community's support to SSC is based, inter alia, on The Summit of Heads of State and Governments, 14–16 September 2005 [UN (2005)] and its recognition that the rebalancing of the 'centres of gravity' of the world economy can "stimulate South-South cooperation" [UNIDO (2006, p. 1)]. Such sentiment is reflected in the Doha Plan of Action and the Doha Declaration. The provenance for action in SSC can be traced to the 1970s,[3] particularly to 1978, when the Buenos Aires Plan of Action by the Conference on Technical Cooperation among Developing Countries was adopted. Articulation of these and other plans by the developing countries (DCs) was subsequently adopted through the Caracas Programme of Action in 1981. These international efforts, in concert, have brought together, within DCs, measures for capacity-building, increasing trade and promoting technical cooperation in industrialization in favour of economic development in order to achieve the Millennium Development Goals (MDGs).

The internationally competitive environment provides opportunities for South-South trade-induced development, which can create sustainable sources of growth. However, the same environment also generates formidably complex challenges. Given the new industrial realities of spatial (and temporal) distribution in processing, design and marketing of products triggered by trade dynamics, South-South trade-induced growth can pull labour into employment and income-generating activities. However, in terms of convergence, empirical

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1 In this paper, this geo-spatially distributed and geo-economically integrated system of production is referred to as 'the global factory' after Grunwald and Flamm (1985), Buckley (2003) and Bartels (2005) to encapsulate conceptualizations such as global supply chains; global value chains; off-shoring and outsourcing; spatially distributed production networks; production sharing; vertical intra-industry trade (VIIT), vertical specialization and their interlinkages in the form of internationally integrated sourcing, technology, production, marketing and servicing networks, as well as 'third party' logistics, distribution and transportation services.

2 The South herein refers to the developing countries as per the country groupings in the International Yearbook of Industrial Statistics 2007, UNIDO.

3 For example, the Non-aligned Action Programme for Economic Cooperation among Developing Countries in 1972 and the Lima Declaration which was a call for change made in March 1975 when the Second General Conference of the United Nations Industrial Development Organization (UNIDO), meeting in Lima, issued a Declaration and World Plan of Action for the redistribution of world industry so that developing countries would generate 25 per cent of world industry by the year 2000.

evidence does not provide a body of settled conclusions for addressing critical issues of poverty reduction through SSC in industrial development and trade [Durlauf and Quah (1998)].

The rationale for industrial development, trade and hence growth and poverty alleviation through SSC relates to declining real prices for, and loss of, market shares by commodity-dependent DCs in general, and least developed countries (LDCs) in particular. With the exception of hydrocarbons, and certain industrial raw materials, prices for commodities have been on a long-term downward trend and remain at historically low levels despite more recent demand-induced upward changes.[4] The case for SSC in industrial development for economic growth also stems from the regionalism in trade that is characterized by preferential RTAs. When countries of a RTA have similar natural resources, in the absence of policy interventions, they may achieve little diversity in their resource endowments and hence experience limited opportunities for advancing up the manufacturing value added (MVA) ladder.

A wide spectrum of initiatives among DCs, continuing on from those of the 1970s and 1980s, is needed in pursuit of using trade and SSC as responses to the challenge of sustainable industrial development. A division of labour that spurs South-South trade-induced economic and industrial complementation, in terms of the Akamatsu (1962) 'flying geese' paradigm, would seem beneficial. However, SSC cannot take place in isolation from the progressive integration of the global economy under the auspices of multilateral trade agreements that set the 'rules of the game'.

A profile of South-South trade that is emerging, irrespective of the current economic crisis,[5] indicates windows of opportunity for converting relatively static comparative advantages into dynamic competitive advantages through membership in RTAs. Economic growth in a

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[4] See Prebisch R. (1950), and Singer H. W. (1950), for the argument that the price of commodities relative to that of manufactured goods declines over time because: commodities have a relatively low income elasticity of demand compared with the output of other sectors, and hence: (i) the relative price of commodities declines as world income increases; (ii) that technical progress in manufacturing has tended to be raw-material saving, lowering the demand for commodities over time; and (iii) that the pace of productivity growth in the agricultural and mining sectors has been higher than in other sectors.

[5] The OECD Economic Outlook Interim Report of March 2009, p.5, warns that "The world economy is in the midst of its deepest and most and most synchronised recession in our lifetimes, caused by a global financial crisis and deepened by a collapse in world trade."

number of Asian countries bears testimony to poverty alleviation being growth-centric, with export trade acting as the engine of growth. The success of Asian countries in using export dynamic manufacturing for growth and poverty alleviation is inherent to the way those countries have addressed a number of critical issues. An attempt is made in this paper to capture key issues regarding SSC in industrial development.

The rest of this paper is organized as follows: part 1—Trade Agreements and Vertical Specialization—deals with the interplay of RTAs and geo-spatial distribution of industrial production in economic space. Part 2—Key Issues, Opportunities and Challenges—addresses the different dimensions of the policy space, which frames the integration of DCs and SSC in the world economy. Part 3—Concluding Remarks—draws together the threads of industry and trade relations that cohere SSC and development and the role of a multilateral agency such as UNIDO.

1. Trade Agreements and Vertical Specialization

A select group of factors indicate the deepening integration of the world economy. These are in turn framed by a global rule-based trading system that is increasingly articulated through RTAs. SSC is therefore contextualized by the separation of stages of production and vertical specialization in value chains and their geographic distribution in the economic space.[6] The factors are: with increasing globalization, the growth of financial capitalism has outpaced world output growth;[7] growth of vertical intra-industry trade (VIIT) has outperformed that of foreign direct investment (FDI); global trade is dominated by multinational enterprises (MNEs) such that 70-75 per cent of world imports and exports occur within, or between, the organizational boundaries of MNEs; and growth of FDI (at least regarding the twin peaks of FDI in 2000 and 2007 [UNCTAD (2008)]) outpaced that of world trade growth.[8]

These dynamic changes have been cradled by the proliferation of RTAs — growing cumulatively from 25 (1975) through 50 (1982) to 214 (2006). The framework of 158 RTAs

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6 Increasingly trade within South-South economic space is significantly influenced by demand and supply emanating from 'BRICS' (Brazil - agribusiness, Russia - technology, India - services, China – manufactures, South Africa - auto-aerospace and minerals).

7 See Wolf (2007).

8 Approximately 61,000 MNEs with over 900,000 subsidiaries control 70 to 75 per cent international business and world trade [UNCTAD (2004); UNCTAD (1995)]. See also Dicken P. (2003) and UNIDO (2003).

covering goods and services and the 43 RTAs covering services[9] that cradle SSC is expanding at such a pace that by 2010 approximately 400 RTAs could conform the global economic landscape [Fiorentino, Verdeja and Toqueboeuf (2007)]. Notwithstanding the issues of compatibility between RTAs and the multi-lateral trading system rules of the World Trade Organization (WTO), such a framework of RTAs could first enable DCs to increasingly make RTAs central to commercial and industrial policies (as intermediate manufactures and industrial services dominate international trade). Secondly, the increasing sophistication in the design of RTAs involving liberalization, and not restricted to geographically near partner countries, would enable DCs greater degrees of freedom and flexibility, given shrinkages in 'policy space',[10] in shifting towards preferential agreements that provide new trade opportunities within the context of SSC.[11] In other words, increasingly, countries are exploiting RTAs as policy vehicles for gaining access to strategic markets rather than strictly as policy instruments for 'near abroad' regional integration [Schiff and Winters (2003)].

It is within this highly complex lattice of RTAs[12] that the global factory operates to link DCs in production-sharing, thereby leading to the mergence of a new international division of labour in SSC. The global factory is an articulation of the technology function that allows economic activities to be disintegrated, or fragmented, according to cost differences; separated and distributed in time and space; and, through the industrial organization of MNEs, re-integrated innovatively into final goods and services at geographically close distances to customer demand. Consequently, each country's imports and exports are increasingly significant links of value addition in international supply chains. From a policy perspective, the crucial issues are therefore transaction costs and how to reduce them and thus facilitate the regulatory ease of doing business in, and across the borders of, countries [Nordås (2007)].

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9 Thirteen RTAs are accessions to existing agreements and cover both goods and services.

10 'Policy space'—broadly speaking, the freedom at hand for generating policy options, and to set economic policies and calibrate them in the national interest—is increasingly restricted [Levitt (2006); Hamwey (2005); Ayala and Gallagher (2005); Hoekman (2004); Chang (2005a)].

11 There are currently 58 South-South RTAs compared to 65 North-South RTAs. The shift to 'preferentialism' could reorient production away from comparative advantage towards 'competitive preferences' not necessarily open to most favoured nation status. Presently, 84 per cent of all RTAs are Free Trade Agreements (FTAs).

12 The complexity in the configuration of RTAs includes cross-regional forms, overlapping membership, intra-regional forms, and establishment of regional trading blocs made up of several RTAs.

The global factory enables MNEs and different locations in DCs to specialize in specific parts of global value chains and therefore service different geographical markets. For example, the Mexico-United States border contract manufacturing 'Maquilladora' and the Central and Eastern European sub-contracting suppliers, service predominantly their respective regional markets of the North American Free Trade Agreement (NAFTA) and EU-25. In contrast, Southeast Asia services global markets, especially those in electronics and electrical equipment. SSC in this context, well appreciated within the trade environment of South and East Asia,[13] is increasingly influenced by trade flows between China, India and sub-Saharan Africa (SSA) [Broadman (2007); OECD (2006)].

The crucial outcomes of the operations of the global factory are in terms of shares of vertical specializations in world trade, which have been increasing.[14] The South accounted for some 25 per cent of global MVA in 2004 compared to some 14 per cent in 1980 [UNIDO (2006)]. Within this overall dynamic, key players of the South are increasingly important in trade in intermediate goods.[15] Vertical specialization has increased from about 15 per cent (1970) to about 20 per cent (1990) of world trade,[16] and within the value chain, represented by automotive and transport equipment, there are significant opportunities for DCs to upgrade their industrial manufacturing sectors [Humphrey and Memedovic (2003)]. These sectors, and others, referred to in terms of export dynamic products[17] hold the potential for DCs to integrate their economies more efficiently into the global economy [Mayer, Butkevicius and Kadri (2002)].

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13 ASEAN Free Trade Area, ASEAN Investment AREA, ASEAN+3 initiatives with respect to trade in automotive, transport equipment, electronics and electrical intermediary products.

14 According to Nordås (2007) while it is not possible to measure directly vertical specialisation, proxies such as intermediate products signal the volume and value of international production sharing (IPS). The increase in IPS ranges from 16 per cent to 20 per cent for Canada, 13 per cent to 22 per cent for the United Kingdom between 1974 and 1993. In 2004, shares of intermediate non-fuel merchandise exports (and imports) were respectively for the United States 53.9 per cent (39.7 per cent), Japan 52.6 per cent (42 per cent) and Germany 47 per cent (47.8 per cent).

15 For example, Nordås (2007) indicates that in 2004 the shares of exports (and imports) were respectively for Brazil 42.1 per cent (67.2 per cent), China 37.7 per cent (61.8) and South Africa 59.7 per cent (40.8 per cent).

16 See David L. Hummels, Jun Ishii and Kei-Mu Yi (1999).

17 These products categories have relatively high absolute shares and high growth rates in their shares of world trade.

The world economy is globalized in terms of finance capital [Wolf (2004)]. However, from a trade perspective, it is dominated by regionalism in which VIIT is executed within the organizational boundaries of MNEs.[18] The regional nature of trade in goods and services, and therefore SSC, is shown not only by the emergence of TRIAD[19] 'centred trading blocs', but also by the patterns of exports and imports. According to Nordås (2007), for auto and transport equipment, NAFTA, Japan and the EU-25 dominate trade with the United States with shares ranging between 10 and 50 per cent respectively. With respect to Japan's trade, NAFTA, NICs-8[20] and EU-25 are important regions. As is expected, the EU-25 trade pattern is dominated by EU-25 and NAFTA. With respect to SSC, Brazil's trade is dominated by Latin America, NAFTA and EU-25, whereas China's trade pattern is conformed by NICs-8, Japan and NAFTA. In contrast, South Africa's trade in VIIT is dominated by EU-25, NAFTA and SSA.

So while global trade continues to be patterned predominantly by transatlantic and transpacific flows, South-South trade flows accounted for 46 per cent of the South's total trade in 2003, compared to 39 per cent in 1995. According to UNIDO (2006), South-South export flows expanded at about 7 per cent per annum during the 1995 to 2003 period. However, the distribution of this growth over the South is skewed to the DCs of Asia.[21] An examination of the evolving pattern of manufactured exports between 1995 and 2003, in terms of technology intensity as a share of total exports, demonstrates that East Asia leads with upward changes from 90 per cent to 93 per cent of manufactured exports in total exports; and 50 per cent to 60 per cent of medium- and high-technology (MHT) exports in total exports. In sharp contrast, for SSA the respective changes have been declines from 52 per cent to 44 per cent; and 15 per cent to 10 per cent. This represents losses in both transactional capacity (exporting) and transformational industrial capability (innovation and

[18] Due to the increasing prevalence of off-shore outsourcing, the economic boundaries of the firm are increasingly 'fuzzy' or porous and subject to contractual relationships between firms.

[19] The TRIAD refers to the economic space of North America, Europe and Japan.

[20] Hong Kong (Specially Administered Region of China), Republic of Korea, Singapore, and Taiwan Province of China, as well as Indonesia, Malaysia, Philippines and Thailand (in two successive waves of industrialization).

[21] This arises from the path dependent development trajectory in which there have been successive waves of relocation of production to Asia in the 1970s and 1980s, followed by relocation of services (once they become increasingly tradable) in the 1990s.

value adding in MHT).[22] All other South regions have improved their performance in these two categories.[23]

A sharper focus on South-South trade in industrial manufactures shows the dominant role of East Asia in both transactional capacity and transformational capability. Over the period 1995 to 2003, East Asia exported manufactures valued at US$659 billion to the South thus changing its share of resource-based and low-technology trade by some 2 per cent, but by some 17 per cent in its share of MHT trade. All other regions of the South experienced either zero or close to zero change in their share of MHT trade.

The key implication from this pattern is that, despite the increasing technological nature of manufacturing and growth of world trade, and the spatial distribution of stages of production, DCs in general do not appear to be developing, at a sufficient pace, the requisite industrial policies that will ensure their future ability to add value to industrial transactions and transformations at accelerated rates. Therefore, it is no wonder that Nordås (2007, p. 1) states "if developing countries are to gain market shares in industries where vertical specialization is important, they may need to reduce trade costs more than developed countries."

In terms of intra-regional manufactured export trade, again East Asia dominates the South-South picture. During the period 1995 to 2003, while East Asia changed its share of resource-based and low-technology trade by some 4 per cent, it changed its MHT share by 22 per cent. In contrast, other regions of the South experienced either zero or negative changes.[24]

South-South trade co-operation is driven and lead by East Asia in terms of intra-regional trade, which in turn is dominated by VIIT, especially in product classifications with high value to weight ratios. Thus, East Asia trades more with itself in its global factory of MHT

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[22] With increasing attention to energy and industrial metals demand from China and India, South-South trade cooperation should witness positive changes, over time, regarding exports shares across resource-based, low technology and MHT industries in Africa and elsewhere in the South notably Latin America.

[23] One exception is the Middle East and North Africa, which experienced a slight drop from 18 per cent to 17 per cent in the share of MHT exports in total exports.

[24] South Asia improved its share of resource-based and low technology exports within the South by 5.5 per cent and its MHT trade share by 2 per cent while the Middle East and North Africa changed by 1 per cent its resource-based and low technology exports.

vertical specialization than it does with other regions of the South[25]. South Asia and SSA, on the other hand, trade more with other South regions in resource-based and low-technology products than they do within their own regions.

The implications for upgrading the nature of South-South trade lie in generating progressive abilities in the industrial structures of the South. Through a 'thickening' of South suppliers' bases, East Asian firms will increasingly be incentivized by different, but competitive, productivity-adjusted cost structures (especially of labour) to increase their off-shore outsourcing to locations in the South (other than the Asian region). With respect to RTAs, there are few examples of African-Asian countries' involvement.[26]

With respect to product categories in South-South trade, as would be expected, and reflecting global patterns, South-South trade is most dynamic in MHT products (albeit skewed in terms of sources and destinations). In 2003, out of the ten highest ranking trade values, only hydrocarbons and textile yarn represented nominally resource-based and low-technology products. The policy implications point to industrial policy involving the configuration and calibration of the system of incentives to encourage industrial upgrading. This would enable promising local companies in the South to become progressively low-, then medium- and then high-technology component suppliers to the global factory of East Asia. This requires capacity-building and South-South technology exchange through FDI vehicles of international joint ventures, for example.[27] Additionally, progressive domestic investment in the South is required to enable transaction costs to be minimized.[28] As indicated above, within South-South trade, among the most dynamic products (but nominally resource-based and low- technology) is cotton and textile yarn. Again, East Asia dominates the pattern of industrial trade. According to UNIDO (2006), whereas East Asia's cotton exports between

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[25] See Sundeep Tucker on Asian developments, "Asia seeks its centre", Analysis, Financial Times, 6 July 2007.

[26] Exceptions to this are India-SACU; Singapore-Egypt currently under consideration; and India-Mauritius [Fiorentino, Verdeja and Toqueboeuf (2007)].

[27] International joint ventures can be configured to maximize efficiently the local embedding of externalities. Thus the learning effects of, and outcomes from, international collaboration are better captured for local applications at a faster rate than would normally be expected.

[28] See Goldstein et al. (2006) for concerns that, despite windfall revenues accruing to commodity exporters in the South, insufficiently well-configured policy (modal neutrality, market contestability and policy coherence), associated instruments and incentives will continue to lock some developing countries into exports of raw materials, thus restricting their ability to move up the manufacturing value ladder.

1995 and 2003 was over 90 per cent in the form of yarn, those for SSA declined from about 5 per cent to 2 per cent, and the Middle East and North Africa from 54 per cent to 43 per cent.[29]

2. Key Issues, Opportunities and Challenges

The increasing specialization in world trade and globalization presents opportunities for greater SSC along a number of fronts, including complementarity in using comparative advantage, as well as preferential agreements for industrial structural change, and hence ultimately for socio-economic development. However, a number of serious challenges remain. For one, the benefits of liberalization need to be nested in low transaction costs of doing business. Secondly, the current state of the Doha Round carries implications for the proliferation of RTAs—and their complexity[30] [Schiff and Winters (2003)]—as they may by-pass the multilateral trade negotiations. New opportunities for SSC would need to address a number of key issues.

2.1 Employment insensitivity to growth

Changes triggered by liberalized South-South trade are likely to change production patterns. The emerging pattern of production increasingly demands mobility of labour that is equipped with enhanced skills and technical knowledge. However, free movement of labour across manufacturing activities hinges on a number of interrelated factors. Knowledge and skill flows are more efficient when facilitated by worker mobility to industries that are similar to their industry of origin as measured by input-output flows between industries [Saxenian (1994)]. It is thus contended that workers are conduits through which knowledge is transferred across firms. This in turn leads to significant increases to total factor productivity and hence wage gains.

At the efficient production frontier, it is generally assumed that high employment and high growth environment workers with accumulated knowledge and skills can usefully be deployed, without transaction or friction costs, from declining industries to rising industries, in a way that leads to optimal allocation of labour. In contrast, in high unemployment and

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[29] More recent UNIDO analysis (2007 yet unpublished) shows that SSA has increased its share of cotton and yarn in total exports from 2.5 per cent (1995) to 4.2 per cent (2004) at US$0.84 billion although with only US$18.87 million in MVA. In contrast, China's performance, in terms of yarn, has changed from 15 per cent to 25 per cent as share in cotton related exports.

[30] In several cases, such overlapping RTAs lead to contention in terms of harmonizing customs regulations, rules of origin, and negotiations to reduce tariffs and non-tariff barriers.

slow growth environments, even workers with accumulated knowledge and skills may face limited labour mobility, and employment might be insensitive to growth. In the absence of specific policies that reduce the transaction costs of deploying labour to correct system failures, labour is unlikely to respond to the changing facets of production systems as elaborated above.

2.2 Technology, knowledge, skills, information, innovation, R&D and networking-driven industrialization to reshape comparative advantage-based production

A recent study [Sanguinetti et al. (2004)] points to empirical evidence regarding preferential trade liberalization in MERCOSUR countries that favours a reshaping of manufacturing production according to regional comparative advantage in labour and technologically-skilled labour during 1985-1998. Drawing on this experience, a number of inferences can be made and implications drawn for SSC in trade, which may suggest comparative advantage based on reshaping of industrial production, given the policy incentives, *ceteris paribus,* namely:

- Industries that use agricultural inputs intensively tend to locate in countries with a large endowment of arable land;[31]
- Labour-intensive industries tend to locate in countries that are relatively labour abundant (in terms of productivity-adjusted cost of labour);
- Industries that intensively use skilled workforce tend to locate in countries relatively well endowed with technologically-skilled labour; and
- Industries which rely highly on industrial intermediate inputs tend to locate in countries with a large or 'thick' industrial base thus ensuring better access to relevant and broad-based suppliers.

However, increasingly, industrialization patterns are driven less by comparative advantages of resource endowments and more by knowledge, technology, skills, research and development (R&D), revealed technological advantage and innovation-intensity skills that are networked to convert static comparative advantages into dynamic competitiveness within RTAs.

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[31] See Blas (2009) and Cotula et al. (2009) for recent developments in agricultural investments and international land acquisitions and deals in Africa in the interests of food security that indicate the dichotomous economic development characteristics of SSC in the acquisition of arable farmland in developing countries.

2.3 Global integration as a prerequisite for enhanced South-South trade

Manufactured exports in South-South trade have increased significantly from 58 per cent in 1990 to 64 per cent in 2001 [Economic Analysis Unit (2004)]. One of the fastest growing export products in South-South trade between 1990 and 2001, accounting for around half of manufactured exports is office and telecommunication equipment growing at an average annual rate of 18 per cent during 1990-2001, followed by automotive products (17 per cent), and machinery and transport equipment (16 per cent). The manufacture of all these products is spatially distributed and therefore, by definition, benefits significantly from global connectivity.

While global integration is critical for keeping DCs connected to the new industrial realities, there appear mixed research findings on global integration with respect to the sources of creating improvements in domestic capability. Building advanced domestic capabilities constitutes the key to learning, innovation and competitiveness.[32] In this regard, FDI is generally expected to bring in advanced skills, know-how and technology that can be transferred to the host country by setting up training facilities, *inter alia*. Notably, during their developmental path, countries such as the Republic of Korea and Taiwan, Province of China, have developed advanced indigenous capabilities despite—but also precisely because of—restricting initially the entry of foreign firms through low modal neutrality.[33] A policy array of licensing and tapping experiential knowledge from local employees serving in MNEs and domestic capabilities developed from local initiatives to facilitate learning and innovation became the basis for the development of local firms. However, the shrinking policy space presents challenges to other DCs in replicating the policy successes of the 1970s and 1980s.

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[32] FDI, joint ventures, licensing, original equipment manufacturing, original design manufacturing, original brand manufacturing, subcontracting, imports of capital goods, franchising, management contracts, marketing contract, technical service contract, turnkey contracts, overseas training, overseas acquisition of equity investments, strategic partnership or alliances for technology, contracts for R&D to other companies, research grant consortia, bilateral cooperative technology agreements, buying technology embedded in products, material sub-assembly or process are various channels of technology transfer and adaptation dependent on domestic capacities and capabilities.

[33] Modal neutrality refers to investment policies that leave the decision on the best way(s) to serve foreign market(s), in terms of entry mode, up to the investor (high modal neutrality) rather than the host government (low modal neutrality). Related to this concept are contestability which refers to the legal ability of foreign as well as domestic investors to compete for the same input factors of production and policy coherence which signifies the degree to which development objectives, the FDI regime and interpretation of that regime, in its regulatory form, has internal consistency across business functions, at different levels of Government and in different places in the country.

The extent to which FDI can 'crowd in' through local linkages, upgraded technology and enhanced local capabilities depends on the configuration of trade and competition regimes, the policies for foreign firms, MNEs corporate strategy and the responsiveness of local factor markets, as well as the calibration of the national institutional framework towards development.[34] The key challenge to DCs is improving their global integration through enhanced domestic capability-building. In the absence of budgetary resources that most DCs face, this becomes a question of hard policy choices.

2.4 Bridging the gap between corporate profitability and social misery

Agricultural products account for 11 per cent of South-South trade in merchandise exports but with relatively low growth rates, ranging from 3 per cent to 7 per cent between 1990 and 2001. The relatively poor performance is largely due to declining terms of trade, trade barriers and, to some extent, the shift in DCs' demand for manufactures. Growth in South-South trade has been in manufactures rather than agricultural goods — and apart from one or two examples, the development of value-added agri-business has been truncated.[35] Generally, it is the poorest developing countries, particularly those in Africa, that have been missing out because of their continuing dependence on low value-added agricultural processing that is limited in its progress up the value chain. The issue of MNEs profitability, while primary producers face price volatility, is cause for deep concern. Since the 1980s, the terms of trade for many DCs have hardly changed.

Can South-South trade in semi-processed intermediate agro-industry goods for further processing into final agri-business products be enhanced for higher incomes to primary producers and thereby bridge the gap between corporate profitability and social misery?

2.5 Intra-industry trade across developing countries

The extent and level of VIIT is limited among South economies relative to that of East Asia and the industrialized economies. This implies that for trade with high-income countries an absorptive capacity that entails learning effects, knowledge and technology spillovers which, in concert, lead to higher productivity growth is necessary but not sufficient. The sufficiency

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[34] Policies have to be configured and calibrated and re-calibrated and re-configured in time and space according to competitive dynamics.

[35] See Financial Times (2005) for the example of Brazil's agri-business industry.

condition is provided by an appropriate framework of policy instruments that encourage VIIT. For developing countries with similar factor endowments, intra-industry transactions should evolve into more specialization in global value chains [Otsubo (1998)]. Long-term empirical evidence points to trade in similar but differentiated products [Linder (1961)].

However, in terms of convergence in income levels, Durlauf and Quah (1998) indicate an emerging bi-modal cross-sectional income distribution, which suggests that economies are 'self-organizing' into two distinct groupings of rich and poor.[36] The Linder (1961) thesis suggests that developments in per capita income, the extent of the market and similarities in the demand structure are prerequisites for growth in the intra-industry segment of trade flows. Markets large enough for differentiated products that facilitate economies of scale and some degree of maturity in consumer tastes for similar (resource-based) differentiated products seem to facilitate intra-industry trade.

Given varying degrees of industrialization and levels of income across DCs, the scope for VIIT among DCs seems limited, with the exception of East Asia. From the policy perspective, what is needed for policy craft would seem to involve: a clearer identification of labour-intensive products capable of being technologically intensified in VIIT for the selective incentivization of their source sectors; analysis of product-specific value chains to unveil viable participation in value chains by DCs; and identification of specific dynamic locations in the South that can effectively participate in VIIT.

While tariff rates have been declining through trade negotiations, some countries have tariff averages of more than 40 per cent. Some DC tariffs are often higher on products that other DCs are likely to export, and around 70 per cent of the tariffs faced by DC exporters are applied by other DCs. This constricts opportunities for VIIT and specialization in the global factory.[37]

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[36] See Uwe Cantner, Andreas Pyka and Jens J. Krüger (1999), which indicates that the most recently observed stylised facts in economic growth is the persistent bimodal shape of the world income distribution. While innovation and technology are the driving forces behind the growth process, this presupposes a rationally acting representative agent. However, an evolutionary economic approach indicates that movement from one level to the next higher one is governed by stochastic transition rates. The motivation for these transitions is founded on the knowledge-based approach of evolutionary economics. This model demonstrates that a persistent bimodal distribution—the twin peaks—endogenously emerges via self-organization.

[37] See Mills (2006); and Kraus (2006).

DCs may realize gains worth some US$45 billion annually were they to eliminate their tariffs on manufactures, and some further US$30 billion annually if their barriers to agricultural trade were to be eliminated.[38] Tariff peaks on industrial products seem most prevalent in textiles, clothing, footwear, leather goods and transport equipment. As about half of the DCs' exports of textiles are destined for other DCs, and a fifth of their exports of clothing go to other DCs; and as the components of a car, personal computer or television set are produced in many different countries, the more DCs maintain high barriers to trade with other DCs, the greater their marginalization from global production chains.[39]

2.6 Ensuring efficient facilitating financial services for SSC

Despite the sophisticated development of global capital and financial markets, in the general absence of efficient sources of financing, the transaction costs of South-South trade will continue to be relatively high and barriers to trade will tend to increase. The development of financial services is required to address the issue and support trade finance infrastructure for South-South trade. South capital and financial markets that enable a network of export credit agencies, efficient payment and credit guarantee arrangements, and local banks that support trade capacity-building institutions are options for policy consideration.

In the context of VIIT, if high import intensity of exports evolves among DCs, vulnerability may stem from imports being financed by short-term debt and without 'deep' capital and financial intermediation shocks, such as the East Asian financial crisis, could again occur.[40]

2.7 South technology - tradability, adaptable, profitable and pro-poor?

The South needs to ensure technology development in general, and sustainable energy-related technology in particular, in order, *inter alia*, to enhance rural growth. The adaptation of technology by production systems is crucial as it enable countries to grow relatively fast due to the inherent advantages of more recent vintages of technology along with adaptation and investment in human resource development and R&D. Transfer of technology-related

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38 See Fernando Alvarez and Robert E. Lucas (2005) for the determinants of the cross-country distribution of trade volumes: size, tariffs and distance for the largest 60 economies in order to estimate the gains of a world-wide trade elimination of tariffs.

39 However, eliminating tariffs for DCs is not an easy matter. See Ha-Joon Chang (2005b).

40 See Giles (2007).

services, the promotion and dissemination of innovations are factors that will help to reduce poverty.

Technology creators and innovators expect a premium reward for creating technology. This leads to a strong patenting regime. Robust intellectual property protection and its patenting regime are necessary to ensure adequate rewards to inventors and innovators and also help to finance future research in technology development. However, as patenting increases the cost of technology it remains far from the reach of the poor. In any case, without counteractive policies, several countries in the South will find it difficult to adapt new technologies because of the lack of technologically-skilled manpower and low quality of supporting infrastructure.

A critical question is: Is South technology tradable? Inherent in globalization are economic trading blocs and preferential agreements linked through the global factory. When trade is restricted through tariff barriers and control of trade in technology, positive externalities through the development and dissemination of technology are constrained. To ensure tradability of South-South technology, it is imperative that the technology be differentiated according to the skill levels of developing economies.[41]

2.8 Efficient means of private sector acquisition of technology

The issue remains that while there are many sources of technology in the South, due to lack of widespread and 'deep' capital and financial markets, manufacturers in the South are generally unable to access financing easily for acquiring, or developing, technologies. Most technology financing is done through the private effort of entrepreneurs. This implies policy conditions that recognize the importance of deepening the capital and financial markets of DCs and enabling them to intermediate between entrepreneurs and the market.

2.9 Networking for collective acquisition of technology

Since the South lacks integrated markets with demographic characteristics of relatively large volumes and high purchasing power, joint acquisition of technology and manufacturing networks should feature increasingly on the policy agenda. However, even acquiring

[41] To ensure tradability of technology within the South thorough needs assessment of technology is required. This should ensure that the technology exploits the natural resource endowment of DCs. Institutional mechanisms should enable the upgrading of manpower skills and the manufacturing of equipment. A critical issue relates to the challenge of financing technology acquisition on soft terms.

technology jointly may not solve fully the technology dependency of the South. Domestic R&D capacity can create long-term sustainable development given an appropriate incentive system. Investment in R&D and technology development involves high risk, uncertainty of outcomes and high costs. Lack of widely available scientific manpower hinders the process.[42] Since many countries of the South cannot invest in high-end R&D efforts on their own, policy instruments for joint R&D should be crafted.

2.10 Free trade in technology-related services

Technology-related services emanating from R&D centres, laboratories, workshops, information technology, manpower training, marketing agencies, consultancy firms, etc., play an important role in the technological development of a country. While it is relatively easy to acquire modern technologies through licensing and royalty fees, it is very difficult to maintain such technologies without related service providers. It is essential that technology service providers be developed in the South. Free movement of such service providers is crucial in ensuring overall development and should be encouraged. It is increasingly realized that free trade in technology-related services creates positive spillover effects. To ensure that a country is able to attract technical manpower and technology-related service providers, barriers to labour mobility need to be reduced among DCs.[43]

2.11 Commercializing innovations to serve rural growth within SSC

A very significant proportion of the global population is marginalized from technological advances.[44] It is not an exaggeration to indicate that billions have little access to the most basic services. If technical change lies in the heart of economic growth, its impact should reach the grassroots in terms of sustainable livelihoods. Food security and livelihood sector-related initiatives, based on the economic precept that poverty can only be alleviated by creating sustainable livelihoods and improved quality of rural life, *inter alia*, entails

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[42] More African engineers, scientists and technicians work in the United States than in all of sub-Saharan Africa. More than 21,000 Nigerian doctors practice in the United States. Approximately 18,000 nurses from Zimbabwe are overseas. According to the Arno Tanner (2005), Africa lost approximately 60,000 professionals between 1985 and 1990. According to IGCS Binghampton University Newsletter 2004-05; Kaba (2004-05), about 10 million Africans reside abroad, mostly in the EU and North America; an estimated 5 million African entrepreneurs and professionals, and 40 per cent of African managers reside outside the continent.

[43] This is not withstanding the challenge of uncontrolled migration pressure as a result of a number of dynamic factors including the break-down of civil society [see the July/August issue of Foreign Policy (FP) 2007].

[44] See Collier (2007).

enhancing agricultural productive capacities, promoting agro-processing for income creation and employment generation, reducing post-harvest losses, and using local sources of renewable energy.

Mechanisms for the recognition of local scientific knowledge need to be created.[45] Innovations that serve as rural growth impulses need to be promoted. Such innovations, once properly promoted, could lead to increasingly efficient production systems. However, to promote such innovations, it is necessary to ensure that innovators reap economic rewards through commercialization of such inventions. South-South cooperation in trade can serve as a catalyst for facilitating the use of innovations and the commercialization of existing research findings and innovations.

2.12 The rise of the 'BRICS[46] – centrifugal forces in South-South trade?

As one of the world's most dynamic economies, the industries of which are the engine of growth, China can serve as a source for strengthening SSC in trade. India is also building robust strategic and economic partnerships. Predictions on the rise of China and India in terms of the world economy imply that DCs can benefit from the emergence of BRICS as major economic powers.

China has become India's second-largest trading partner. Bilateral trade touched some US$13.6 billion in 2004, up by 79 per cent over the total trade volume of 2003. India enjoyed a comfortable trade surplus of US$1.75 billion, according to Chinese customs statistics. If growth remains at current levels, India-China trade could soon cross US$17 billion.[47] China is currently a major trading partner of Brazil as well.[48]

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45 With respect to local scientific knowledge developed through centuries of practice, for example, the use of local herbs or different type of farming techniques identifying the knowledge, recording the process, and highlighting the benefits in terms of costs, adaptability in different conditions, recognizing existing practitioners and disseminating information could lead to building higher levels of institutional awareness among the scientific communities in the South.

46 Brazil, Russia, India, China, and South Africa.

47 See "China, India: Rule Global Tech?", Associated Press, 4th October 2005.

48 See Macauhub (http://www.macauhub.com.mo/en/news.php?ID=3612) regarding China trade to the Brazilian market of the value of US$5.2 billion between January and June 2007 (50 percent more than in the same period of 2006), while Brazil sold US$4.9 billion to China (rise of 34 per cent). China is Brazil's third-largest trading partner, still behind the United States (US$20.7 billion).

As BRICS emerges as fast-growing economies and major trading partners, the impact across DCs may be quite uneven. In this context, recent studies [Broadman (2007); OECD (2006)] on the effect of China and India's growth and trade liberalization on poverty in Africa merits attention. The emergence of accelerating energy and commodity demand from China and India poses opportunities as well as challenges in terms of complementary and competitive effects. Exports from African countries to China and India should have a significant positive impact, given coherent pro-poor policies. However, competitive imports from China and India, while increasing choice targets for the disposable income of the urban poor, could also put pressure on low-end manufacturing activities to become more productive or face the prospects of going out of business with attendant impacts on employment.

2.13 Global trade negotiations and SSC

DC delegations in multilateral trade negations have become adept at forming coalitions. However, there seems to be little evidence of those coalitions accelerating South-South trade across the board. The basic principles of the GATT/WTO system: most favoured nation; and treating all products that have entered partner territory on parity, while sound, have not been sufficiently powerful with respect to the agricultural sector which is the principle source of livelihood for the poor in DCs. It is in this sector that signatory countries find it difficult to make concessions regarding the progressive reduction and eventual eradication of subsidies.[49] Two other issues are related to the agreement on trade-related aspects of intellectual property rights (TRIPS) and the system for settlement of disputes in the WTO which has presented several difficulties for DCs [Zejan and Bartels (2006)].[50]

2.14 Industrialization and SSC to alleviate non-income poverty

The MDGs—benchmarks for progress—in a global attempt at alleviating poverty, articulate eight goals, 18 targets and 48 indicators that form a complex set of effects that are the fundamental cause of poverty.[51] Poverty can be broadly classified into income poverty and

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[49] This is partly due to the differentiated pace of, and frictions in, the structural change from rural to urban economies in the North and South.

[50] There is an argument that initiating trade disputes may adversely affect the amount of ODA received. Furthermore, it could be argued that TRIPS has affected the non-availability of affordable pharmaceutical products. Though trade negotiations stalled in Doha and Cancun, a consensus among the countries of the South has emerged with the formation of Group 21 to deal with concerns not adequately addressed. This entails necessarily greater cooperation among DCs.

[51] Poverty-related issues encompass hunger, disease, child mortality, gender bias, and environmental degradation, etc. Hunger and malnutrition are in part responsible for low productivity and low incomes.

non-income poverty. Non-income poverty in terms of lack of education, health-care, etc., directly produces income poverty. The two types of poverty are mutually reinforcing. How to raise populations out of non-income poverty is a formidable challenge. Empirical evidence [UNIDO (2004)] points to a number of fundamentals: non-income related factors, such as primary education and good health, serving as necessary pre-conditions for achieving the MDGs. SSC, in the spheres of industrialization and trade, can contribute to the alleviation of non-income poverty across DCs.

Concluding Remarks

First, the opportunities in the complexity of international cooperative arrangements are difficult for DCs to take advantage of partly because of the shrinking 'policy space' and partly due to the challenges of formulating industrial policies that can successfully capture the positive externalities of SSC in terms of FDI, trade and technical cooperation. Secondly, asymmetries in the patterns of South-South and intra-South trade, presently dominated in volume, value and technological intensity by East Asia, are likely to persist in the absence of aggressive competitive policies that change industrial structures over the medium term. Thirdly, the 'flying geese' paradigm provides policy lessons for the African and Latin American regions.

Economic development remains a generational phenomenon that is concentrated in time and space; and universal and equally distributed returns to investment remain outside the majority of policy frameworks. In a similar vein, SSC is likely to promote benefits of integration and production-sharing asymmetrically. The challenge for heavily disadvantaged and marginalized DCs is to craft policies that maximize positive externalities from the robust growth of, and demand from, BRICS.

The central question of how to foster industrial complementation in the South remains. There are several examples from Asia of industrial complementation schemes.[52] The process of

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Lack of education leads to misunderstanding of hygiene and health care, high birth rate and child mortality, and poor maternal health.

[52] See ASEAN, China and India: Comparative Economic Performance, Issues and Implications, ASEAN Secretariat, Studies Unit Paper No. 09-2006, November. See also the ASEAN Economic Community with respect to mechanisms and measures to strengthen the implementation of the ASEAN Free Trade Area (AFTA), ASEAN Framework Agreement on Services (AFAS) and ASEAN Investment Area (AIA) as well as regional integration in priority sectors by 2010 (air travel, agro-based products, automotives, e-

industrialization is less driven by resource endowment and more by technology, knowledge, adaptive capabilities, skills, information, infrastructure, networking, R&D intensity and, above all, innovation. It is increasingly realized that industrial integration of DCs can be achieved by increasing the flow of non-resource-related factors. Industrial complementation schemes can be made more successful in the South by dovetailing technological capabilities and related knowledge, skills, information, R&D and innovation across firms with relevant institutions.

Reinforcing UNIDO's role in enabling DCs to enhance their transformational capabilities and increase transactional capacities, the UNIDO International Technology Centres play a catalytic role in translating technology into business opportunities and new industrial investments. Integration of the work of UNIDO's Technology Centres with investment promotion activities has expanded significantly the efficiency and effectiveness of investment and technology promotion services. For example, the International Centre for Advancement of Manufacturing Technology, established in October 1999 in India, assists in diffusing new manufacturing technologies and practices in DCs and enhances the manufacturing capabilities of industries through SSC. In addition, SSC is reinforced through the Asia-Africa Investment and Technology Promotion Centre in Malaysia to foster the development of business alliances. The International Materials Assessment and Application Centre in Rio de Janeiro is intended to provide an international forum to address the effective management and utilization of materials resources. With the assistance of the International Centre for Science and High Technology in Italy, policy makers, researchers and entrepreneurs from DCs are exposed to international best practice.

These International Centres are networks of industrial R&D institutes, technology centres, universities, and in turn are linked to professional industrial associations. The industrial surrounding of the Centres and their networks provide the opportunity to ensure that the work programmes continuously reflect, and respond to, local industrial needs. UNIDO has also established Investment and Technology Promotion Offices that support the transfer of technology and investment from the countries of establishment to other developing regions.

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commerce, electronics, fisheries, healthcare, rubber-based products, textiles and apparels, tourism, and wood-based products); and institutional mechanisms for the improvement of the existing ASEAN Dispute Settlement Mechanism.

In addition, UNIDO provides technical assistance to DCs for establishing and operating Subcontracting and Partnership Exchanges. UNIDO is active at regional and country levels with a Technology Foresight Programme that enables governmental authorities to have at their disposal a Decision Support System enabling them to take better and more informed development decisions.

UNIDO supports the setting-up and upgrading of national and regional standardization bodies, assessing existing physical and human resources, cost effectiveness and management practices, and drawing up programmes to develop and improve capabilities and capacities. It encourages standardization bodies to form networks and join appropriate regional and international standardization institutions so as to improve cooperation. It also assists in establishing partnerships among national bodies to improve information exchange on standards and management practices. Furthermore, UNIDO helps networks formulate regional initiatives to harmonize members' activities. UNIDO established an International Centre for Small Hydro Power in Hangzhou, China, dedicated to facilitate technology transfer of small hydropower to DCs jointly with the Chinese Government.

These concerted efforts can lead to enhanced SSC and industrial innovation systems that enable exchange and sharing of manufacturing process technology, product development and application know-how, R&D facilities and appropriate training services, and joint manufacturing of a product using the principles in the economic division of labour.

SSC in industrial development and trade can be more meaningful and practical, if new knowledge is generated by the knowledge-based institutions of DCs, exploited by laboratories and institutions and commercialized by dynamic firms in an interactive manner with small and medium enterprises playing key roles.

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