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**Services, development and trade: the regulatory
and institutional dimension**

Note by the UNCTAD secretariat

Executive summary

This note discusses regulatory and institutional frameworks (RIFs) for infrastructure services sectors (ISS) – telecommunications, transport, energy, water – and financial services. Vibrant ISS can catalyse economic diversification and enhance domestic supply capacity and competitiveness, while providing opportunities for employment, investment and trade. They are also essential for human development and the attainment of the Millennium Development Goals (MDGs), particularly poverty reduction. The note seeks to explore ways in which developing countries develop their ISS through various RIFs options, including by presenting national experiences. Particular attention is devoted to the financial and energy services sectors in view of specific challenges relating to the financial and economic crisis and climate change.

Introduction

1. The efficient operation and expansion of infrastructures is fundamental for economic growth, development and poverty reduction. Despite significant efforts, progress in building solid ISS in developing countries, particularly least developed countries (LDCs), remains variable and incomplete. Various ownership models, involving state-owned enterprises (SOEs), the private sector, or mixtures of both (such as public-private partnerships (PPPs)), have been tried but robust RIFs also have an important role to play. In this context, governments assume particularly important function as an enabling and developmental state. Policymakers face the challenge of establishing policies and RIFs best suited to countries' local conditions and development imperatives to safeguard fair competition, adequate investment levels, equitable pricing and universal access, quality services and consumer protection. In this respect, policy makers cannot solely adopt a sectoral approach. Trade, industrial, services and macroeconomic policies need to be carefully tuned to achieve the desired combination of goals associated with the development of ISS. Significant time, financial and human resources, technology and skills are also required in designing and implementing adequate RIFs. Moreover, international regulatory and trade cooperation will likely play an important role in support of national efforts to create effective, efficient and workable RIFs in developing countries.¹

I. Trends

2. In recent years, the global demand for ISS has expanded rapidly in response to growing population and climbing income levels, particularly in developing countries. The combined annual revenue of these services was \$14.5 trillion, or 24 per cent of total world gross domestic product (GDP) in 2008. ISS also represents an important source of job creation accounting for 9.3 per cent of worldwide employment in 2008. Through strong backward and forward linkages, they provided for additional employment opportunities in related sectors.

3. ISS are also important in international trade. Trade in ISS accounted for over 35 per cent of global services trade, with transportation representing 22.5 per cent, finance 10.2 per cent, telecommunications 2.3 per cent and electricity and water over 2 per cent in 2007. From 2003 to 2008, annual average growth of exports in transport and telecom was 16 per cent, and 21 per cent in financial services, while overall world services exports grew at over 15 per cent annually. South–South trade in services made up 10 per cent of world services trade, South–South transport exports represented 8.5 per cent, other commercial services exports 15 per cent and travel exports 16 per cent of the respective totals.

4. Foreign direct investment (FDI) in ISS was also increasing rapidly approaching \$4.4 trillion or about 7 per cent of global GDP in 2007.² Electricity, water, telecom and transport each require from \$200 billion to \$300 billion of capital investment annually. UNCTAD estimates the amount of FDI directed to ISS in developing countries, including on a South–South basis, to be about \$100 billion. South–South flows have begun to play a significant role in financing infrastructure projects, particularly in sub-Saharan Africa. Chinese financial commitments to African infrastructure alone totalled \$4.5 billion in 2007 with a large proportion targeting hydropower and rail projects. Combined investments of China, India and the Gulf Cooperation Council (GCC) countries represented one fourth of total

¹ UNCTAD (2009). *Services, development and trade: the regulatory and institutional dimension*. TD/B/C.I/MEM.3/2.

² UNCTAD (2009). *World Investment Report*.

infrastructure investment in Africa in 2007. Official economic assistance flows from developing countries into sub-Saharan Africa were comparable to official development assistance from Organization for Economic Cooperation and Development countries and to inward capital from private investors.

5. Many developing countries continue to face a substantial infrastructure deficit. In sub-Saharan Africa, investments of \$7 billion annually are required in water and sanitation services alone, well above current levels of \$800 million. Requirements for improved electricity, telecommunication and transportation services are comparable or even larger.

6. The current economic and financial crisis has halted the positive progress achieved in ISS and reversed progress towards meeting the MDGs. Investments in ISS are put on hold. The crisis has resulted in reduced trade in ISS as a result of diminished levels of output and consumption, restricted access to credit and trade finance, as well as reduced public revenues. If the recession is prolonged, the output, revenue and profits in the sector could further spiral downwards, leaving ISS firms and consumers at risk. The International Energy Agency estimates that global energy consumption fell by 3 per cent in 2009, the steepest drop in the last 40 years. The International Road Transport Union projects that in 2009 international road freight transport output will fall by over 20 per cent. The International Air Transport Association expects air passenger traffic to decline by 4 per cent and air cargo by 14 per cent in 2009. The maritime shipping sector – facilitating over 80 per cent of world merchandise trade – has stopped growing. In the first six months of 2009, global container shipment volumes declined by 16 per cent.

7. From January to September 2009, total service exports decreased on average by 9 per cent in the euro area, by 11 per cent in the United States and 32 per cent in Japan, by 25 per cent in the Republic of Korea and 21 per cent in Mexico. India's services exports, accounting for 10 per cent of total developing country services exports, fell by 5 per cent in the first half of the year.

8. The net effects of the crisis on FDI flows in infrastructure are expected to be negative. Cross-border mergers and acquisitions (M&A) in the whole services sector of developing economies declined from \$65 billion to \$59.4 billion between 2007 and 2008, and was only \$15 billion in the first half of 2009. The drop in ISS equalled 9 per cent and was dominated by falls particularly in transport and finance services in 2008 while cross-border M&A in the electricity, gas and water sectors saw positive growth of 23 per cent in 2008.

9. ISS have been given a boost by economic stimulus measures which have emphasized infrastructure development, renovation, upgrading and adaptation, as part of their counter-cyclical spending efforts to create jobs and revive economic growth. The share of infrastructure spending in stimulus packages represents on average 64 per cent in developing countries and 22 per cent in developed countries. Particular attention has commonly been given to infrastructure deficits, maintenance and renewal, consumer access and protection, and new public investment to spur a green transformation with reduced environmental impacts. In light of the projected increase in 2009 of the number of unemployed from 180 million to 210–239 million,³ government measures relating to ISS can help address the employment-related impacts of the crisis.

³ ILO (2009). *Global Employment Trends, May 2009 Update*.

Box 1. ISS in stimulus packages

The major share of public sector interventions has been in the financial sector through rescue packages. According to the International Monetary Fund, upfront government support to the financial sector averaged 5.8 per cent of GDP in developed countries and 0.3 per cent in developing countries. Besides, infrastructure investment has become a significant component of stimulus packages. The European Union (EU) has committed upwards of \$200 billion to infrastructure. The United States stimulus package directs substantial public funding to transportation, energy and information technology (IT) infrastructure. Canada, Finland, Germany, Portugal, the United Kingdom and the United States have included measures to increase broadband access, build faster fixed line and wireless next generation networks and expand broadband connections to rural areas. India is investing \$30 billion in upgrading the country's infrastructure; South Africa plans to maintain high levels of investment (\$70 billion) mainly in transport, energy, water and sanitation infrastructure, and information and communication technology (ICT) infrastructure. China's package of \$570 billion includes expansion of a previously planned railway investment programme of 300 billion yuan to 500 billion over two years, and accelerated investments in water, sanitation and urban transport.

10. A recent imperative for governments to place their economies on more environmentally sustainable development trajectories against the backdrop of climate change has added a new challenge for ISS regulations. A greening of relevant policy incentives and technical regulations has become important in encouraging the private sector to reduce its environmental footprint. Using new public investment to support green technologies in ISS will be key to developing cleaner production processes in services, particularly energy and transportation which represent 60 per cent of the anthropogenic CO₂ emissions responsible for climate change.

11. ISS regulations require adaptation to technological developments. Technological developments can contribute to increased access to ISS by reducing costs and introducing new products.⁴ For example, in the energy sector they relate inter alia to the introduction of gas-fired combined-cycle gas turbines and smaller, modular technologies.

II. Key regulatory issues in ISS

12. The past three decades can, in general terms, be characterized as one of broadly based reforms, with a concomitant faith in markets to self regulate, including in many ISS. Governments are now re-evaluating this experience, particularly in financial services, and strengthened regulation and re-regulation have become imperative as the economic and

⁴ The World Bank (2009). *Global Monitoring Report 2009: a Development Emergency*.

social costs of regulatory failure have become evident, in some cases requiring nationalization of certain segments and firms. In this context the role of government has become primordial.

13. The case for economic regulation arises, in part, from the need to correct market failures to achieve a socially efficient and equitable outcome that would not arise from allowing markets a free hand in allocating and distributing resources. The traditional theory of regulation teaches that market failures arise from (a) externalities, (b) information asymmetries and (c) monopolistic market structures. All these are prevalent in ISS which are notoriously prone to market failures. However, just what should be subject to regulation does not produce consensus; accordingly market structure and entry conditions, degrees of competitiveness, ownership rules, investment levels, services quality, pricing and access to networks amongst others have been subject to regulatory oversight, and of varying degrees of strictness.

A. Forms of ownership and management of ISS

14. To the extent to which ISS were defined as "natural" monopolies they have traditionally been provided by governments, this was particularly true in utilities such as power and water. SOEs in these sectors were often mandated to pursue multiple and in some case conflicting objectives, such as profitability, providing services to underprivileged population groups or remote regions, generating employment or the obligation to utilize certain inputs produced by state-sanctioned suppliers. Partly due to such a broad mandate, SOEs have been criticised for exhibiting sub-optimal productive efficiency, insufficient accountability and inadequate incentive structures.

15. Over the past decades, infrastructure reforms have unbundled and opened most ISS to private participation, including through privatization, PPPs, concessions, build-operate-transfer, foreign investment and international trade. These have rendered good regulations in ISS all the more indispensable. The reforms in ISS, particularly in network industries, involved five interdependent elements: unbundling, privatization, wholesale competition, retail competition and regulated or negotiated third party access in transmission and distribution (in electricity and transportation) and storage (in natural gas). The past reforms exhibited wide variations depending on whether countries reformed part(s) of the supply chain (e.g. power generation) or chose to maintain vertical integration, and whether they involved private sector participation or employed a mix of state and private sector ownership.⁵

16. As countries embarked on these reforms, the private provision of ISS increased. While in the 1990s only 3 per cent of subscribers in the electricity distribution sector were served by private companies globally, by 2003 this figure had grown to 60 per cent. Similar patterns are observable in fixed telecommunications and water distribution. Various research has examined the impact of private participation on ISS performance. Some studies find significant improvements on electricity distribution concerning companies' performance in Latin America, induced by change in ownership.⁶ Others have shown the type of regulations, especially pricing, has been a key determinant in firms' performance. Empirical analysis seems to show that, while private participation appears to have improved ISS performance, a more important determinant of a positive outcome is types and quality

⁵ UNCTAD (2007). Competition in energy markets. TD/B/COM.2/CLP/60.

⁶ Andres L, *et al.* (2006). The impact of privatization on the performance of the infrastructure sector: the case of electricity distribution in Latin American countries. World Bank Policy Research Working Paper 3936. June.

of regulations and institutional capacities.⁷ It is important to monitor the performance of private operators, including through (a) performance benchmarking commonly used in the regulated utilities; (b) incentive regulation; and (c) financial sanctions for poor performance.

Box 2. Small-scale providers (SSPs) of ISS

A particular form of private participation is the provision of ISS by SSPs. Developed on a local scale, this category of providers focuses on delivering water services by tanker, transport services by minivan or electricity through mini-grids or household solar panels. They offer affordable services to the poor by using cheaper technology and flexible payment arrangements, providing lower quality of services and bypassing the network (e.g. local electricity generation or cellular phones). SSPs range from community-based businesses to non-governmental organizations (NGOs) and commercial entrepreneurs. The market share of SSPs can be important, e.g. 20–30 per cent of urban dwellers in developing countries buy water by the bucket. It is important that these alternative providers be given closer attention in respect of RIFs.

17. While many governments resorted to privatization in the 1980s and 1990s to remedy the perceived problems of public provision, outright privatization without adequate institutional and regulatory underpinnings often failed to yield the expected results. Moreover, information asymmetries which make it difficult for regulators to assess fair pricing. In recent years the key challenge has been redefined as establishing appropriate regulatory and incentive mechanisms to enhance SOEs' performance.

18. Some measures have proven useful:

(a) Setting appropriate, transparent, regularly monitored and evaluated performance targets, which act as a reputation-enhancing mechanism for SOEs. Performance contracts have been used effectively in Uganda to improve the performance of the water supply service and trigger change in the management process;

(b) Launching governance initiatives such as setting budget limits to induce managers to link investment to profitability and enhance efficiency, or implementing a performance-related pay structure to create internal organizational incentives;

(c) Introducing a private sector style management culture, e.g. decentralized decision-making separating day-to-day operations from performance monitoring/regulation and encouraging cost containment, services quality and asset management;

(d) Implementing additional public reporting of performance and policies, such as on economic profitability allowing better evaluation of performance;

(e) Introducing minority private participation;

⁷ Estache A and Rossi M (2008). Regulatory agencies: impact on firm performance and social welfare. World Bank Policy Research Working Paper 4509.

- (f) Establishing independent utility regulatory and competition policy agencies;
- (g) Promoting consumer participation in decision-making.

19. Since SOEs are often found in developing countries they need to be given closer attention. Economic research on regulating ISS has been more prevalent for privately operated firms although regulations of publicly run enterprises are common in many countries. The relative wealth of knowledge on the regulation of private firms, as compared to that of SOEs, could have an inadvertent policy implication that private participation could be considered a priori a better regulatory option. There is need to further advance research examining the differences between regulating privately and publicly operated enterprises.

20. The PPP model was introduced in the 1990s as an alternative to public or private provisions of ISS. PPPs include various arrangements in which a private entity, under some form of agreement with the government, undertakes to provide infrastructure investment, services, management or assets. The initial experiences with PPPs have been mixed, particularly in LDCs. In some instances, PPPs have led to the creation of more productive enterprises. For example, in Senegal, a ten-year PPP contract in the water sector signed with Saur in 1996 significantly improved performance. Another example is a management contract between Suez and Johannesburg Water in 2001 in South Africa. In other cases, financial and political difficulties associated with PPPs have led to contract renegotiations, unmet service improvement targets and an unequal distribution of benefits (prices) among consumers and exit of firms from the market. Spain and France pioneered PPP use for motorway development in the 1960s. But oil price shocks in the 1970s prevented toll increases anticipated under PPP agreements causing many concessionaires to exit partnerships and nationalization of others. In the United Kingdom, in 2003 the London Underground rail system was transformed into a PPP that collapsed in 2007 due to cost overruns leading concessionaires to exit the partnership and its renationalization.

B. Competition-related issues

21. Vertical integration of potentially competitive and natural monopoly elements of infrastructure may give rise to competition and/or regulatory problems. Vertical integration of two different segments of the supply chain can make discrimination against un-integrated competing operators feasible and profitable for the incumbent. They may engage in anti-competitive behaviour through restrictive access to monopoly elements (transmission networks) or “margin squeeze” – a practice that arises when the incumbent operates both on the wholesale and retail levels, and vertically un-integrated retailers purchase at the wholesale level and sell at the retail level.

22. Regulation of monopolistic market power is a salient regulatory challenge facing ISS especially given that these sectors are characterized by scale economies, weak demand-side response, complex economic regulation and an apparent trend towards the re-integration of previously unbundled elements into the supply chain. Electricity transmission or water delivery via pipelines is normally undertaken by a single entity. Since ISS entails considerable “sunk costs” – which cannot be recovered if a company withdraws from the market – there is little pressure from potential entrants to keep prices low. The services provided are often a basic necessity (e.g. drinking water), so demand is inelastic, making it easier for providers with market power to keep prices high. The experience in electricity and natural gas market reforms reveals the persistence of problems of significant market power and concentration after competition has been introduced. The ability of government to undertake such reforms has also been constrained by the political economy of the reform

and macroeconomic conditions, e.g. the particular sensitivity of energy prices leading to below-cost energy pricing necessitating subsidies.

23. Technological changes have allowed for unbundling of different segments of infrastructure industries, which requires adapting regulations. Vertical unbundling – distinct ownership of the generating and transmission businesses – may be required by the regulators to limit the incentives of firms to engage in uncompetitive, discriminatory behaviour. In other markets, lesser degrees of vertical unbundling, such as restrictions on joint operational decision-making or on information flow between the businesses, are used to restrict the ability to discriminate.

24. Effective economic regulation is crucial when introducing competition. It has proven challenging to ensure the development of effective competition during the transition from regulated to competitive markets. It has been necessary not only to regulate third party access to the monopoly segments but also to establish wholesale markets and other financial intermediaries to enable trade between upstream and downstream actors. Some jurisdictions have established independent system operators, independent non-profit organizations that acquire from transmission-owning utilities the operating control (not ownership) over designated key transmission facilities.

25. Some developing countries have opted for gradual reform adjusted to countries' specific circumstances, as drastic reform in many cases suffered interruptions. In low income countries with limited regulatory and institutional capacity and economic weaknesses, unbundling may not work, and a sequenced approach may be more sustainable in reforming power markets than a single stage process. The reforms in ISS affect different societal groups differently. It is important for distributional issues to be taken into account when designing reforms to ensure success.

Box 3. Experience of Argentina in the power sector

In the Argentinean power sector, it was believed that the strategic injection of capital and the installation of new management would yield productivity gains in generation, transmission and distribution. The authorities intended to sell state assets to private investors, most of them foreign. Competition in generation was essential because they envisioned only minimalist, primarily anti-trust, regulation. The three basic components of reform – market design, establishment of independent regulation and privatization – were carried out contemporaneously, which led to positive results for the sector.

C. Pricing

26. Price regulation is at the core of ISS regulation. In the past, under-pricing, while required for public policy reasons including universal access, was a common policy issue, often resulting in under-supply, sub-optimal quality of services and government subsidies. The two main approaches are (a) rate of return (RoR) and (b) price caps. There also exists a hybrid approach in which some cost changes are automatically passed through to tariffs. Existing research shows that the type of pricing regime has a bearing on overall ISS performance.

27. With RoR regulation, prices are set to cover firms' capital and operating costs and an agreed "fair" return on investment. The cost estimation is based on past costs and future

forecasts adjusted for inflation. For the regulated company, this method provides predictability and stability for future levels of profit. For the regulator, the approach allows it to attract investors as returns are subject to less risk than those of an average firm. RoR regulation has been questioned on several grounds: it could create a negative public opinion of regulators as the regulated companies may seek to maintain high profits. It could underestimate capital depreciation, which is problematic in industries needing to adapt to exogenous technological progress (telecommunications). It may create incentives to inflate costs to raise revenues.

28. With price cap regulation, prices for services are set upfront and firms' returns vary according to the level of incurred capital and operating costs. This approach is used in industries that regularly need to adapt to exogenous technological changes. In this case, the approach provides better incentives for capital replacement. It has proven effective in sectors where information asymmetry is prevalent between the regulator and the regulated. Price caps can promote cost reduction and productive efficiency. The main challenge is designing an incentive that motivates a cost-reducing attitude and an optimal level of effort during the whole period of the concession. This aspect is particularly relevant for monopolies.

29. The frequency and tightness of rate base reviews is key to this approach. Optimal base reviews depend on the duration of the concession, as a cost-reducing attitude is linked to the time horizon over which the firm would generate benefits. For short-term concessions, fixed prices are often recommended. For longer concessions, a partial rate base review at the beginning of the second period is recommended. More frequent revisions can be useful in sectors where demand is sensitive to price conditions. Flexible provisions in reviews are suggested for concessions where input increase is expected. Where the regulated company is privately operated, the price cap mechanism needs to provide adequate incentives for costs to be reduced over time. Not setting efficiency targets slows the pace at which customers benefit from efficiency improvements. When the price cap is applied to a publicly managed company no such incentive arises, in which case externally imposed efficiency targets become important. Further research on the implications of different pricing approaches for developing countries is useful.

D. Universal access

30. Universal access regulation takes the form of allocating subsidies to, or imposes statutory universal services obligations on, service providers to extend service delivery at an affordable price to otherwise unserved remote areas or poorer segments of the population. Many countries have created a fund to help advance universal access objectives. Such funds are often used to provide subsidy support to firms to undertake additional investment in extending infrastructure and improving maintenance operations in poor urban and rural areas.

31. Subsidies are used by governments to pursue economic, social or environmental objectives. A large proportion of subsidies in ISS are captured by the energy sector. Governments subsidize those sectors or activities that exhibit positive externality such as high potential to boost economy-wide productivity growth, technological progress or support human development. Subsidies can have negative side effects given their fiscal implications and the risk that they may unduly favour some groups at the expense of others. A key issue in developing countries is targeting subsidies towards those that need them. Subsidies are allocated in ISS markets either in the form of consumption subsidies or access subsidies. Problems arise as subsidies can be regressive as the larger proportion are allocated to richer users and it is difficult to measure the consumption of poor users, hence they are unable to take advantage of subsidies based on quantities consumed. Mistargeting

access subsidies is a major problem. Allowing firms to cross-subsidize may be an option in many developing countries.⁸

32. Surveys can be an effective tool for targeting. For example, Sri Lanka carried out a survey evaluating four water supply attributes (price, quantity, safety and reliability). The surveys provide useful information for improving service delivery programmes because it allowed explicitly targeting user groups. Furthermore, the impact of different water policy tools (e.g. subsidies, provision of credit, vouchers and targeted tariff structures) can be evaluated against customers' preferences and income on a case-by-case basis.

III. Regulatory institutions and cooperative mechanisms

33. National regulators face the challenge of meeting, through effective and efficient RIFs, multiple – and often competing – economic and public policy objectives. Despite significant progress, efforts at strengthening RIFs in developing countries have yielded mixed results. Research demonstrates that regulatory efforts in developing countries tended to rely on traditional regulatory theory which was based on what would work in developed countries and gave little regard to developing countries' institutional contexts. These findings show the need to adapt regulations to countries' specific circumstances, capacity and needs, particularly regarding institutions.

A. Institutional effectiveness

34. Several approaches and criteria have been identified to assess RIFs' effectiveness including (a) autonomy from political authorities; (b) transparency before institutional and non-institutional stakeholders; (c) accountability to the executive, legislative and judiciary; and (d) tools for institutional development. Several institutional factors are prone to regulatory failure. These comprise (a) limited regulatory capacity; (b) limited accountability (leading to the risk of collusion between various interested parties); (c) limited commitment (often evidenced by the recurrence of contract renegotiation); and (d) limited fiscal efficiency. Institutional capacities of national regulatory authorities can considerably compromise regulatory process and outcome.

35. Research shows that effective RIFs can be greater determinants of ISS performance than ownership or management style. It is therefore important that adequate attention be given to developing and monitoring the institutional dimensions of regulation. The corollary to the need for regulations to be best fit to prevailing national conditions is the need to constantly adapt the institutional structure and process to new conditions. Regulators are faced with the challenge of maintaining a predictable environment in a time of unpredictable economic, social, technological and environmental changes. The institutional design of the regulator needs to be flexible enough to adapt to market and other realities while not compromising its credibility.

36. Involving a broad range of national stakeholders (consumers, local government, investors, the private sector and NGOs) in decision-making has been useful. Multi-stakeholder consultation is conducive to building ownership, greater transparency and strengthened legitimacy of regulations. It helps regulators understand stakeholders' concerns. Regulatory cooperation between authorities and service providers and other stakeholders is particularly useful in ensuring that regulations are relevant, especially when

⁸ Estache A and Wren-Lewis L (2009). Toward a theory of regulation for developing countries: following Jean-Jacques Laffont's lead. *Journal of Economic Literature*. 47 (3).

some self-regulation is present. Regulatory cooperation can involve having regulatory elements developed by service providers and then incorporated into government regulation or of co-regulation, e.g., telecommunication services where new technological developments such as merging with other sectors such as IT and the Internet have rendered traditional regulations irrelevant and required regulators to collaborate on developing and adapting new regulations.

B. Institutional arrangements

37. Two institutional arrangements underpinning IS regulations have been prevalent, namely (a) independent regulatory agencies (IRAs) and (b) the public service concession. Transitional regulatory systems are relatively common when a country is unable to implement the IRA model due to lack of capacity or commitment, or has been too ambitious in creating a new regulatory system. Some aspects of IRAs are incompatible with the country's legal and cultural norms. While the IRA model seeks to depoliticize economic regulation by excluding policymakers from the regulatory process, the premise of the public concession model is that government cannot be dispensed of public service obligations in ISS. With the IRA model these can remain the responsibility of government or of a private operator implementing public service obligations.

38. IRAs have been adopted by many when undertaking ISS reforms to prevent a regulatory "capture" of agencies by ISS providers, to promote a competitive market through credible and enforceable regulations. Experience shows failures with IRAs occurred when institutions lacked political commitment, were embedded in a weak legal environment or were captured by private interests. There is also a need to design quality RIFs, promote simple and transparent administrative procedures and take decisions in an unbiased, accountable and independent manner.

39. Securing highly qualified professional staff is critical for the success of the IRAs as ISS regulations are knowledge and information intensive. Due to the limited availability of professionals, single-sector IRAs are not always a feasible option for developing countries. One means of addressing this is through the pooling of human resources, whether at the national level with multi-sectoral agencies or at the regional level with multi-national regulators and institutions facilitating multi-national regulatory collaboration. The recruitment and training of regulatory staff is important. International support is needed to strengthen human and institutional capacities.

40. The public service concession model – drawn from the French experience in water and sanitation, where municipalities were barred by law from privatizing facilities, and in some cases PPP arrangements – authorities lease the assets to concessionaires to whom they delegate the public service obligation. The details are fully captured in the concession contract. This amounts to "regulation by contract" without a regulator. The arrangements are legally enforceable by the courts or may be governed by an extraneous body of law.

41. To develop successful institutions, countries need legislative bodies that can enact adequate laws, a functioning court system or dispute resolution process, policymaking institutions, clear policy objectives and governmental bodies that can prepare and tender contracts.⁹ Countries need to determine the optimal sequencing of reforms and prioritize them. There is a need for a closer definition of the relationship between ISS regulators and competition authorities, and for closer cooperation between the two, formally and

⁹ Brown A *et al.* (2006). *Handbook for Evaluating Infrastructure Regulatory Systems*. Washington DC. The World Bank.

informally, given the close and intricate relations between ISS regulations and competition issues.

C. Regulatory cooperation

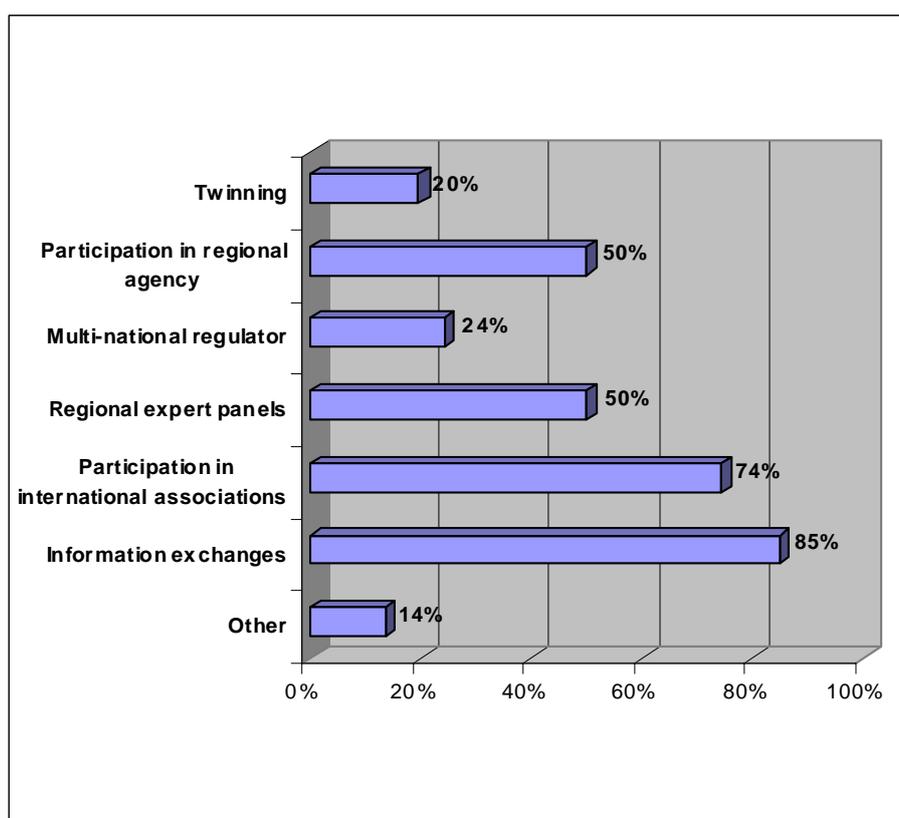
42. International regulatory cooperation and cooperative mechanisms are important in addressing cross-border externalities, and overcoming regulatory and institutional constraints, including resource and capacity constraints at the national level. The substantial majority of countries today are engaged in some form of bilateral, regional or international cooperation. The development of cross-border infrastructure networks, or infrastructure sharing, often occurs at the regional level underpinning regional integration.

Box 4. GCC cooperation in the electricity sector

GCC countries are faced with a rapidly growing demand for electricity. Given the importance of sufficient electricity supply, GCC member States have cooperated in the electricity sector for 30 years. A 2002 agreement stresses that member States should adopt integrated economic policies for infrastructure projects and basic utilities. Cooperation is broad in scope: electric grid interconnection, development of a database for electricity information, operation techniques, maintenance of power-generating stations, harmonization of electricity standards and tariffs, and privatization. These reforms are aimed at unbundling the vertically integrated structure, allowing competition to exist in generation, allowing transmission and distribution companies to provide equal access to all network users on a non-discriminatory basis and establishing an independent regulatory body. Most GCC countries have embarked on unbundling their power sectors into separate generation, transmission and distribution segments.

43. Formal and informal cooperation focuses on “hard” infrastructure facilities and policies and regulations. “Softer” forms of cooperation include regional regulatory agencies, expert panels and associations, information exchange, regional training and research, and “twinning” activities. These forms of cooperation are not an alternative to regulation. An UNCTAD survey using questionnaires covering 66 regulatory authorities in ISS shows that information exchange and participation in international associations are the most frequently used forms of such cooperation, followed by participation in regional agencies and expert panels.

Regulatory authorities engaged in international cooperation



Source: UNCTAD.

44. Cooperation between regulators through “twinning” – i.e. pairing of regulatory institutions with similar mandates – has been successful for three decades in many bilateral and multilateral cooperation programmes to achieve the transfer of technical skills, knowledge and good practices, to promote institutional capacity-building in ISS. Important elements of twinning are training programmes and exchanges for peer reviews of regulatory systems.

45. The United States Agency for International Development and the National Association of Regulatory Utilities Commissioners have established a Regulatory Partnership Programme for the exchange of experience and information between the United States and some developing country regulators to strengthen institutional capacity, improve regulatory practices and foster long-term relationships. The EU has promoted twinning by assisting EU candidate countries in Central and Eastern Europe. Twinning helps beneficiaries in the development of efficient administrations, with the structures, human resources and management skills needed to implement the EU *acquis communautaire* (body of law), including in ISS. This assistance is a key tool of the pre-accession strategy. Priorities are assigned to institution building, capacity-building and investment financing. The significant human and financial resources devoted to this effort (approximately €5.7 billion for 1999–2006) are illustrative of the kind of assistance that would be required for similar initiatives at regional or international levels (e.g. Aid for Trade).

46. At the regional level, research and training centres help build national regulatory capacities, including in Southern Africa and South Asia.¹⁰ Such centres are established by regional regulatory associations and are generally organized on a sectoral basis. Centres provide a platform for research, training, peer review and exchange programmes.

Box 5. Peer review initiative for electricity utilities in Africa

A peer review initiative started in 2008 brings together electricity regulators from Ghana, Kenya, Namibia, Uganda, the United Republic of Tanzania and Zambia. Its objective is to promote improved performance of electricity utilities, increased investment, widened access and reliable and competitively priced electricity services through enhanced leadership and management capabilities. The group regularly meets to analyse members' governance arrangements, regulatory methodologies and decision-making processes. Stakeholders involved include the regulatory agencies, the ministry responsible for electricity, local utilities and representatives of industry, civil society and the local media.

IV. Financial services and regulatory reform

47. The global financial crisis exemplified the paramount importance of adequate RIFs in financial services where the cost of market and regulatory failure can be extremely high. It is widely recognized that the financial market boom that preceded the crisis in a wave of privatization, deregulation and liberalization, and the emergence of globally integrated capital markets was not matched by adequate national and global regulation and market oversight. The regulatory failure in the new deregulated environment became manifest during the crisis.

48. The crisis has also challenged assumptions on which previous regulatory approaches were built, namely a rational and self-regulating market. It has also questioned the prevailing policy prescriptions in favour of financial market liberalization and limited state intervention in the economy. This would have implications for countries' ability to engage in financial services liberalization as a more cautious, prudential approach to liberalization and regulation is increasingly considered important. For instance, several jurisdictions have stressed the need for local incorporation of the foreign commercial presence (as subsidiaries rather than branches) as a condition for the admission of foreign financial institutions, clearer distribution of costs between home and host countries in the event of cross-border insolvencies and being cautious in allowing foreign financial firms to offer new financial products in its territory even if they are permitted to supply them in their home country.

49. Regulatory failure became apparent during the crisis with regard to the control of product safety for complex and high risk financial products, management of risks and leverage, asymmetric regulation of non-traditional financial institutions and the "shadow banking system", credit rating agencies, assessment of systemic risk as opposed to individual firms' risk, the pro-cyclical nature of capital adequacy regulation, moral hazard and the incentive structure for compensation systems. The injection of public funds and

¹⁰ Eberhard A (2007). *Infrastructure Regulation in Developing Countries: an Exploration of Hybrid and Transitional Models*. Washington DC, Public-Private Infrastructure Advisory Facility/World Bank.

government guarantees to rescue affected firms and the de facto nationalization of a sizeable segment of the markets has further emphasized potential moral hazard.

50. An “overhaul” of national and international financial sector regulations is now on the policy agenda of major economies and international bodies, including the Financial Stability Board, the Basel Committee on Banking Supervision, the International Organization of Securities Commissions, the International Accounting Standards Board, the International Monetary Fund and the Group of 20. The report of the United Nations Commission of Experts on Reforms of the International Monetary and Financial System (Stiglitz Commission) also discussed regulatory options. UNCTAD’s *Trade and Development Report 2009* (chapters III and IV) contains an in-depth analysis of the issue.

51. The various reform options are mainly aimed at bringing about a more stable financial sector which can provide long-term financing to productive investment projects. Many also seek to achieve a more socially efficient and equitable market through regulation. Some major elements of reform include:

(a) Stronger surveillance to identify systemically important firms on the basis of fully consolidated balance sheets and to prevent systemic risks to economic stability;

(b) Clearer roles, accountability and mandates for regulators with a clear hierarchical decision-making structure and up-to-date supervisory information to enable regulators to act swiftly, including to protect consumers and investors from financial abuse and for financial product safety, and greater coordination among central banks, regulators and governments, domestically and internationally to prevent regulatory arbitrage and to monitor liquidity and solvency risks;

(c) Strengthening the systemic macro-prudential framework for financial institutions with provisions on capital requirements, liquidity management and supervisory oversight of risk;

(d) Strengthened risk mitigation structures and processes for the core Basel II areas of market, credit and operational risk, and for liquidity risk;

(e) Improved data management by financial institutions, required by the need for better risk management to eliminate gaps in data of firms operating across multiple regulatory regimes;

(f) Stress tests and liquidity provision permitting regulators to distinguish between liquidity and solvency risks;

(g) Enhancing transparency in financial reporting, including rules for the valuation of financial instruments;

(h) Reforming the use and operations of credit ratings and credit rating agencies and making the latter subject to regulation;

(i) Improving cross-border cooperation and information exchange amongst regulators with arrangements for crisis management, possibly including the use of colleges of regulators to coordinate international regulatory oversight for cross-border financial institutions;

(j) Reform of accounting standards, particularly regarding “off balance sheet” activities.

Box 6. Basel II and beyond

Basel II has been subject to reform, including for limited capital adequacy provisions and inadequate consideration of systemic risk, and inadequacy in structured finance ratings. Observers have argued that minimum capital requirements for banks under the Basel II need to be made stronger, including by restricting “off balance sheet” activities and reducing pro-cyclical effects. The Basel Committee is strengthening the treatment for certain securitizations (in relation to minimum capital requirements), e.g. requiring that banks conduct more rigorous credit analyses of externally rated securitization exposures. This will require that supervisors have adequate expertise and resources to monitor banks’ risk management models and develop their own assessment tools.

52. There is a need for international coordination, sharing of information, and for regulators to aim at similar standards to avoid a race to the bottom in financial regulations. However it would be a mistake to impose a common regulatory standard given there is no single regulatory system that is right for all countries. Countries with different levels of development and regulatory capacity need to adopt different regulatory approaches. By increasing the participation of developing countries in various agencies responsible for financial regulation and for guaranteeing international financial stability, those agencies may develop a better understanding of different regulatory requirements.

V. Regulatory provisions in trade agreements

53. The inclusion of services in the multilateral trading system and regional trade agreements (RTAs) has raised concerns over the potential conflict between the liberalization and regulation of services and the impact of trade rules on national regulatory autonomy, i.e. whether trade agreements limit regulators’ ability to regulate, if so to what extent and whether such interaction is justifiable.

54. The General Agreement on Trade in Services (GATS) acknowledges members’ right to regulate and to introduce new regulations on the supply of services to meet national policy objectives, while recognizing asymmetries in services regulations and the particular need of developing countries to exercise this right. In sectors where specific commitments are undertaken, GATS provides for administering measures of general application in a reasonable, objective and impartial manner. Pending the establishment of new rules, WTO members should apply licensing, qualification and technical requirements and procedures that are (a) based on objective and transparent criteria; (b) not more burdensome than necessary to ensure the quality of the service; and (c) in the case of licensing procedures, not in themselves a restriction on the supply of the service.

55. More specific provisions governing domestic regulations exist on telecommunications and financial services. On telecommunications, WTO members should provide access to, and use of, public telecommunication networks and services on reasonable and non-discriminatory terms and conditions while ensuring transparency of tariffs and technical standards. Countries applying the “Reference Paper” on basic telecommunication services need to establish an independent regulator separate from, and not accountable to, any supplier of basic telecommunications services. Some countries such

as India have made modifications to the Reference Paper. India does not include the provision on the existence of an independent regulator, but rather kept the second part of the provision on regulators, which states that the decision of and procedures used by the regulatory authority shall be impartial with respect to all market participants. Members are also required to safeguard the prevention of anti-competitive practices, ensuring interconnection with a major supplier, and allocation and use of scarce resources.

Box 7. Regulatory issues in GATS disputes

Mexico – Telecommunications (Telmex) examined the impact of GATS to national regulations. The complainant, the United States, contended that Mexico failed to ensure that Telmex, the largest Mexican operator, interconnected United States cross-border suppliers on cost-oriented and sufficiently unbundled charges as required by the Telecom Reference Paper. The panel concluded that the difference between the costs presented and the settlement rates was “unlikely to be within the scope of regulatory flexibility allowed by the notion of cost-oriented rates” of the Reference Paper. Only costs related to interconnection itself can be reflected in prices, and costs for the general development of the network and for universal service programmes were not considered relevant to determining the cost basis for interconnection rates. While it was acknowledged that a member State’s regulator can choose from several pricing approaches to regulate interconnection rates, the requirement for reasonable, cost-oriented and unbundled rates suggests a limited flexibility regarding the ultimate results of the pricing approach selected. Countries need to assure that their commitments allow for sufficient policy flexibility to pursue regulatory experimentation throughout the ISS reform process.

56. In financial services, the GATS Annex on Financial Services explicitly authorizes prudential measures. While there is no agreed definition of “prudential measures”, the scope is broad and includes measures to protect investors, depositors and policy holders, and measures to ensure the integrity and stability of the financial system. Financial rescue measures taken during the crisis were presumably on such grounds. The current drive towards stronger financial regulations may warrant a clearer understanding of the scope for prudential measures.

57. Negotiations are underway for the establishment of multilateral disciplines on domestic regulations regarding licensing requirements and procedures, qualification requirements and procedures and technical standards, so as to ensure that they are, *inter alia*, consistent with the criteria listed above and do not constitute unnecessary barriers to trade in services. One outstanding issue is whether there should be a “necessity test”, which some consider likely to pose greater strains on the national regulatory autonomy, and, if so, whether it should apply to all services sectors where liberalization commitments are made, or only to specific sectors (e.g. accounting). Special and differential treatment (SDT) would be part of disciplines, e.g. transition periods. Developing countries have expressed that they need more room for adapting their regulation to changing circumstances given their lower levels of development of domestic regulation, effective SDT and support in building their RIFs.

Box 8. Mode 4 in ISS

Liberalization of temporary movement of natural persons (Mode 4) plays an important role in ISS particularly the movement of professionals such as accountants, engineers, and technicians. WTO members usually took general horizontal commitments relating to intra-corporate transferees and business visitors/services salesperson. These apply for some countries (e.g. Brazil, China and India) to categories of professional services such as accounting, auditing and engineering services related to ISS. In its horizontal commitments on Mode 4, the United States takes commitments to allow services salespersons and intra-corporate transferees. In this latter category, the United States commits to allowing movement of specialists with knowledge of the organization's research equipment or techniques. The national treatment for Mode 4 is unbound, though in the case of services incidental to energy distribution and various transport services no limitations are taken. For those countries which have scheduled their commitments according to the Understanding on Commitments in Financial Services, access is provided to foreign senior managerial personnel and specialists (including computer specialists, telecommunications specialists, accountants, actuarial and legal specialists subject to the availability of qualified personnel). In Mode 4 offers made by some countries in the Doha round new categories of persons are introduced, e.g. persons entering for career development purposes, graduate trainees, contractual service suppliers and independent professionals. Disciplines on domestic regulation and mutual recognition of qualifications could further Mode 4 access.

58. Under GATS, WTO members are free to grant subsidies to services sectors subject to national treatment commitments and most favoured nation (MFN) obligations. ISS have enjoyed subsidies. One hundred seven members notified subsidies in transport (of which 32 subsidize maritime, 22 air transport and 16 road transport). Forty-nine members provide subsidies to financial services, 28 to telecommunication services and 22 to energy services. Negotiations are ongoing to establish multilateral disciplines on services subsidies that distort trade, which have made little progress to date. The lack of a definition of services subsidies has been a source of difficulty in negotiations. Many governments affected by the crisis provided massive subsidies to the financial services sector. The question arose as to whether such subsidies were only granted to national banks or also extended to foreign banks established in their territories.

59. Various RTAs have incorporated additional rules and disciplines on domestic regulation, particularly on telecom and financial services, additional transparency and some sector-specific recognition. Such rules include regulation on the provision of value added services and standards-related measures. Such provisions reflect the increasing trend of relaxing regulation on enhanced or value added telecommunications services. In the area of financial services, among these provisions are the regulation on the supply of new financial services products, and the institutional and juridical form through which they may be supplied.

Box 9. Regulatory provisions in RTAs

The free trade agreement between Australia, New Zealand and ASEAN contains several regulatory provisions, applicable to all sectors or only to telecommunications and financial services. The horizontal provisions are largely modelled on, and made more specific than, corresponding GATS rules. Disciplines pertain to negotiations for the recognition of professional qualifications, licensing and registration requirements and procedures, publication on the Internet of measures affecting trade in services, provision of a reasonable opportunity for prior comment on new measures, the use of business names and post-establishment investment protections (including investor–state dispute settlement). On telecommunication services, they deal with interconnection terms, conditions and rates, and exclusion from the definition of anti-competitive practice of cross-subsidization in connection with the universal service obligation. Financial services disciplines relate to prudential regulation, regulatory transparency and transfer and processing of information. Parties are allowed to take prudential measures to ensure the stability of the exchange rate under certain conditions, subject to the “necessity” test and the phase-out requirement.

60. The obstacles to international trade in services appear to stem largely from the differences in regulatory systems. The emphasis of trade agreements should not be on a reduction of regulations per se, but on the management of regulatory diversity reflecting each country’s legal traditions on the content and form of its regulations. This fact makes the harmonization of services regulation through trade agreements, especially at the multilateral level, difficult and raises questions about its desirability. Close collaboration between regulatory authorities (including competition authorities in charge of sector regulations) and trade ministries but also of policy advice and assistance for RIFs in relation to trade liberalization negotiations are crucial.

VI. Conclusions

61. ISS contribute significantly to national income, growth, employment and poverty reduction. Maximizing these positive contributions requires good regulation and institutions able to promote domestic supply capacity, a competitive environment and sustained trade and investment flows. There is no single prescription for good regulation. RIFs need to be adapted to individual countries’ specific needs and circumstances. Particular attention needs to be given to distributional effects.

62. While there has been a trend towards private participation in ISS, public provision remains a viable and in some cases preferred option in many developing countries, particularly LDCs, for certain sectors such as electricity and water. Given the challenges associated with either fully public or private participation, the PPP model has recently gained interest.

63. The evolving economic, social, technological and environmental contexts would require governments to frequently adapt RIFs to new prevailing conditions and have sufficient institutional capacity and skills to guide, negotiate, regulate and monitor ISS.

64. Cooperative mechanisms (including North–South and South–South) can be crucial for developing efficient RIFs. Many countries have raised concerns that liberalization of ISS, including through international trade agreements, limits their right to regulate. Regular interaction and collaboration between trade negotiators and services policymakers, regulators and civil society can help improve regulatory and pro-development outcomes.

65. Additional research is needed to assist developing countries to identify and implement RIFs that can best deliver development gains. Focus areas could include: identifying the different policy regimes required for regulating privately and publicly owned enterprises, understanding how RIFs need to evolve as countries move along the development path and clarifying whether trade liberalization commitments in ISS have impacted economic and regulatory developments.
