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Internacional “O Brasil no mundo que vem aí” - III CNPEPI



Seminário IBAS

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"O Brasil no mundo que vem aí" - III CNPEPI




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1.

O Diálogo Índia, Brasil, África do Sul – IBAS:
Balanço e Perspectivas



1.
O Diálogo Índia, Brasil, África do Sul – IBAS:
Balanço e Perspectivas

Gilberto F. G. de Moura*

I - Introdução

A idéia da formação do Fórum de Diálogo Índia - Brasil - África do Sul remonta a uma proposta do ANC (“African National Congress”) -antes mesmo que o Partido assumisse o poder na África do Sul- no sentido de que os dirigentes do país trabalhassem em prol de um grupo que, no Sul, espelhasse o G-8 e dele se tornasse interlocutor. No entanto, a execução dessa idéia não teria início no primeiro governo democrático da África do Sul, o do Presidente Nelson Mandela. Naquele momento, provavelmente Pretória ainda não se sentisse confortável em assumir comportamentos protagônicos no mundo em desenvolvimento, quando segmentos da comunidade internacional, apesar de esperançosos, ainda receavam que a transição para a democracia no país pudesse sofrer percalços¹.

A proposta de criação do Fórum IBAS foi lançada em encontro dos Chanceleres dos três países por ocasião da posse do Presidente Luiz Inácio Lula da Silva, em 1º de janeiro de 2003. Seu estabelecimento formal se daria em 6 de junho de 2003, com a “Declaração de Brasília”, sua “certidão de nascimento”, emitida pelos Chanceleres dos três países, respectivamente, Yashwant Sinha, Celso Amorim e Nkosazana Dlamini-Zuma. Seus princípios e metas foram ratificados em Nova York, naquele mesmo ano, à margem da 58ª Assembléia Geral das Nações Unidas, pelo Presidente Lula, pelo Primeiro-Ministro indiano Atal Bihari Vajpayee, e pelo Presidente sul-africano Thabo Mbeki. Desde o início, a chancelaria brasileira mostrou-se inteiramente comprometida com o Fórum e prestaria entusiasmada contribuição para o seu delineamento.

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¹ Conselheiro João Genésio de Almeida Filho, tese defendida no XLIX Curso de Altos Estudos do Instituto Rio Branco “O Fórum de Diálogo Índia, Brasil e África do Sul (IBAS): análise e perspectivas.

A Declaração de Brasília apresentou, como principais fatores de aproximação dos três países, suas credenciais democráticas, sua condição de nações em desenvolvimento, e sua capacidade de atuação em escala global. Sobressaíram ainda outros aspectos que, apesar de não constarem textualmente da Declaração, reforçaram a identidade entre os três países do IBAS: a condição de potências médias; o peso específico regional; a caracterização como economias emergentes; o padrão de atuação similar em organismos multilaterais; os parques industriais desenvolvidos; o perfil de suas sociedades, com acentuados problemas de distribuição de renda e parcelas consideráveis de populações economicamente excluídas; bem como, por fim, o desejo de reforma das Nações Unidas, de modo a conferir ao Organismo maior equilíbrio e, portanto, aos países em desenvolvimento, uma maior representatividade. Numerosos como são, esses elementos de aproximação compensariam o principal fator de afastamento: a distância geográfica.

Com base na referida Declaração, Brasil, Índia e África do Sul comprometeram-se a realizar consultas regulares de alto nível, de forma a aprimorar o conhecimento e entendimento de suas respectivas visões políticas e a buscar coordenação e cooperação sobre ampla gama de temas, que incluem o fortalecimento do multilateralismo, a promoção da paz e da segurança, o desenvolvimento sustentável e o combate à fome e à pobreza, bem como a realização conjunta de projetos setoriais de caráter técnico.

Desde seu estabelecimento, o IBAS suscitou esperança, atraiu curiosidade e até mesmo resistência por parte de alguns segmentos, em razão de seu ineditismo. Afinal, o mecanismo representa importante inovação das formas de inserção dos países em desenvolvimento no cenário internacional. Por essa razão, recebeu algumas críticas e precisou vencer certa dose de ceticismo, oriunda, sobretudo dos remanescentes grupos de alinhamento automático aos centros tradicionais de poder, e dos pragmáticos do conformismo. No entanto, a trajetória que vem cumprindo desde sua criação evidencia vigor e dinamismo.

O sucesso do IBAS simboliza o momento de transição que vivemos no cenário internacional. As rápidas transformações que marcaram o último quartel do século XX, na medida em que suplantaram o mundo do pós-guerra, foram os prenúncios do novo milênio. A queda do Muro de Berlim projetou a imagem que simbolizou o início de uma

nova era. A profundidade dessas transformações ainda não se encontra refletida na geografia da atual configuração internacional, tampouco nas instituições multilaterais. Ademais, o mundo que se afigura e o conseqüente novo ordenamento do sistema internacional ainda não estão dotados de plena nitidez. Não cabe dúvida, porém, que os países em desenvolvimento terão nele papel de maior relevo.

A formação do IBAS é tanto uma sinalização, como uma conseqüência desse novo cenário. Por essa razão, a dimensão política desse fórum de diálogo é o eixo central que deve orientar seu fortalecimento e seu rumo futuro.

Como mecanismo inovador estabelecido por três das principais democracias de massa multiétnicas do mundo em desenvolvimento, o IBAS tem peso político próprio e legitimidade para se apresentar como interlocutor relevante para todos os temas da agenda global. Nesse sentido, junta vozes e fala em uníssono nos foros multilaterais.² Defende, por exemplo, temas importantes como o da reforma das Nações Unidas, patrimônio civilizacional da humanidade que precisa refletir a realidade de nossos tempos.

A vertente desenvolvimentista e cooperativa do IBAS reveste-se de igual importância. De um núcleo inicial de alguns segmentos no campo da cooperação trilateral, sofisticou-se o Fórum rapidamente. Diversificam-se as áreas de interesse e ampliam-se as demandas das três sociedades.

Conquanto os três países que compõem o IBAS partilhem objetivos comuns de busca de uma alternativa às atuais relações Norte-Sul de poder tanto no campo econômico quanto em termos de governança global, suas políticas externas refletem trajetórias distintas. A diplomacia de cada um deles projeta, em última instância, uma tentativa de adaptação à dinâmica da globalização assimétrica caracterizada pela rede de interdependências globais entre Estados no contexto de um mundo onde os desequilíbrios entre países desenvolvidos e em desenvolvimento vêm se alterando em função da elevação do status de poder de alguns países em desenvolvimento, particularmente a China, mas também os próprios membros do IBAS.

² Zélia Roelofse-Campbell, Chefe do Centro de Estudos Latino-Americanos da Universidade da África do Sul, in "Brazil and the G-3".

As políticas externas dos três países refletem, naturalmente, distintos imperativos regionais e estágios de desenvolvimento como Estados-atores independentes. Contudo, o que os três têm em comum é o compromisso com o multilateralismo no estabelecimento de uma ordem mundial multipolar e mais democrática. A preocupação de cada um deles com uma mudança da ordem internacional fica bem focalizada quando considerados seus relacionamentos coletivos e individuais no âmbito do G-8, (como “Outreach 5”, ao lado da China e do México).

II – Balanço e desafios do IBAS

A pauta do IBAS expandiu-se e alcançou diversidade e densidade inimagináveis há poucos anos. O intercâmbio em vários setores começa a ganhar contornos concretos. O êxito em uma área gera impacto positivo em outras e lança luz sobre novas fronteiras de entendimento possíveis. Organizá-las e priorizá-las é um dos desafios presentes. As Reuniões das Comissões Mistas Trilaterais e as Reuniões de Pontos Focais do IBAS, e particularmente as Cúpulas, vêm oferecendo oportunidade para a consolidação do mecanismo de consultas políticas e econômicas e para imprimir renovado impulso às atividades de cooperação. Em diversas áreas, as iniciativas em andamento repercutem positivamente: o turismo deve crescer, assim como os contatos entre empresários. Seminários estão aproximando intelectuais e criando laços entre instituições universitárias e órgãos acadêmicos. Eventos culturais como o ocorrido paralelamente à II Cúpula (Joanesburgo, 16-17 de outubro) e o Festival de Música e Dança do IBAS, realizado em Salvador, Bahia (26/27 de outubro de 2007), contribuem para ampliar o conhecimento mútuo e difundir as muitas afinidades existentes, ademais de criar vínculos de amizade e de saudável cumplicidade.

Com um maior envolvimento das grandes lideranças das comunidades de negócios dos três países, por meio do Fórum Empresarial do IBAS, criam-se condições de se alavancar comércio e investimentos reciprocamente vantajosos. Portais eletrônicos, revistas científicas, co-produções cinematográficas, pacotes turísticos, eventos esportivos, intercâmbio de professores e alunos contribuirão para estimular a divulgação do potencial que o mecanismo possui.

Pelos motivos acima elencados, a divulgação do IBAS é um ponto chave. O Fórum ainda é pouco conhecido. Será necessário envolver cada vez mais a mídia na sua pauta. Quando objeto de artigos da imprensa escrita dos três países, figura, invariavelmente, uma cobrança de “ações”, de “atos concretos”, de “realizações” que o IBAS teria que apresentar. O Fórum, como indica seu próprio nome, foi pensado precipuamente como um instrumento de diálogo. E esse diálogo tem sido conduzido de maneira consistente, em várias ocasiões e em diferentes níveis, até o mais alto, e compreende uma ampla gama de temas, como espelhado nos comunicados do grupo. Há poucos países ou grupo de países com os quais o Brasil tenha recentemente se engajado em um exercício de consulta e coordenação política tão abrangente e contínuo como no caso do IBAS. O mesmo pode ser dito da perspectiva indiana e sul-africana. Cada reunião do IBAS mobiliza praticamente todos os setores das chancelarias e de muitos órgãos da administração pública dos três países. Não há dúvida de que foi estabelecido um canal de consulta entre os três “big guys” do Sul, para se recorrer a uma expressão do jornalista sul-africano Peter Fabricius.³

Os Fóruns de Parlamentares e de Mulheres, realizados paralelamente à II Cúpula do IBAS (17/10/2007), envolveram novos segmentos, ao ensejarem um espaço parlamentar permanente, a exemplo do Parlamento do MERCOSUL, e uma instância regular para tratar de temas sensíveis como a questão da condição feminina nos três países, um grande avanço para a expansão social do mecanismo.

Para além do desafio cultural, as distâncias geográficas são outro desafio fundamental. Há características operacionais que deverão ser compreendidas. Quando melhores conexões, idealmente via África do Sul, reduzirem as horas de espera em aeroportos, as viagens aéreas entre os três países serão encurtadas sobremaneira. A inauguração em outubro de 2007 de vôo da Emirates Airlines, ligando São Paulo a Dubai em 14 horas, e as diversas possibilidades de conexões imediatas para a Índia já começam a ter efeitos em relação ao encurtamento de distâncias. A conectividade, porém, segue como um obstáculo ao adensamento das relações trilaterais que se espera seja superado com a devida celeridade.

³ Comentário do principal editor sul-africano de política externa, Peter Fabricius, intitulado “IBSA is all talk and, so far, no sign of action”, publicado no Jornal sul-africano “The Star”, edição de 27/07/2007.

Índia, Brasil e África do Sul crescem economicamente e afirmam-se politicamente. À estabilidade econômica soma-se a solidez das três democracias. Compete agora aos três países, conjuntamente, avaliar o impacto social e redistributivo de suas ações de forma a superar a elevada taxa de desigualdade que ainda persiste em suas sociedades. Nesse contexto, o IBAS também tem contribuído e a formulação de uma estratégia de desenvolvimento social reunindo as melhores práticas de cada país propiciará intercâmbio dinâmico e profícuo.

Na cooperação na área de ciência e tecnologia é também alentador o progresso efetuado, com a constituição, pelos três países, de um fundo que propiciará pesquisa integrada em diversas áreas de interesse comum.

É igualmente relevante que os três países se ajudem mutuamente no fortalecimento de suas instituições governamentais e na modernização do aparelho de Estado. Os Memorandos de Entendimento firmados por ocasião da II Cúpula do IBAS, no campo da Administração Pública e no de Administração Tributária, constituem estímulo adicional para o fortalecimento do Fórum, que deve se tornar um verdadeiro instrumento para a sociedade.

Com o IBAS, os três países buscam igualmente uma forma de superar os obstáculos de um mundo competitivo e desigual, de aproveitar oportunidades, de dar novo sentido ao objetivo comum de atrair novos investimentos, de modernizar suas economias bem como de assegurar níveis mais altos de emprego e melhor padrão de consumo. É preciso, ademais, garantir que as novas oportunidades comerciais e de investimentos sejam criadas, levando-se adiante as negociações comerciais MERCOSUL-Índia, Índia-SACU e SACU-MERCOSUL.

De uma perspectiva econômica, o IBAS permitiu uma melhor e mais profunda interação entre os três países promovendo maior articulação nas negociações multilaterais pertinentes. A política externa dos países do IBAS pode servir para catalisar a cooperação Sul-Sul, mas, para tal, é preciso que haja permanente vontade política dos três parceiros na busca de consenso e de exteriorização de posições de forma regular e imediata vis a vis os acontecimentos internacionais.

O IBAS, como mecanismo fortemente focalizado na necessidade de mudanças amplas na arquitetura da governança global (econômica, política e no campo da segurança), embora possa projetar uma imagem de “multilateralismo seletivo” no âmbito do Sul, parte desse “clubbing” para ações reais de promoção do desenvolvimento, por meio de uma

gama de ativos Grupos de Trabalho intergovernamentais que atuam em mais de duas dezenas de áreas prioritárias. Conta, ademais, com o apoio não só do setor privado como também da sociedade civil. Nesse aspecto, o IBAS não tem paralelo com quaisquer outras agremiações do Sul, tais como o Movimento Não-Alinhado e o G-77.

A ampliação do IBAS

No mundo acadêmico e na mídia, muito se discute a viabilidade de se agrupar outros Estados em um IBAS ampliado. Com efeito, alguns países emergentes vêm postulando adesão ao Fórum. Há, naturalmente, candidatos “naturais” a ingressar no Fórum, em função de suas características e desejo de obter maior inserção no cenário internacional.

O IBAS é, no entanto, um fórum singular e seu momento é mais de consolidação e de aprofundamento, do que de expansão. Ademais, há que se considerar o aspecto de aliança política do Grupo e a decorrente necessidade de se manter uma harmonia nas discussões trilaterais. Também no campo comercial, há que se ter presente que, tendo em vista as negociações entre MERCOSUL, SACU e Índia⁴, o eventual ingresso de novos membros poderia afetar a dinâmica do processo.

O IBAS tem uma identidade própria que convém preservar, porém não é um núcleo excludente de países emergentes. Nada impede que, sem prejuízo de sua personalidade atual, possa vir a manter diálogo especial e cooperação estreita com outros países ou blocos de países que eventualmente por ele se interessem. O momento, no entanto, é para consolidar questões práticas internas e atender às expectativas criadas, e não de expandir a composição.

III - A vertente econômico-comercial do IBAS

A aproximação entre os países em desenvolvimento é um dos principais eixos da política externa brasileira e o IBAS tem lugar de destaque nesse esforço para impulsionar o diálogo e a cooperação Sul-Sul.

⁴ SACU – União Aduaneira da África Austral, integrada pela África do Sul, Botsuana, Lesoto, Namíbia e Suazilândia.

A iniciativa trilateral tem dado resultados visíveis desde sua implantação em 2003. A estreita cooperação entre três das mais pujantes democracias do mundo em desenvolvimento abre oportunidades também no campo econômico-comercial.

Desde 2002, o comércio bilateral Brasil-África do Sul e Brasil-Índia cresceu 185%, para alcançarem, somados, 5,4 bilhões de dólares em 2007.

A visita do Presidente Lula à Índia em 2004 marcaria o início da elevação do patamar do relacionamento bilateral. O IBAS havia sido criado seis meses antes e consolidado na I Comissão Mista Trilateral, em março de 2004. Atualmente, a África do Sul é o principal destino das exportações brasileiras para todo o continente africano. A Índia, por sua vez, é o quarto maior parceiro comercial do Brasil na Ásia, conquanto, por vezes, note-se diferente compasso em sua disposição de permitir acesso a seu mercado. De qualquer forma, esses números demonstram que a corrente de comércio entre os três países encontra-se em franca expansão, e que possa atingir a meta de 15 bilhões de dólares.

O aprofundamento dos laços comerciais é um bom caminho para fortalecer o IBAS, daí a importância do Fórum Empresarial, lançado na África do Sul, em 2005. O Fórum constitui importante canal de diálogo para que Governos e empresários dos três países compartilhem perspectivas e propostas.

A parceria trilateral vem se transformando em palco privilegiado para a internacionalização das empresas dos três países e sua inserção competitiva numa economia globalizada.

No caso do Brasil, a Companhia Vale do Rio Doce participa de empreendimentos na África do Sul na área de mineração. A montadora Marcopolo tem ali importante investimento no setor de carrocerias de ônibus e estabeleceu igualmente "joint venture" com grupo indiano para montar a maior fábrica de coletivos do mundo. A EMBRAER está presente no mercado indiano e estuda estabelecer um consórcio com empresas aeronáuticas sul-africanas. A Petrobrás mantém entendimentos com a empresa petrolífera estatal indiana para compartilharem projetos de exploração em águas profundas. As maiores empresas indianas estão ampliando suas operações no mercado brasileiro e vice-versa, e as possibilidades de intercâmbio em áreas tecnológicas sofisticadas são relevantes.

Ainda em relação ao Brasil, diversas empresas indianas atuam nos setores farmacêutico, químico e petroquímico, de engenharia, de tecnologia da informação, de petróleo e gás. Mineradora sul-africana efetuou importantes investimentos no Brasil.

Na África do Sul, o Brasil começou a investir após a eleição de Mandela. Veio não apenas para fortalecer o diálogo nos fóruns internacionais, mas também para dar origem a empreendimentos comuns em todos os setores propícios e fortalecer os vínculos entre os três países. É o que vem acontecendo. Os segmentos bilaterais beneficiam-se de sinergia. Não há competição entre o bilateral e o trilateral, que se complementam e se reforçam mutuamente.

O ciclo de crescimento sustentável que vivem as três economias abre boas perspectivas para multiplicar esses avanços.

IV - A estrutura atual do IBAS

Os países do IBAS traduziram a idéia do agrupamento em uma estrutura ampla, cuja principal característica é a informalidade. Em seus cinco anos de existência, o IBAS desenvolveu diversas frentes de atuação. O Fórum ganhou complexidade e profundidade. Suas instâncias e áreas principais de ação podem ser, assim, identificadas:

a) Coordenação Política

A coordenação política no IBAS é realizada pelos Chefes de Estado e Governo e seus chanceleres, que se reúnem anualmente nas Cúpulas do Mecanismo. Ao final de cada encontro, os Chefes de Estado e Governo emitem um Comunicado Conjunto, que reflete as posições do Grupo em diversos temas da agenda internacional bem como formaliza a aprovação dos relatórios dos diversos Grupos de Trabalho e das atividades desenvolvidas pelo Fundo IBAS de Combate à Fome e à Pobreza.

A III Cúpula do IBAS terá lugar em 15 de outubro de 2008, em Nova Délhi. As anteriores ocorreram em Brasília (13 de setembro de 2006) e em Tshwane (17 de outubro de 2007). Na Reunião Ministerial de Somerset-West (África do Sul) ficou consolidada a periodicidade anual das Cúpulas do IBAS e a prática de emissão de comunicados conjuntos.

No nível imediatamente abaixo, ficam os encontros dos Chanceleres do IBAS, que presidem as Comissões Mistas. Também nessas oportunidades, são emitidos comunicados conjuntos, mais voltados, entretanto, ao desenvolvimento das atividades do Fórum. Os Chanceleres do IBAS encontram-se ainda à margem da Assembléia-Geral das Nações Unidas. Até o presente, cinco reuniões de Comissões Mistas foram realizadas: a primeira delas, em Nova Délhi, em 5 de março de 2004; a segunda, na Cidade do Cabo, em 3 de março de 2005; a terceira, em 30 de março de 2006, no Rio de Janeiro; a quarta, de 16 a 17 de julho de 2007, em Nova Délhi; e a quinta, em 11 de maio de 2008, em Somerset West.

A instância seguinte do IBAS é formada pelos "Pontos Focais". Na prática, são as autoridades mais importantes em cada país na direção executiva do Fórum. O Ponto Focal brasileiro é o Subsecretário Político para a África, Ásia e Oceania, e Oriente Médio (SGAP II), atualmente o Embaixador Roberto Jaguaribe. O Ponto Focal da África do Sul é o Vice-Diretor Geral para a Ásia e Oriente Médio (Deputy-Director General: Asia and Middle East), Embaixador Jerry Matjila, e o da Índia, o Secretário para o Ocidente (Secretary-West), Embaixador Nalin Surie. A periodicidade dos encontros dos Pontos Focais é semestral, contando-se as reuniões que, via de regra, mantêm imediatamente antes dos encontros ministeriais nas Comissões Mistas. Assim, a última reunião de Pontos Focais às vésperas da reunião ministerial de Somerset-West foi considerada a décima- segunda. Nem todas as reuniões de Pontos Focais geraram ata ou algum documento final.

Subordinados aos Pontos Focais encontram-se os Coordenadores Nacionais. No caso do Brasil, a função é exercida pelo Diretor do Departamento de Mecanismos Regionais do MRE, do lado sul-africano, pelo Diretor do Departamento de Assuntos Econômicos e Organismos Regionais, e do lado indiano, o Secretário Adjunto para Relações Econômicas Multilaterais. Caberia observar, no entanto, que a designação de Coordenadores Nacionais não foi tão claramente fixada quanto a de Pontos Focais e, por vezes, não é utilizada para designar os funcionários acima mencionados. Os Coordenadores Nacionais são os responsáveis pela coordenação das atividades dos Grupos de Trabalho e pelo gerenciamento administrativo do Fórum.

Com a importância e ampliação crescente do IBAS, foi criada, no âmbito da estrutura organizacional do Itamaraty, uma unidade administrativa que se ocupa exclusivamente do tema: a Divisão do Fórum de Diálogo Índia, Brasil, África do Sul (DIBAS), subordinada ao Departamento de Mecanismos Regionais da SGAP II.

O Fórum tem tido um desempenho alto no que diz respeito à consulta e concertação política. Os nove comunicados ministeriais (os das cinco Comissões Mistas e os outros quatro (Declaração de Brasília e Comunicados de Encontros nas 58^o, 59^o e 60^o AGNUs), e os dois de Chefes de Estado e Governo sobre temas de política externa, constituem um repositório de posições comuns sobre ampla gama de temas, com mobilização de praticamente todos os setores das chancelarias. Esse exercício bem serviu, até o momento, para aprofundar o conhecimento mútuo e estabelecer as bases de uma cultura de interação política entre os três países.

Procura-se, ademais, sempre que possível, manter-se uma coordenação com a Índia e a África do Sul em fóruns multinacionais, no que diz respeito a áreas que possam reforçar posições de interesse mútuo.

b) Cooperação Setorial

Trata-se da cooperação em áreas definidas como de interesse para o fortalecimento do relacionamento trilateral. De regra, transbordam os limites das chancelarias para envolver outros órgãos da administração pública. Cada setor está estruturado em um Grupo de Trabalho (GT). Os GTs reúnem-se, algumas vezes, em nível ministerial.

Há atualmente 16 Grupos de Trabalho no IBAS: (a) Administração Pública; (b) Administração Tributária - Receitas; (c) Agricultura; (d) Assentamentos Humanos; (e) Ciência e Tecnologia (e Pesquisa Antártica); (f) Comércio e Investimentos; (g) Cultura; (h) Defesa; (i) Desenvolvimento Social; (j) Educação (incluindo Academias Diplomáticas e Cooperação Esportiva); (k) Energia; (l) Meio Ambiente e Mudança Climática; (m) Saúde; (n) Sociedade da Informação; (o) Transporte; e (p) Turismo.

A dinâmica que deu impulso à ampliação das áreas de atuação do Fórum ainda não se esgotou. Além dos Grupos de Trabalho indicados, o diálogo trilateral tem

ocorrido informalmente em outras áreas, havendo, em alguns casos, propostas para o estabelecimento de novos GTs, como: (q) Questões de Gênero (Mulher); (r) Pequenos Negócios; (s) Cooperação Sindical, (t) Sistemas Carcerários, (u) Obras Públicas e Infraestrutura, (v) Relações Federativas, (w) Temas Florestais, (x) Desarmamento e Não Proliferação e (y) Propriedade Intelectual, perfazendo, assim, 25 áreas de atuação.

A fim de aumentar a eficiência dos GTs, particularmente em algumas áreas carentes de impulso, o Brasil apresentou na reunião de Somerset West, proposta de agrupar os temas de cooperação em número menor de estruturas, o que seria feito por meio do agrupamento dos GTs em seis “clusters”, ou Comissões. A Chancelaria de cada país-membro teria a responsabilidade prioritária de acompanhar o andamento de duas Comissões e deveria auxiliar os responsáveis por cada tema de cooperação, sempre que solicitada ou sempre que identificar a necessidade de fazê-lo. A proposta do Brasil – ainda em exame pela África do Sul e Índia- contempla as seguintes seis Comissões: (1) Administração Pública (incluindo cooperação na área carcerária e relações federativas); (2) Agricultura; (3) Temas Sociais (incluindo Assentamentos Humanos, Desenvolvimento Social, Saúde, Obras Públicas, Água e Saneamento e Questões Trabalhistas); (4) Educação e Cultura (incluindo Cooperação Esportiva); (5) Temas Científicos e Energia (incluindo, além de C&T, Pesquisa Antártica, Sociedade da Informação, Meio Ambiente, Mudança do Clima, Florestas e Energia); (6) Temas Econômicos e Comerciais (além de Comércio e Investimento, Turismo, Transporte, Pequenos Negócios e Administração Tributária). Os temas de defesa e de cooperação entre as academias diplomáticas ficariam, em razão de sua natureza, fora das Comissões.

c) Iniciativas Gerais de Aprofundamento e Disseminação

Visando a expandir e enraizar o processo de aproximação entre a Índia, o Brasil e a África do Sul, as Chancelarias dos três países conceberam ações para envolver no IBAS entidades de fora da esfera do Poder Executivo. Surgiram, então, várias iniciativas, algumas pontuais, e outras que se têm prolongado em edições sucessivas. Essas iniciativas podem ser assim compiladas: Seminário sobre Desenvolvimento Econômico com Equidade Social; Fórum de Empresários; Fórum de Mulheres; Fórum de Parlamentares;

Seminário de Acadêmicos; Fórum de Editores e eventos culturais. Há sugestão de envolvimento de outros setores nessa vertente do IBAS, por exemplo, sindicatos.

Caberia, finalmente, mencionar a existência, no âmbito do GT de Defesa do IBAS, do IBSAMAR, exercícios navais que envolvem as Marinhas dos três países. A primeira operação IBSAMAR foi realizada em maio de 2008 na costa da África do Sul.

V - A cooperação Sul-Sul e o Fundo IBAS:

No contexto da Iniciativa sobre a Erradicação da Fome e da Pobreza, conduzida pelo Brasil em paralelo à 58ª Assembléia Geral das Nações Unidas, em setembro de 2003, Índia, Brasil e África do Sul indicaram ao PNUD sua disposição de associarem-se a projetos de média escala, passíveis de serem replicados e disseminados em outros países. A fonte dos recursos poderia ser o Fundo de Solidariedade Mundial (FSM), de iniciativa da Tunísia, com recursos dos Governos, admitindo-se também contribuições da sociedade civil e do setor privado. No entanto, embora não descartada essa possibilidade de utilização do FSM, explorou-se a alternativa de abertura de uma “janela específica” dentro do FSM, ou mesmo independentemente. Indicou, porém, o PNUD, sua capacidade de desenhar um novo mecanismo financeiro, sob a forma de um fundo fiduciário, com objetivos, características e governança específicos.

O “Fundo IBAS de Combate à Fome e à Pobreza” foi então formalmente estruturado em 28 de maio de 2004, ficando o PNUD incumbido de sua administração.

De fundamental importância, até mesmo por comportar certo grau de ineditismo em relação ao círculo tradicional de doadores, o Fundo é mantido com recursos financeiros provenientes dos três países, que contribuem anualmente com US\$ 1 milhão.

Norteiam o processo de aprovação dos projetos do IBAS os princípios de “ownership”, por parte do país beneficiário, de “auto-sustentabilidade”, para além de adequação ao objetivo central do Fundo, o do “alívio e mitigação da pobreza”, e de “replicabilidade”.

O primeiro projeto financiado pelo Fundo foi realizado na Guiné-Bissau e destinou-se ao desenvolvimento da agricultura e pecuária, atividades econômicas naquele

país que contribuem com quase 70% do PIB e que empregam mais de 85% da população ativa. Orçado em US\$ 550 mil, teve início em dezembro de 2004 e foi finalizado em junho de 2007.

Outro projeto importante financiado pelo Fundo IBAS foi o de “Recolhimento de Lixo Sólido”, no Haiti, desenvolvido em duas fases, sendo que a primeira delas, já concluída e a segunda, em andamento, com a possibilidade inclusive de vir a ser expandido para outras localidades do país.

Em dezembro de 2006, o “Prêmio Parceria Sul-Sul para Aliança Sul-Sul” foi conferido ao Fundo IBAS, em cerimônia na sede das Nações Unidas, no contexto da celebração do Dias das Nações Unidas para a Cooperação Sul-Sul.

Além da implementação de novas fases dos projetos realizados no Haiti e na Guiné-Bissau, foram aprovados novos projetos em outros países, tais como na Palestina (Complexo Esportivo), no Burundi, no Laos, entre outros.

A fim de otimizar a utilização dos recursos disponíveis do Fundo, os representantes dos Pontos Focais do IBAS reuniram-se, em julho de 2008, com os responsáveis pelo tema na Unidade Sul-Sul do PNUD, com o objetivo de adotarem práticas mais expeditas e eficazes no gerenciamento do Fundo e na identificação e condução dos projetos de cooperação.

VI - A Zona de Livre Comércio MERCOSUL-ÍNDIA-SACU

O sucesso econômico dos países do Sul não pode depender simplesmente do acesso aos mercados do Norte, ou destes últimos como fonte exclusiva de capitais produtivos. Assim como as carteiras de investimento privado buscam diversificar as aplicações entre diversas opções de ações e bônus de países desenvolvidos e emergentes, assim também o portfólio comercial de um país não pode se concentrar nos fluxos tradicionais, mas deve buscar a conquista de posições nos mercados que mais crescem, justamente os dos países em desenvolvimento.

O segundo elemento é, de certa forma, consequência do primeiro, pois a busca de novos laços econômicos Sul-Sul já não depende, em muitos casos, dos esforços individuais de países, mas de blocos regionais. Este é evidentemente o caso do

MERCOSUL, que desde o início foi concebido não unicamente como um processo de integração entre seus membros, mas também como uma entidade negociadora destinada a alavancar o relacionamento comercial desses membros com parceiros externos.

Nesse cenário nasceu a idéia de constituição, no âmbito do IBAS, de uma Área de Livre Comércio entre o MERCOSUL, a Índia e a SACU (União Aduaneira da África Austral). As três partes trabalham atualmente no estabelecimento de um Grupo de Trabalho para examinar os possíveis formatos desse que seria um dos mais relevantes acordos comerciais do mundo, na medida em que formaria a maior área de livre comércio do mundo em desenvolvimento, com quase um bilhão e meio de pessoas e um PIB de mais de dois trilhões de dólares.

A II Cúpula do IBAS (17/10/2007) avançou na consolidação da iniciativa de negociação desse acordo comercial, que contou também com o apoio dos empresários ali presentes, que emitiram uma declaração assinalando que o Fórum Empresarial do IBAS acolhia com satisfação a intenção dos três governos de explorarem a possibilidade de negociação de um acordo trilateral de livre comércio Índia-MERCOSUL-SACU, e solicitando que o setor privado pudesse ser consultado em relação ao tema, inclusive durante as discussões preliminares sobre sua viabilidade.

Trata-se de um conceito ambicioso, é certo, mas que corresponde à necessidade muito presente de formação de novas alianças comerciais, indispensáveis aos projetos de desenvolvimento e ao elevado perfil internacional dos países envolvidos.

O potencial das trocas entre MERCOSUL, Índia e SACU é enorme, não somente pela dimensão de suas economias e populações, como também pelo dinamismo de seus setores privados, pela crescente capacitação tecnológica, pela posição-chave que ocupam em seus respectivos continentes e pela coincidência de políticas ativas voltadas para o desenvolvimento social e econômico. Os setores produtivos são, em grande parte, complementares, e em muitas áreas podem rumar para uma integração que lhes permita melhor concorrer em terceiros mercados. Os investimentos recíprocos vêm crescendo acentuadamente nos últimos anos, e certamente se ampliariam no quadro de uma negociação comercial profunda como a que se pretende implementar.

O Brasil está especialmente empenhado em levar adiante a idéia do acordo trilateral do MERCOSUL com a Índia e a SACU. Trata-se, naturalmente, de um projeto

de longo prazo de maturação, mas que encontra suas bases nos acordos de preferências comerciais MERCOSUL-Índia e MERCOSUL-SACU, bem como no Acordo Índia-SACU em fase de elaboração. Uma rede de interesses mútuos já se está assim formando, atraindo crescente interesse dos setores privados e gerando negócios.

Em seu discurso na cerimônia de abertura da II Cúpula do IBAS, o Presidente Lula reiterou o compromisso brasileiro em oferecer, nas negociações trilaterais, tratamento diferenciado aos países africanos com economias vulneráveis.

A iniciativa trilateral conta, ainda, com importante respaldo político do IBAS, e compartilha com esse Fórum o caráter inovador, criativo e ao mesmo tempo flexível, o que contribuirá para que se encontrem soluções adequadas.

VII- Perspectivas

O IBAS foi criado na hora certa e veio para ficar. Perseverança, paciência e criatividade serão necessários no seu processo de organização e consolidação. Trata-se de um processo não necessariamente linear. Os dividendos são consideráveis e Índia, Brasil e África do Sul, cada qual com seu ritmo e peculiaridades, evidenciam a disposição necessária para empreender todos os esforços para sua consecução plena. Os três países são parceiros fundamentais na expansão de seus respectivos projetos nacionais e internacionais. Trata-se de um real empreendimento, que é, certamente, uma das maiores iniciativas da diplomacia dos três países para o futuro, um desafio a que voluntariamente se submeteram para ampliar suas respectivas inserções internacionais.

O estabelecimento do IBAS teve certo efeito catalisador na nova arquitetura do G-8, como, aliás, reconhecidamente teve na formação do G-20 sobre temas agrícolas. A menos que um grupo de países do Sul tivesse decidido colocar seu peso num processo similar ao de consultas estabelecido entre as grandes economias do Norte, é possível que não se lograsse sedimentar tão rapidamente, na forma do esquema ad hoc G-8 + 5, o diálogo com os países do Sul.

Índia, Brasil e África do Sul estão determinados a fortalecer um fórum que expressa a aposta dos três em um mundo melhor. Nessa tarefa, contam com o engajamento de seus governos, de seus parlamentos, e da sociedade civil bem como do setor privado.

O IBAS encurta distâncias, aproxima povos e continentes, mas, sobretudo, forja uma visão solidária do futuro, coerente, aliás, com a filosofia da tolerância e da não-violência, pregada por Mahatma Gandhi e Nelson Mandela.

A especificidade e grandeza do IBAS, como iniciativa trilateral, repousam em seu fundo essencialmente político. O que o torna de fato especial é a decisão política de três países do Sul, com perspectivas e aspirações similares em muitas questões vitais da agenda internacional, de combinar esforços e de sistematizar uma aproximação política que, antes do IBAS, se processava de maneira só espontânea. A sistematização se tem feito de modo tão completo quanto possível, envolvendo consultas políticas, maior coordenação multilateral, exploração de perspectivas de ampliação do intercâmbio comercial, e mesmo, por meio do referido Fundo de Combate à Fome e à Pobreza, iniciativa em prol da solidariedade internacional, que, ainda que modestamente, altera a geografia de doadores e receptores de ajuda internacional. Para que isso pudesse ocorrer, o diálogo entre os três países era -e continua sendo- condição necessária.

Por meio do IBAS, que como disse o Presidente Lula, “veio para ficar”⁵, o Brasil dobra o Cabo da Boa Esperança e redescobre o Caminho das Índias.

⁵ Declaração do Presidente Lula à imprensa brasileira antes de sua partida para II Cúpula do IBAS na África do Sul, em outubro de 2007.

ANEXOS

Acordos existentes no âmbito do IBAS

- Plano de Ação sobre Facilitação de Comércio em Normas, Regulamentos Técnicos e Avaliação de Conformidade, em vigor desde 13 de março de 2006;
- Acordo Trilateral sobre Transporte Aéreo, acordo inédito, firmado em 13/09/2006, que cria as condições para que se faça a ligação aérea entre Índia, África do Sul e Brasil, unindo, dessa maneira, não apenas três países, mas três continentes;
- Acordo Trilateral sobre Navegação Mercante e outros Assuntos relacionados ao Transporte Marítimo firmado em 13/09/2006;
- Acordo que cria uma “Estrutura de Cooperação em Sociedade da Informação”, firmado em 13/09/2006;
- Memorando de Entendimento sobre Cooperação Trilateral em Agricultura e Áreas Afins, celebrado em 13/09/2006;
- Memorandum de Entendimento para o Estabelecimento de Força-Tarefa Trilateral sobre Combustíveis, firmado em 13/09/2006;
- Memorandum de Entendimento para cooperação nas áreas de Administração Pública e Governança, firmado em 17/10/2007;
- Memorandum de Entendimento sobre Cooperação Cultural, firmado em 17/10/2007;
- Memorandum de Entendimento sobre Cooperação em Recursos Eólicos, firmado em 17/10/2007;
- Acordo sobre Cooperação das Administrações Aduaneiras e Tributárias da Índia, Brasil e África do Sul, firmado em 17/10/2007;
- Memorandum de Entendimento na Área de Temas Sociais, firmado em 17/10/2007;
- Memorandum de Entendimento em Cooperação na Área de Saúde e Medicina, firmado em 17/10/2007.

Cronológico de Reuniões de Alto Nível do IBAS

2003 a 2005

Brasília, 6 de junho de 2003

Declaração de Brasília

Emitido pelos Chanceleres

Nova York, 23 de setembro de 2003

Comunicado de Nova York

Emitido pelos Chanceleres por ocasião do encontro de Chefes de Estado e de Governo em paralelo à 58ª. AGNU

Nova Délhi, 12 e 13 de fevereiro de 2004

Guidelines for Action

I Reunião de Pontos Focais

Nova Délhi, 4 e 5 de março de 2004

Agenda for Cooperation e Plan of Action

I Comista

Nova York, 23 de setembro de 2004

Comunicado à imprensa –

Emitido pelos Chanceleres por ocasião do encontro de Chefes de Estado e de Governo em paralelo à 59ª. AGNU.

Nova Délhi, 29 e 30 de novembro de 2004

Agreed Minutes of the 2nd Meeting of IBSA Focal Points

II Reunião de Pontos Focais

Cidade do Cabo, 10 e 11 de março de 2005

Cape Town Ministerial Communiqué e IBSA Final Full Report – Sectoral Groups (Confidencial)

II Comista (houve encontro de Pontos Focais. Foi a III Reunião de Pontos Focais, da qual não houve documento emitido)

Rio de Janeiro, 3 e 4 de agosto de 2005

Agreed Minutes of the 4th Meeting of IBSA Focal Points

IV Reunião de Pontos Focais (Em paralelo ao Seminário sobre Desenvolvimento Social)

Vereeniging, 24 e 25 de novembro de 2005

Agreed Minutes of the 5th Meeting of IBSA Focal Points

V Reunião de Pontos Focais

2006 e 2007

Rio de Janeiro, 28 a 30 de março de 2006

Rio de Janeiro Ministerial Communiqué e Report of The Sectoral Working Group

III Comista

Brasília, 21 e 22 de junho de 2006

Agreed Minutes of the 6th Meeting of IBSA Focal Points

VI Reunião de Pontos Focais

Brasília, 17 e 18 de agosto de 2006

Agreed Minutes of the 7th Meeting of IBSA Focal Points

VII Reunião de Pontos Focais

Brasília, 13 de setembro de 2006

1st IBSA Summit Joint Declaration

I Cúpula de Chefes de Estado e Governo do IBAS

(Houve reunião de Pontos Focais (VIII Reunião) a Cúpula, sem que fosse emitido Comunicado)

Nova Délhi, 16 de julho de 2007

IBSA Focal Points Meeting

IX Reunião de Pontos Focais

Nova Délhi, 16 e 17 de julho de 2007

New Delhi Ministerial Communiqué

IVComista

Sun City, 16 a 18 de setembro de 2007

Draf Report/ Agreed Minutes

10ª. Reunião de Pontos Focais

Nova York 26 de setembro de 2007

Comunicado Conjunto de Imprensa

Encontro de Chanceleres do IBAS em paralelo a 62ª. AGNU.

Joanesburgo, 16 de outubro de 2007

11ª. Reunião de Pontos Focais (não houve Ata)

Tshwane, 17 de outubro, de 2007

Tshwane Declaration

II Cúpula de Chefes de Estado e Governo do IBAS

2008

Somerset West, 8 a 10 de maio de 2008

Agreed Minutes of the 12th IBSA Focal Points Meeting, Somerset-West

12ª. Reunião de Pontos Focais

Somerset West, 11 de maio de 2008

Sommerset West Ministerial Communiqué - V Comista



2.

Draft % do not Quote IBSA: Overview and Perspectives







2.

Draft % do not Quote IBSA: Overview and Perspectives¹

Zélia Campbell²



The India – Brazil South Africa Dialogue Forum (IBSA) has been in operation for a mere five years but, in this short span of one lustre, it has achieved remarkable coherence. Perhaps this is owing to the fact that, at its inception, the parameters which were set were in no way too ambitious or overreaching. The partnership operates in the form of a [First] Joint Trilateral Commission with yearly meetings of their foreign ministers, complemented by sector meetings, also at ministerial level. The Trilateral Commission allows the three countries to have extensive consultations. Several trilateral sectoral meetings have taken place involving ministries of defence and security, science and technology, health, transport, etc. In fact, IBSA is concerned with a plethora of current issues which are particularly relevant to developing countries, namely, poverty alleviation, social and economic development, social delivery (social accountability?), employment creation, advancement of women, etc. Although IBSA does not have formalized structures such as a Secretariat or a Headquarters, it remains a functional and lively institution. This is also because of a great deal of rapport among its members, and the essential dimension of political will behind it. Aside from the scheduled meetings, IBSA partners meet at every given opportunity, on the fringes of other scheduled events (e.g. the United Nations [UN] General Assembly, the G8, etc.).



This paper will attempt to give an overview of IBSA as a meaningful player in multilateral forums, as well as highlight some of its accomplishments and possible difficulties in the near future, owing to global uncertainties, as well as more localized problems in the countries concerned and their regions. In so doing, clearly one has to be aware of

¹ Paper to be presented at the IBSA Academic Seminar, IPRI / Fundação Alexandre de Gusmão, Rio de Janeiro: 29 August 2008.

² Zélia Campbell is the Retired Head of the Unisa Centre for Latin American Studies at the University of South Africa. She is currently an independent analyst.

the pitfalls of over-interpretation of recent historical events, bearing in mind the aphorism that “a week is a long time in politics...”

IBSA was launched at a meeting of foreign ministers of the three countries in Brasília on 6 June 2003. The ministers were: Mr Celso Amorim of Brazil; Mrs Nkosazana Dlamini-Zuma of South Africa; and Mr Yashwant Sinha of India. In the resulting Brasília Declaration (2003) the ministers agreed that it is important that the three ‘vibrant democracies’ from three developing regions of the world, which are at the same time world actors, examine important themes of the international agenda as well as those of mutual interest. It was agreed to create the first Joint Trilateral Commission which in turn should recommend that the members’ respective heads of state and government hold a trilateral summit meeting.³ Since then, two heads of State summits have taken place (in September 2006 in Brasília and in October 2007 in Tshwane / Pretoria), with the incumbent Heads of State and/or Government, President Luiz Inácio Lula da Silva, of Brazil, President Thabo Mbeki, of South Africa, and Prime Minister Manmohan Singh, of India; the third summit will take place in New Delhi in October(?) 2008.

This trilateral strategic partnership, although not conceived to be exclusive at the beginning, for it was mooted to even include China and Russia, is one of the most important initiatives involving three regional powers which are also three great democracies (with India being the largest democracy in the world today), as well as three developing countries engaged in getting a better deal for the developing world at multilateral forums. In addition, India, Brazil and South Africa are committed to reform in the United Nations and its Security Council.⁴ It is important to bear in mind that the three countries already had instituted bilateral commission among themselves. However, a trilateral *modus operandi* might give a far broader operational clout and the experiment seemed worthwhile. Three like-minded countries could always co-ordinate their positions and present a united front in important multilateral organizations. This is also because of the IBSA countries’ commonalities and place in the current world order (See Table I).

³ Roelofse-Campbell, Zélia. 2003. “Brazil and the creation of the IBSA Dialogue Forum” *Unisa Latin American Report*, Vpl. 19, No 2: 26.

⁴ *Id. Ibid.*

All three are strategically positioned in their own subcontinents and, together, carry considerable economic weight in economic terms: their combined GDP in purchasing power parity (PPP) is close to US\$ 5 trillion. Two of the countries (India and Brazil) have continental proportions and occupy large land masses, while South Africa is strategically important for its geo-strategic position, being a geographical hinge between the South Atlantic, which is Brazil's 'natural zone of interest', and the Indian Ocean, India's 'natural zone of interest'. Culturally, South Africa could act as 'cultural' facilitator between its partners, as it prides itself of having large Indian and Lusophone populations.⁵

TABLE I: The IBSA partners

Item / country	India	Brazil	South Africa
Official Name	Republic of India	Federative Republic of Brazil	Republic of South Africa
Land area	3,287,590 km ²	8,547,404 km ²	1,221,404 km ²
President	Pratibha Patil, elected 2007 *	Luiz Inácio Lula da Silva, elected 2002	Thabo Mbeki, elected 1999
Capital	New Delhi	Brasília	Pretoria (Executive) Cape Town (Legislative) Bloemfontein (Judiciary)
National structure	Democratic federal republic, 28 states and 7 union territories	Democratic federal republic, 26 states plus federal district	Democratic republic, nine provinces**
Currency	Rupee	Real	Rand
Exchange rate US\$1.00 at end 2005	Rs45.07	R\$2.34	R6.35
GDP	US\$727 billion (2005/06 est.)	US\$768 billion (2005)	US\$237 Billion (2005 est.)
GDP growth	8.1% (est.) in FY 2005/06	2.3% (2005)	4.9% (2005 est.)
Income per capita	US\$667	US\$4,174	US\$3,453 (2003)
Foreign reserves	US\$134 billion	US\$54 billion	US\$27.7 billion (Sep/05)
Total imports	US\$109 billion (2004/05)	US\$74 billion (2005)	US\$55 billion (2005)
Total exports	US\$81 billion (2004/05)	US\$118 billion (2005)	US\$52 billion (2005)
Foreign debt	US\$120 billion (2005 est.)	US\$110 billion (Sep/05)	US\$46,1 billion (June 2005)
Inflation	4.4% (2005)	5,25% (IPCA, Mar/06)	3.9% (average 2005)
Population	1.09 billion	184 million	46.9 million
Population aged 0-14	31.2%	27.9%	30.3%
Infant mortality	5.6%	2.7% (2004)	8%
Unemployment	9% (2005)	9.2% (Jan/06, metropolitan regions)	26.2% (Sep/05)
Life expectancy (years)	64/64 M/F	68/75 M/F	50/53 M/F
Main languages	Hindi, English, Hindustani, 14 others	Portuguese	IsiZulu, IsiXhosa, Afrikaans, Sepedi, English, Setswana, Sesotho, Xitsonga
Main religions	Hindu, Muslim	Christian	Christian, Muslim

*Updated

**Amended

Source: Brazil. A brand of Excellence Ministry of External Relations, March, 2006, p. 9.

⁵ *Id. P. 27.* Furthermore, one could refer to a sizeable "Indian Diaspora" in South Africa. At the same time, the "African Diaspora" to Brazil today accounts for almost half of the country's population, which are Afro-descendants.

However, IBSA did not arise from a vacuum. Since the beginning of the 1990s, after the fall of the Berlin wall and the then reality of a uni-polar world, developing countries had to face a scenario of an asymmetrical economic playing field within an increasing globalizing world economy. In order to be better equipped to demand a better deal in international forums, it then became clear that developing countries had to unite as blocs. This has become essential in order to redress the imbalances in international trade. Regional blocs became a reality.

In this world of asymmetric economic power relations, developing countries had often felt marginalised, especially in the difficult World Trade Organization (WTO) discussions, since its creation in 1995. In the preparations leading to the WTO's ministerial meeting at Cancún in 2003, it became clear to the now IBSA countries that, should developing countries wish to have their voices heard, they had to unite and co-ordinate their positions at the. Thus the G20 (also known as the G20+) was born, having as its nucleus the three countries which would consolidate as IBSA, plus China, Argentina, Mexico and Egypt. The key countries of the G20 had also been meeting before, in more informal ways, but then the necessity to act in a more co-ordinated manner became apparent.

The IBSA countries also formed the nucleus around the NAMA 11 group, also formed at the WTO. The group engages in negotiations for Non Agricultural Market Access. The NAMA countries oppose the demands of developed countries for drastic industrial tariff cuts by developing countries; this is regarded as an anti development step by developing countries.

One can then say that IBSA emerged as an even more articulated group out of the G20. And although trade liberalisation and trade relations are included in the group's objectives, political aspirations are at the core of the initiative. They affirmed their resolve to uphold the Rule of International Law and agreed on the need for reform of the United Nations. And reform of the UN means also reform of the Security Council (SC), which should include developing countries among its permanent members. Brazil and India made a point of supporting each other's candidacy, as members of the G4 (with the further inclusion of Germany and Japan). India and Brazil were adamant that South Africa should also join the group, but the

country had to abide by African Union guidelines, preventing it from fielding its candidacy on its own.⁶

IBSA has attracted a great deal of interest from many different quarters, and much has been written, said and speculated about it. However, one should be clear from the outset on what IBSA is and what it is not. It is not a formal organisation; it has no headquarters or secretariat; it is not a bloc, nor an alliance. It is, rather, an alignment of like-minded countries in similar stages of development, a mechanism which allows the governments of the three countries to co-ordinate their positions on important issues and to speak with one voice on important international issues. And also to determine those areas in which co-ordination is not possible.⁷ As they are among the largest and most strategically positioned developing countries, their co-ordination will make a greater impact in discussions with economically more powerful interlocutors. They also provide a platform and induce a climate whereby three culturally so different countries can get to know each other and, in the process, develop an atmosphere of mutual trust. This is not a minor objective. Trade and concrete co-operation can only flourish if the three nations understand each other better. This greater understanding will in time filter through to society as a whole, leading to more and wider co-operation on many levels. The business communities of the three countries have already created their own forums in order to better understand each other and foster commerce. A business forum was initiated in parallel with IBSA's First Summit in Brasília (2006), as well as an academic seminar. These initiatives continued around the Second Summit in Tshwane / Pretoria (2007), with the addition of a women's forum. There is also a resolve to improve transport links between the three countries, and this will result in more and more people travelling as tourists, researchers, or traders.

Trade was at the forefront of ministerial meetings, gaining prominence since the third gathering in Rio de Janeiro in 2006. A greater resolve was displayed to work

⁶ See Roelofse-Campbell, Zélia "Some insights into the IBSA Dialogue Forum" in *Synopsis*, Policy Studies Bulletin of CPS (Centre for Policy Studies), Volume 8, Number 2, August 2006. p. 12.

⁷ *Id.* p. 13. See also Pal, Satyabrate. "Perspective from the Government of India % Statement to the Colloquium on IBSA at Unisa" in *Unisa Latin American Report*, Vol. 22, Nos 1 & 2, 2006.

even harder in order to make a free trade area between Mercosul, SACU⁸ and India a reality. To this effect, it will be necessary to get a Trilateral Preferential Trade Area off the ground as soon as possible. Since IBSA's creation, Brazil has increased its trade with India by 380% and with South Africa by 317%. The aim is to multiply total trade among the parties to reach US\$ 15 billion in a few years time (from the current US\$ 4 billion).

Negotiations for the creation of a Free Trade Area Between Mercosur and SACU, Mercosur and India, and SACU and India are plodding on. Recently, SACU and Mercosur completed the technical negotiations in order to more than double the current list of products exempted from tariff barriers; however, these do not include the all-important automotive industry, because South Africa insists on keeping its tariff barriers so as not to compromise the Motor Industrial Development Programme.⁹

Co-operation in the field of transport is also progressing well, especially with the agreements on maritime and air transport. The same applies to science and technology, where a broad framework for co-operation has been initiated, including space. And in the agricultural sector there is much progress, in spite of the countries' competition with each other in many spheres of agriculture. In defence, co-operation became visible with the first IBSA-Mar Naval Exercises, which took place off the coast of Cape Town in May 2008.

One important, albeit symbolic initiative, was the creation of an IBSA Trust Fund. At the second ministerial meeting in Cape Town in 2005, it was agreed to increase the IBSA fund from a total capital of \$300 000 (\$100 000 donated by each country) to \$3 million (\$1 million each). The IBSA fund exists to help least developed countries and its first development projects areas underway in Guinea-Bissau, in Haiti and in East Timor (all very poor countries in the three IBSA regions). All three IBSA countries see the fund as being of great symbolic importance and, at the third ministerial meeting in 2006, they committed themselves to donate at least US\$ 1 million each annually to the fund. The Guinea-Bissau project has received international recognition

⁸ Mercosul, the Common Market of the South, comprises Argentina, Brazil, Paraguay and Uruguay, with associated members Bolivia and Chile, while Venezuela awaits ratification as a full member. SACU is the Southern African Customs Union, comprising South Africa, Botswana, Lesotho, Namibia and Swaziland.

⁹ Le Roux, Mathabo. "Trade accord boosts Latin America ties", in *Business Day*, posted on the Web on: 30 June 2008.

As part of the IBSA initiative, the three countries are also seeking to promote trilateral scientific and technological research and development (R&D). Six major areas were identified, including biotechnology, information technology, and energy, and these could increase to eight. This is in parallel with the development of bilateral R&D co-operation between South Africa and Brazil. In 2003, a South African scientific and technological delegation visited Brazilian R&D institutions, and, the following year, an equivalent Brazilian delegation visited SA's R&D centres. Although not a defence alliance, IBSA is also seeking to develop defence, defence technology and defence industry co-operation between the three countries.

After five years, the IBSA states can be encouraged by the fact that the initiative has not fizzled out but, rather, seems to be broadening and deepening as more and more South African, Brazilian and Indian leaders and officials meet to have unofficial IBSA meetings on the side of international conferences and meetings of international agencies.

There is an upbeat spirit regarding the IBSA initiative. This is because it has shown that South-South co-operation can really work and lead to great benefits for the developing world.

IBSA has in fact become a powerful political tool. The political emphasis is important in ensuring that IBSA becomes a 'State' policy, and not merely a government policy in all three partner-countries. This has already been proven by India, where a change of government did not affect IBSA in the least.¹⁰

It is clear that the creation of IBSA was engendered by the three countries' level of trust at the foreign policy level. It is at this level that the ideas are first mooted and the importance of the annual trilateral ministerial meetings is a reality. All three countries' foreign policies reflect the core of their national interests and the need to promote economic viability, especially through the promotion of international trade, and social development. In this regard, the institutions which are responsible for foreign policy will themselves have to have the professionalism and independence which could allow IBSA flourish without ideological or other constraints.

¹⁰ Campbell, Keith. "Steady Progress. Trination alignment forges ahead", in *Engineering News*. September 2-8, 2005: p.8.

Brazil's Ministry of External Relations (Itamaraty) is traditionally an example of continuity and coherence in its workings, in spite of several changes of government over the decades. India has also displayed professionalism in this regard, as was mentioned, since IBSA was created under a nationalist government, but was able not only to survive, but to flourish with the new coalition government dominated by the Congress Party. In South Africa the situation is different in a way, because it is the youngest of the three democracies and there has not yet been (and this does not seem feasible in the medium to long term) a change of ruling party.

The above is important because there are decisive elections in all three countries in the near future. South Africa will have general elections in the first half of 2009. Although a change of government is not on the cards, as the ruling party has proved to be firmly in power, and the opposition is small, a powerful 'opposition' within the ruling party has come to being. The President of the ruling party, the African National Congress (ANC) should as a rule become the President of the country. But, at the ANC conference last December (2007), President Thabo Mbeki was unseated as ANC chief in favour of Jacob Zuma, who had been dismissed as Deputy President around allegations and charges of corruption. The factionalism which ensued is of a vicious nature and, should Mr Zuma succeed Mr Mbeki as President of South Africa next year, one cannot yet foresee how this would affect specific issues related to foreign policy, especially if it is perceived that an initiative such as IBSA is deeply connected to the person and ideas of Mr Mbeki.¹¹

In Brazil, in the elections of 2010, even if a new government gets elected, IBSA should survive.

However, another dimension which arises from the partners' respective foreign policies, is their resolve and commitment to reform at the UN and specifically, the Security Council (SC). Again, Brazil has, over the decades, had an illustrious sojourn as a non-permanent member of the SC. It is the country that served more times than any other as non-permanent member (nine times in total, to-date). India, likewise, has served a total

¹¹ It is generally acknowledged that, as a concept, the partnership between India, Brazil and South Africa was originally mooted by President Thabo Mbeki. Brazil took the idea forward when the three foreign ministers were gathered in Brasília in June 2003.

of six two-year terms (according to own calculation). South Africa, on the other hand, made its debut as non-permanent member of the SC at the beginning of 2008. Its position has been criticized on a number of occasions for being excessively normative and prescriptive, in favour of the perpetuation of certain anomalies in rogue states.¹² Here, again, there are certain imponderables which could have future consequences for the country's international image and its aspirations for a permanent seat on the SC.

Regarding IBSA as a multilateral mechanism, the three countries have all made multilateralism a foundation of their foreign policies. However, today's world is in a situation of global economic turmoil and all countries have had to face serious economic problems internally. The rise in the oil price has affected all alike. Inflation has become a factor to be reckoned with. India and South Africa are both grappling with double digit CPI inflation figures reaching almost 12%. And Brazil's inflation has been rising steadily.

Since the Second Summit, the three leaders put forward an awareness regarding the "disproportionately high impact of Climate Change on developing countries". At the same time, they resolved to co-operate in the development of renewable sources of energy, biofuels and biomass, an area which is becoming increasingly important.¹³

The recent talks of the WTO, in July 2008, in which an attempt was made to round off the Doha development round, ended in failure. It became apparent that the G20 had lost its former momentum. A new system was introduced, whereby a group of seven powerful economies would make proposals on behalf of all other members. This group of seven included only Brazil, India and China from the developing world. The rest of the G20 had to rely on those three to put their interests forward. According to reports, Brazil made a great effort to get an agreement but, in the end, India remained adamant not to give in so as not to prejudice the interests of the Indian poor. South Africa maintained its support for Brazil's stance. Did India break ranks with its IBSA partners on this occasion, at the WTO?

Another phenomenon which surfaced since IBSA was launched is the emergence of the G5, alongside the G8. The G5, comprising India, Brazil, South Africa,

¹² See Caromba, Laurence. "Zimbabwe & the Failure of South African Foreign Policy" in *CIPS Electronic Briefing Paper*, No 45 / 2008.

¹³ Tshwane IBSA Summit Declaration, October 2007.

China and Mexico might be formally included in an expanded G8, to form the G13. That would provide the IBSA countries with another platform to promote South-South co-operation.

One issue that is fortunately not a challenge for the South Atlantic region is nuclear non-proliferation. All the nuclear weapons capable states in the region have abandoned their nuclear weapons programmes and dismantled their facilities. At the First IBSA Summit in Brasília in 2006, a nuclear agreement was signed, to foster nuclear co-operation for peaceful purposes. Since then, India and the United States have been the subject of controversy in the international press regarding their proposed nuclear co-operation agreement. However, in spite of certain disagreements, the IBSA countries continue in their commitment for nuclear co-operation and the elimination of nuclear weapons.

Another important question on which there is trans-South Atlantic consensus is the need to combat drug trafficking and organized crime. South Africa and Brazil already have an agreement in this regard. The challenge remains serious for all concerned and the IBSA countries also foresee co-operation in this regard.

In conclusion, in the past five years, IBSA has proved to be a pragmatic co-ordinating mechanism, seeking concrete results from more powerful players, as well as a better deal for other developing countries. It has become a world actor of note. Ideological and political differences (e.g. over Iran) have not marred discussions or created an atmosphere of mistrust. It is hoped that this will continue in spite of the many problems now facing the three countries and the world.

3.

Desenvolvimento e Cooperação Científica e Tecnológica



3.

Desenvolvimento e Cooperação Científica e Tecnológica

José Monserrat Filho*

“O conhecimento é como a luz. Sem peso e intangível, pode viajar facilmente pelo mundo, iluminando a vida de bilhões de pessoas em toda parte. No entanto, bilhões de pessoas vivem na escuridão da pobreza – desnecessariamente.”

Relatório sobre o Desenvolvimento Mundial, Banco Mundial, 1999

“O mundo tem muito de global e pouco de aldeia”, sugere Renato Ortiz¹. Em verdade, o planeta se debate entre a aldeia e o global. O desenvolvimento, em especial o desenvolvimento sustentável, é questão extremamente aguda nos níveis nacional, regional e local, ou seja, naquilo que chamamos de aldeia, mas depende, em larga medida, da ordem global, de sua correlação de forças e de sua evolução. Enquanto isso, as ações de cooperação – sobretudo de cooperação científica e tecnológica – são administradas no nível internacional, por acordos bilaterais ou multilaterais, mas têm na aldeia e na relação direta entre os aldeões sua base essencial de inspiração e de realização efetiva.

A interação entre desenvolvimento e cooperação científica e tecnológica – tema esboçado ainda no século XIX – assume caráter decisivo no século XXI. Estamos numa encruzilhada: ou este século será do desenvolvimento sustentável de todos ou da grande maioria dos países, e de cooperação internacional intensa e abrangente como jamais se viu, ou nosso planeta e a sociedade humana poderão sofrer impactos destrutivos, físicos e sociais, em escala e com conseqüências hoje difíceis de estimar.

A cooperação científica e tecnológica já não pode consistir apenas em ajuda técnica. Mais do que nunca, deve ser intercâmbio de conhecimento. Às vésperas do

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¹ Ortiz, Renato, *Mundialização: Saberes e Crenças*, Ed. Brasiliense, 2006, p. 79.

novo século, Joseph E. Stiglitz, que em 2001 receberia o Prêmio Nobel de Economia, percebeu com clareza: “Hoje, reconhecemos que o conhecimento não é apenas um bem público, mas também um bem público internacional ou global. Também reconhecemos que o conhecimento é central para um desenvolvimento bem sucedido. A comunidade internacional (...) tem a responsabilidade coletiva de criar e disseminar um bem público global – o conhecimento para o desenvolvimento.”²

Assim, o conhecimento como bem público global – leia-se cooperação científica e tecnológica no século XXI – surge como fator imprescindível para o desenvolvimento sustentável exigido no nosso tempo.

Não por acaso, a Conferência Mundial sobre Ciência, reunida em 1999, fez um apelo, em sua Declaração sobre Ciência e o Uso do Conhecimento Científico “Ciência para o Século XXI – Um Novo Compromisso”³: “No século XXI, a ciência precisa tornar-se um bem compartilhado, beneficiando todos os povos na base da solidariedade; que a ciência é poderoso recurso para se compreender os fenômenos naturais e sociais; e que seu papel promete ser ainda maior no futuro quando a crescente complexidade do relacionamento entre a sociedade e o meio ambiente for mais compreensível”.

O conceito de desenvolvimento sustentável⁴, proposto nos anos 70 pelos países em desenvolvimento como parte de uma almejada (e ainda frustrada) nova ordem econômica internacional, ganhou projeção global diante dos graves desafios econômicos, sociais e ambientais que estremecem o planeta: efeito estufa, mudanças de clima, poluição de rios, lagos, mares e oceanos, destruição de ecossistemas, perda da biodiversidade, sistemas energéticos e produtivos irracionais e predatórios, consumismo desenfreado,

² Stiglitz, Joseph E., *Knowledge as a Global Public Good*, in *Global Public Goods – International Cooperation in the 21st Century*, Edited by Inge Kaul, Isabelle Grunberg and Marc A. Stern, New York: Oxford University Press, 1999, pp. 308-325).

³ A Conferência Mundial sobre Ciência, convocada pela Organização das Nações Unidas para a Educação, a Ciência e a Cultura (UNESCO) e pelo Conselho Internacional para a Ciência (ICSU), realizou-se em Budapeste, Hungria, de 26 de junho a 1º de julho de 1999, com a participação de 1.800 delegados, representando 155 países (entre os quais mais de 60 ministros de Ciência e Tecnologia e de Educação e seus equivalentes), 28 organizações intergovernamentais e mais de 60 organizações internacionais científicas não governamentais. Ver <<http://ftp.mct.gov.br/Temas/budapeste/declaracao.htm>>.

⁴ Sachs, Ignacy, *Desenvolvimento incluyente, sustentável, sustentado*, RJ: Garamond, 2004. Para Sachs, uma das funções principais do Estado nacional é “a promoção de parcerias entre todos os atores interessados, em torno de um acordo negociado de desenvolvimento sustentável.” (p. 11) Ver também

crescimento caótico dos centros urbanos. Reivindica-se novo pacto global⁵, capaz de garantir a satisfação das necessidades básicas tanto das gerações presentes, quanto das gerações futuras – meta jamais fixada antes na história humana.

Parece inviável promover o desenvolvimento sustentável sem a produção de conhecimentos – tradicionais e de ponta – e sem o acesso a eles. Também é preciso definir responsabilidades e encargos nas ações destinadas a realizá-lo. O novo tipo de desenvolvimento exige novas formas de enfrentar e resolver os problemas.

“O desenvolvimento de soluções inovadoras e a busca de soluções viáveis requerem nova postura e nova ética internacional: pela cooperação e colaboração entre grupos e instituições de diferentes países, com conhecimentos e recursos diversificados, responsáveis e atingidos de formas variadas pelas conseqüências ambientais do desenvolvimento; e ainda pelo comprometimento e a participação do setor produtivo em investir e contribuir para o desenvolvimento de alternativas sustentáveis”, afirmam Maria Lucia Maciel e Sarita Albagli⁶.

As duas pesquisadoras perguntam pelas novas brechas capazes de ampliar a circulação de conhecimentos e informações estratégicos ao desenvolvimento sustentável, em escala global, e também pelas novas perspectivas e práticas de cooperação internacional em ciência e tecnologia que levem em consideração este imperativo e superem os estilos predatórios de produção e consumo.

Felizmente, a comunidade humana tende cada vez mais, sobretudo no nível das aldeias, a abandonar em definitivo o “estado de natureza”. Nele, segundo certa visão do conceito hobbesiano, a guerra, os conflitos, o uso da força, as intimidações, as rivalidades, a competição selvagem, a tensão permanente, as imposições constituem a linha central das relações entre os países. Mas eis que, para cobrir a vasta área global,

Veiga, José Eli da, *Desenvolvimento sustentável, o desafio do século XXI*, RJ, Garamond, 2005. Para Veiga, “a humanidade precisa evitar guerras, tiranias, pobreza, assim como degradação desastrosa da biosfera e destuição da diversidade biológica e ecológica. Trata-se de obter qualidade de vida para o homem e para a biosfera que não seja conseguida principalmente à custa do futuro.” (p.168)

⁵ Held, David, *Un Pacto Global*, España, Madrid: Taurus, 2006. Diz Held: “Como a época econômica e militar atual é a primeira com poder para tomar decisões que não apenas afetam a ela como também a todas as épocas futuras, suas escolhas devem ser especialmente cuidadosas, para que elas não se apoderem do direito ao mesmo valor e da capacidade de ação das gerações futuras.” (p. 220)

⁶ Proposta de organização da Oficina “Cooperação Internacional na Era do Conhecimento”, dirigida ao Centro de Gestão e Estudos Estratégicos (CGEE), julho de 2008.

são concebidos e desencadeados novos tipos de guerra⁷. E a carga de agressão ao meio ambiente e de desconsideração da espécie humana clama por novo padrão civilizatório⁸. O massacre global ocorre numa soma incontável de aldeias.

A partir do patamar global, entretanto, a interdependência e a comunicação entre os países crescem de modo exponencial, ampliando os apelos por colaboração maior e mais profunda entre eles, e a consciência pública de sua urgente aplicação. Pessoas e instituições públicas e privadas com mais diversas atividades em todo o mundo aumentam em ritmo acelerado seus laços de interação.

Manuel Castells viu no novo cenário “A Sociedade em Rede”, de natureza universal – um sistema com capacidade de expansão transterritorial praticamente ilimitada, que está mudando a forma, a relevância e o peso das relações entre os indivíduos e os povos, independentemente da distância geográfica.⁹ A interdependência econômica eliminou a capacidade de um país de atingir seus objetivos isoladamente. As aldeias se aproximam, se unem, se alinham. E questionam as perversidades do global.

A partir dos anos 50, floresceu variado conjunto de organizações internacionais – como o Programa das Nações Unidas para o Desenvolvimento (PNUD)¹⁰ – destinadas a lidar com as demandas e oportunidades criadas pela interdependência. As aldeias pressionam. Mudanças ou meias mudanças globais se articulam.

A relação entre as aldeias, porém, segue marcada por profundas desigualdades. E a assimetria de poder na arena global mantém-se firme como realidade brutal, ainda muito longe de ser sequer arranhada por mudanças substanciais.

“A maioria dos benefícios científicos não está distribuída igualmente, como resultado da assimetria estrutural entre os países, regiões e grupos sociais e entre

⁷ Bauman Zygmunt, *War of globalization era*, European Journal of Science Theory, vol. 4, n] 1, 2001.

⁸ Pochmann, Marcio, *Ouro padrão civilizatório*, Folha de S. Paulo, B1, 04/05/2008. Ele escreve: “Outro padrão civilizatório precisa ser constituído no mundo. O ser humano e o ambiente não podem permanecer em segundo plano. A organização da economia deve ser o meio necessário para o atendimento do desenvolvimento humano sustentável, o que significa dizer que os bens não devem ser valorizados intrinsecamente, mas em conformidade com a sua capacidade de produzir o avanço do bem-estar de toda a humanidade com a menor agressão possível ao ambiente. Do contrário, prevalecerão as duas categorias básicas de homens a se manterem no porão do navio: os pobres excluídos da dignidade humana e os ricos condenados à solidão e à lógica da rivalidade.”

⁹ Castells, Manuel, *A Sociedade em Rede*, São Paulo: Paz e Terra, 1999.

¹⁰ Ver <<http://www.pnud.org.br/odm/>>

os sexos. O conhecimento científico tornou-se fator crucial na geração da saúde, e, por isso, sua distribuição tornou-se mais desigual. O que distingue o pobre (povo ou país) de um rico não é apenas que tenha mais ou menos bens, mas também que possa estar excluído da criação e dos benefícios do conhecimento científico.” – afirma também a Conferência Mundial sobre Ciência, em sua Declaração sobre Ciência e o Uso do Conhecimento Científico – “Ciência para o Século 21 – Um Novo Compromisso”¹¹.

Apesar disso, ou por isso mesmo, há tendências importantes de alterações no quadro global, que, em parte, se devem justamente ao fato de que os países precisam cada vez mais uns dos outros. A cooperação cresce e se adensa. É portadora de futuro. China, Rússia, Índia, Brasil e África do Sul estão entre os mais ativos neste processo. Atuam individualmente e em grupo (BRICS e IBAS¹²), movem-se nos principais fóruns e organismos internacionais, debatem os mais graves problemas globais, formulam propostas concretas, viáveis e respeitáveis, projetam agendas de pesquisas estratégicas em novas e alternativas fontes energéticas, fármacos, software e produção de alimentos. O recurso à colaboração entre os aldeões torna-se constante e só faz crescer, ainda que muitas vezes sem êxito aparente.

Ocorre que a cooperação não é “um ato”, é “um processo de longo prazo”, como bem observa o professor argentino Juan Gabriel Tokatlian¹³. E hoje, talvez mais do que nunca, este processo precisa ser conduzido de forma apropriada e transparente, pois, conforme o próprio Tokatlian alerta, ele “pode ser reforçado mediante conquistas e gratificações compartilhadas ou pode esmorecer através de práticas de *free riding* ou mediante a exploração de vantagens individuais”.

¹¹ Ver <<http://ftp.mct.gov.br/Temas/budapest/declaracao.htm>>

¹² BRICS é acrônimo criado em 2001 pelo economista norte-americano Jim O’Neil para designar, de início, os quatro principais países emergentes – Brasil, Rússia, Índia e China –, aos quais depois se juntou a África do Sul. São países com significativas oportunidades de desenvolvimento Ver <<http://brics.redesist.ie.ufrj.br>> IBAS, por sua vez, é a sigla do diálogo entre Índia, Brasil e África do Sul, criado em 2003, para promover o desenvolvimento via cooperação Sul-Sul, especialmente em ciência e tecnologia. Ver <www.ibsa-trilateral.org>

¹³ Tokatlian, Juan Gabriel, *O Cone Sur e suas relações internacionais: um espaço de cooperação para a América do Sul*, Política Externa, vol. 17, nº 1, jun/jul 2008, pp. 49 e 50.

As políticas de cooperação, em verdade, diferenciam-se fortemente entre si e precisam ser avaliadas de modo objetivo e competente. Há que conhecer em profundidade os reais interesses em jogo. É indispensável, não raro, decodificar palavras e conceitos, pois, como Tokatlian também observa com razão, “os países têm interesses que derivam de seus objetivos econômicos (poder material, recursos estratégicos, bem-estar, mercados etc) e de suas metas políticas (ordem, segurança, princípios, prestígio etc): conseqüentemente, a cooperação envolve diferentes tipos de interesse com significados equivalentes.” Há interesses com variados graus de legitimidade. E a legitimidade desponta como critério isento por excelência.

Seja como for, o “espaço de cooperação” entre as aldeias é cada vez maior, ainda que com distintas motivações e diferentes resultados. No Cone Sul, por exemplo, um espaço de cooperação, segundo Tokatlian, “surge da existência de um substrato (político, econômico, militar e social) histórico recente que consolidou muitos valores comuns, vários interesses mútuos e certos objetivos compartilhados.” Isto não descarta a existência de divergências, por vezes significativas, sobretudo na área comercial, que precisam ser tratadas de modo a não prejudicar a tendência geral, muito positiva.

Há exigências cruciais para se erguer um bem sucedido espaço de cooperação: clara distribuição de responsabilidades e estimulante mobilização de recursos, à altura da envergadura dos atores envolvidos. Como frisa Tokatlian, “a moderação, o esforço e a constância são pontos-chave para alcançar e consolidar um espaço de cooperação: só assim seria possível expandir a sua cobertura geográfica e o seu repertório temático.”

O espaço de cooperação espacial construído por Brasil e China nos últimos 20 anos produziu o bem-sucedido programa de satélites de recursos terrestres, que já lançou três deles (CBERS-1, 2 e 2B) e se prepara para lançar mais dois (CBERS-3 e 4). Para o ministro das Relações Exteriores do Brasil, Celso Amorim, este programa “é hoje o maior projeto de cooperação científico-tecnológica entre países em desenvolvimento na área espacial”.

Celso Amorim considera que “o êxito alcançado pelo programa CBERS só foi possível graças ao elevado compromisso político dos dois lados com sua execução plena. Em diversos momentos, o projeto sofreu atrasos consideráveis, sobretudo – mas não apenas – em função de dificuldades financeiras e orçamentárias do lado brasileiro”.

O ministro conta que “pacientes e constantes esforços de negociação diplomática foram necessários com o lado chinês, conduzidos sempre de maneira conjunta pelo Itamaraty, o MCT (Ministério da Ciência e Tecnologia) e o INPE (Instituto Nacional de Pesquisas Espaciais). Obtivemos resultados muito positivos nessas negociações, como, por exemplo, o acordo em torno da utilização do pagamento pelo Brasil dos serviços de lançamento a serem prestados pela China na compra de produtos brasileiros de alto valor agregado. Ao longo desse processo – nem sempre fácil –, Brasil e China jamais perderam de vista a importância política fundamental do projeto, bem como o seu caráter estratégico para o desenvolvimento nacional”.

O resultado é que em 2008, ao festejarmos os 20 anos da cooperação espacial com a China, “os satélites CBERS representam a mais importante conquista do Programa Espacial Brasileiro até o momento”, como salientou Celso Amorim¹⁴.

Em ritmo de expansão, a China, pela voz de seu vice-ministro de Ciência e Tecnologia, Shang Yong, que visitou Brasília em junho de 2008, reconhece o grande potencial brasileiro em inovação e, pela primeira vez, enfatiza o interesse de Pequim em que os dois países estabeleçam amplo programa de “parceria estratégica” justamente na área da inovação, que incluiria laboratórios conjuntos em bioenergia, fitofármacos e outros temas de alta relevância. À China também interessa ampla cooperação no campo da inovação com os países da América do Sul. Na ocasião, o vice-ministro chinês não deixou dúvidas sobre isso, ao convidar o Brasil a promover um grande fórum sino-sul-americano sobre inovação.¹⁵ A proposta merece atenta consideração.

A união política e a atuação conjunta em situações de grandes dificuldades dão especial vigor aos esforços de cooperação, pois, como indica Tokatlian, “a vigência e a continuidade de um espaço de cooperação supõem não só que os participantes sejam amigos, mas também que tenham o desejo e a capacidade de se transformar, em algum momento, em aliados”.

¹⁴ Conferência do ministro Celso Amorim lida pelo embaixador Everton Vargas perante à 60ª Reunião Anual da Sociedade Brasileira para o Progresso da Ciência (SBPC), no Campus da Unicamp, em 15 de julho de 2008.

¹⁵ Notícia da Agência CT – Notícias do MCT, de 1º de julho de 2008, sobre a visita do vice-ministro de Ciência e Tecnologia da China, Shang Yong, ao Ministério de Ciência e Tecnologia do Brasil, em Brasília, no dia 26 de junho de 2008.

O professor argentino vai mais longe. Ele considera a cooperação essencial para garantir a soberania dos países no mundo de hoje. A seu ver, um pleno espaço de cooperação permite “limitar a esfera de influência de uma superpotência, preservar a estabilidade de uma região e incrementar o bem-estar de seus membros”.

Em 1999, a Conferência Mundial sobre Ciência já proclamara que “a cooperação internacional entre os cientistas é contribuição valiosa e construtiva à segurança global e ao desenvolvimento de relações pacíficas entre diferentes nações, sociedades e culturas, e poderia estimular novos passos em direção ao desarmamento, incluindo o desarmamento nuclear.” Assim, haveria um imenso potencial atribuído à cooperação internacional na vida contemporânea ainda não devidamente aproveitado.

Jacques Marcovitch, em trabalho¹⁶ publicado em 1994, delineou novo modelo de cooperação internacional para o Brasil e incluiu entre suas diretrizes básicas o empenho de “priorizar programas e projetos escolhidos com base no critério da qualidade para valorizar a excelência nos âmbitos especial e temático.” Mesmo nos programas de cooperação com países bem menos desenvolvidos, pautados pelo princípio da equidade, convém valorizar ao máximo possível as exigências de qualidade e excelência, pois tal enfoque também é extremamente benéfico e salutar para a parte mais carente.

Os projetos de pesquisa básica, a começar pelos de interesse global, têm evidente necessidade de cooperação internacional ampla, crescente, continuada e de longo prazo. E, como muito bem recomendou a Conferência Mundial sobre Ciência, “o acesso a tais oportunidades para os cientistas dos países em desenvolvimento deve receber apoio ativo e estar aberto a todos, na base do mérito científico”.

No século XXI, é inaceitável a cooperação internacional que não confira a mais alta prioridade à construção da capacidade científica nos países parceiros. Para a Conferência Mundial sobre a Ciência, esta postura garante “o desenvolvimento justo e o uso da criatividade humana sem discriminar qualquer país, grupos ou indivíduos”.

A Conferência afirmou, também, que a cooperação entre países desenvolvidos e em desenvolvimento deve sempre basear-se nos “princípios do acesso livre e completo

¹⁶ Marcovitch, Jacques, *Competição, Cooperação e Competitividade, in Cooperação Internacional: Estratégia e Gestão* (organizado por Jacques Marcovitch), Edusp, 1994, p. 61.

às informações, da equidade e do benefício mútuo.” E que qualquer esforço de cooperação tem o dever de respeitar a diversidade de tradições e culturas. São princípios de difícil aplicação na dura realidade política do nosso tempo, mas nem por isso serão retirados da pauta dos principais fóruns internacionais ou deixarão de ser reivindicados.

A Conferência propôs, igualmente, que os países desenvolvidos arquem com a responsabilidade de aprimorar a parceria científica com os demais países, argumentando que “ajudar a criar massa crítica na pesquisa científica nacional através da cooperação regional e internacional é muito importante para países pequenos e menos desenvolvidos”.

A cooperação internacional, especialmente entre países com diferentes níveis de desenvolvimento, precisa incluir medidas especiais para impedir, reduzir e reverter a perda de recursos humanos qualificados em ciência e tecnologia, pois vários países desenvolvidos tendem a suprir sua crescente necessidade de pessoal especializado atraindo destacados técnicos, engenheiros e cientistas dos países em desenvolvimento. As medidas de proteção, no entanto, não devem ser usadas para restringir a livre circulação de cientistas, essencial para seu aperfeiçoamento.

Quais seriam as melhores formas de cooperação científica e tecnológica? Esta é uma questão aberta. Não há receituário. Para a Conferência Mundial sobre Ciência, “o progresso científico requer vários tipos de cooperação entre entidades governamentais e não-governamentais, tais como projetos multilaterais; redes de pesquisas, incluindo redes Sul-Sul; parcerias entre comunidades científicas de países desenvolvidos e em desenvolvimento para atender às necessidades de todos os países e estimular o seu progresso; bolsas de estudos e doações (*grants*), e a realização de pesquisas conjuntas; programas para facilitar o intercâmbio de conhecimentos; o desenvolvimento, sobretudo nos países em desenvolvimento, de centros científicos reconhecidos mundialmente; acordos internacionais para a promoção conjunta, avaliação e financiamento de mega projetos e do amplo acesso a eles; painéis internacionais para avaliação científica de temas complexos; e programas internacionais para promover o treinamento na pós-graduação. Novas iniciativas são necessárias para a colaboração interdisciplinar”.

A última recomendação é crucial. Atende às demandas da pesquisa científica mais avançada no mundo inteiro. E pede, por exemplo, uma reforma urgente do sistema de departamentos isolados instalado nas Universidades brasileiras.

O mais importante nas formas de cooperação internacional é fazer com que funcionem e atinjam de fato os seus objetivos. Os Ministérios das Relações Exteriores, da Ciência e Tecnologia, da Educação, da Cultura e de outras áreas relevantes, em muitos países, costumam acumular em seus arquivos um grande estoque de acordos não cumpridos, apesar da importância que lhes foi atribuída no ato de assinatura.

Para enfrentar esta inadimplência, Argentina e Brasil criaram o “Mecanismo de Integração e Coordenação Bilateral”, um “marco significativo no aprofundamento da associação estratégica” entre os dois países, visando “dinamizar o processo de integração bilateral e regional”, como frisa a Declaração Conjunta dos Presidentes do Brasil e da Argentina, assinada em 22 de fevereiro de 2008, em Buenos Aires.¹⁷

Trata-se de um sistema estabelecido com coordenadores responsáveis nomeados, cronograma adotado e fontes de financiamento definidas, para acompanhar passo a passo e remover barreiras capazes de impedir o cumprimento de acordos considerados essenciais para o desenvolvimento de ambos os países. O “Mecanismo de Integração e Coordenação Bilateral” compreende 27 programas. Quatro deles fomentam áreas estratégicas de ciência e tecnologia:

- 1) Cooperação Espacial, com a construção conjunta de um satélite argentino-brasileiro de observação costeira e oceanográfica, já batizado de “Sabiá-Mar”, que promete impacto positivo nos campos da proteção do meio ambiente, prevenção de desastres ambientais, manejo costeiro, recursos hídricos, oceanografia, uso sustentável dos recursos marinhos, meteorologia e mudança do clima.
- 2) Centro Binacional de Nanotecnologia (CBAN), cuja êxito na realização de escolas mereceu registro. O programa tem agora a tarefa de criar um plano de trabalho que “impulsione as atividades conjuntas nesse setor, com ênfase na formação de recursos humanos, no desenvolvimento científico e no avanço industrial”, mobilizando grupos de pesquisa e os setores industriais interessados.

¹⁷ Ver <<http://acessibilidade.mct.gov.br/index.php/content/view/69197.html>>

- 3) Programa Bilateral de Energias Novas e Renováveis, que deve aproveitar as possibilidades de colaboração científica e tecnológica, com foco nas áreas em que os dois países mais se completem e gerem maior valor agregado. “O Programa buscará a excelência científica e acadêmica e estará voltado para a realização do interesse social, aplicação industrial e responsabilidade ambiental”, adverte a declaração dos presidentes.
- 4) Programa de Cooperação Nuclear, com tarefas assim definidas: “Determinar aos órgãos competentes do Brasil e da Argentina a constituição de uma comissão binacional responsável pelo desenvolvimento de um modelo de reator nuclear de potência que atenda às necessidades dos sistemas elétricos dos dois países e, eventualmente, da região. Determinar também que, até agosto de 2008, a referida comissão binacional elabore relatório específico de ação com esse fim. Determinar às entidades competentes que definam, no mesmo prazo, um projeto comum na área do ciclo do combustível nuclear e que elaborem igualmente, até agosto de 2008, relatório específico de ação com esse fim. Expressar a intenção de constituir uma empresa binacional de enriquecimento de urânio. Nesse sentido, instruir os organismos competentes a iniciar nos próximos 120 dias as negociações pertinentes. Determinar a realização, até maio de 2008, de um seminário de pesquisadores brasileiros e argentinos para discutir a estratégia da cooperação futura no campo nuclear, bem como para identificar projetos concretos de cooperação bilateral, incluindo o levantamento das capacidades mútuas necessárias em matéria de recursos humanos, tecnológicos e financeiros, assim como em matéria da complementação industrial”.

O balanço é bom: o seminário ocorreu em Foz do Iguaçu, de 26 a 28 de maio. Os grupos envolvidos já se reuniram várias vezes. Há expectativa de bons resultados.

A experiência do “Mecanismo de Integração e Coordenação Bilateral”, que certamente será rica e valiosa, precisará ser avaliada em todos os seus aspectos. Haverá que corrigir falhas e ganhar ainda mais eficácia e dinamismo em futuras aplicações não

apenas no Brasil e na Argentina, mas também em outros países em desenvolvimento, onde o cumprimento dos instrumentos de cooperação costuma ser um problema sério.

A Conferência Mundial sobre Ciência recomendou a expansão do uso das tecnologias de informação e comunicação, sobretudo por meio de redes, “como meio de promover o livre fluxo do conhecimento”. Ao mesmo tempo, pediu “cuidado para garantir que o uso destas tecnologias não termine por negar ou restringir a riqueza das várias culturas e meios de expressão”.

Cabe destacar que Brasil, Argentina e Chile estão envolvidos neste momento no plano cooperativo de construção de ampla rede de comunicação de alta velocidade, que deverá apoiar projetos de pesquisa bilaterais e multilaterais em vários países sul-americanos, nas áreas de Nanociência, Biotecnologia, Astronomia e uso compartilhado de infra-estrutura científica e outras a serem definidas. A parte brasileira é conduzida pela Rede Nacional de Ensino e Pesquisa (RNP). Esta rede poderá revolucionar as bases técnicas da cooperação científica e tecnológica em toda a região. A iniciativa é tão útil e abrangente que bem deveria figurar entre os programas submetidos ao já mencionado “Mecanismo de Integração e Coordenação Bilateral”, pois o passo inicial e fundamental da nova rede é a ligação entre o Brasil e a Argentina (Porto Alegre-Buenos Aires).

Roberto Mangabeira Unger, por sua vez, considera “a necessidade de cooperar e a necessidade de inovar” como “os dois imperativos mais fundamentais do progresso prático.”¹⁸ Ocorre que ele parece restringir sua idéia ao esforço de cooperação e inovação dentro de um país, entre os grupos de uma sociedade. Uma aldeia isolada, ainda que próspera, não garante um bom futuro.

A tese de Mangabeira Unger, no entanto, pode e deve se estender também à colaboração conjunta em busca da inovação tecnológica realizada por empresas públicas ou privadas de dois ou mais países, em especial países em desenvolvimento. Também aqui o esforço de cooperar e inovar em áreas de interesse comum, se bem negociado e orientado, é capaz de dar forte impulso ao desenvolvimento de cada parceiro.

¹⁸ Unger, Roberto Mangabeira, *O que a esquerda deve propor*, Rio de Janeiro: Civilização Brasileira, 2008, p. 63.

Os caminhos da inovação tecnológica em empresas e em outros setores estão a exigir maior presença e dinamismo nos programas de cooperação entre os países do Mercosul, da América do Sul e da América Latina em geral. Mas, felizmente, já não estamos na estaca zero. Os programas prioritários de cooperação entre Argentina e Brasil em nanotecnologia e energias novas e renováveis, como vimos, fazem menção direta à necessidade do esforço inovador nas empresas de ambos os países.. Ainda falta muito, no entanto, para que a maioria dos países latino-americanos entre na era da inovação e participe ativamente de seus benefícios.

Enquanto isto, em meio a avanços vertiginosos, o século XXI exhibe alarmante contradição: quanto mais fáceis, rápidos e eficientes são, tecnicamente, os processos de acesso à informação e de busca conjunta do conhecimento e da inovação, maiores são as dificuldades para utilizá-los na prática. O conhecimento mais importante e valioso (estratégico e/ou lucrativo) é cada vez mais concentrado e privatizado em países avançados. A impressão é de que os instrumentos de proteção da propriedade intelectual vêm sendo afiados desde os anos 80 para moldar um bloqueio impenetrável.

A Conferência Mundial sobre Ciência assumiu a conciliação: “Os direitos de propriedade intelectual têm que ser protegidos, apropriadamente, numa base global, e o acesso a dados e informação é essencial para a execução de trabalhos científicos e para transformar a pesquisa científica em benefícios para a sociedade”. A seu ver, “medidas devem ser tomadas para aprimorar este relacionamento entre a proteção dos direitos da propriedade intelectual e a disseminação do conhecimento científico que se apoiam mutuamente”. A Conferência procurou indicar uma rota intermediária para atender aos dois lados da questão: “É preciso considerar o escopo, extensão e aplicação dos direitos da propriedade intelectual em relação à produção, distribuição e utilização do conhecimento”. E exaltou o papel da lei nacional: “É preciso também desenvolver, mais profundamente, estruturas legais nacionais apropriadas para acolher os requerimentos específicos dos países em desenvolvimento e o conhecimento tradicional, suas fontes e produtos, a fim de assegurar o seu reconhecimento e proteção adequada com base no consentimento informado dos donos habituais ou tradicionais deste conhecimento”.

Para Fábio Konder Comparato, porém, o quadro é totalmente desfavorável: “Hoje (...), o sistema de propriedade industrial tende a engendrar a concentração de

poder econômico, com nula ou quase nula difusão de tecnologia. De um lado, grande parte dos avanços tecnológicos é mantida em segredo, sob regime de *know-how*. De outro lado, a pesquisa tecnológica demanda investimentos cada vez mais elevados, os quais somente os poderes públicos e os grandes grupos empresariais podem realizar. Mas como os investimentos privados obedecem à lógica da lucratividade e não do serviço público, eles se fazem cada vez mais, por iniciativa e no interesse exclusivo das empresas, com vistas à concorrência. Mesmo quando efetuados pelo Estado, tais investimentos beneficiam, quase exclusivamente, as grandes empresas.”¹⁹

O ônus para a cooperação internacional em ciência e tecnologia, tanto quanto para o próprio avanço global do conhecimento, parece evidente. O irônico é que a saída do impasse está justamente, não em menos, mas em mais cooperação internacional, inclusive naquela que envolve o saber mais estratégico. O primeiro desafio é tentar ajustar as normas internacionais fixados no Acordo sobre Aspectos dos Direitos de Propriedade Intelectual relacionados ao Comércio (*Trade-Related Aspects of Intellectual Property Rights – TRIPS*), aprovado pela Organização Mundial do Comércio em 1994, aos objetivos e planos de desenvolvimento nacional dos países, em especial dos países em desenvolvimento. Há que abrir brechas legais para assegurar o livre acesso àquela parte do conhecimento que poderia ser definido como patrimônio comum da humanidade. Ao mesmo tempo, urge proteger o conhecimento tradicional, dos povos indígenas e das populações do interior, a começar por aquelas relacionadas com os recursos genéticos e biológicos da biodiversidade de cada país.

O acesso a publicações e arquivos bibliográficos deve ser objeto de ampla cooperação internacional. Já há repositórios criados em várias línguas para dar o acesso aos países menos desenvolvidos, sobretudo em áreas vitais para o desenvolvimento humano e a defesa do meio ambiente, como medicina e saúde, agricultura e ecologia.

A Organização Mundial de Propriedade Intelectual (OMPI) tem debatido a possibilidade de novos acordos internacionais, visando abrir caminho à livre circulação da informação e do conhecimento em favor dos países menos desenvolvidos capazes

¹⁹ Comparato, Fábio Konder, *Ética – Direito, Moral e Religião no Mundo Moderno*, SP: Companhia Das Letras, 2006, p. 630.

de contribuir tanto para o avanço da ciência como para a solução dos problemas globais.

A Comissão de Direitos de Propriedade Intelectual criada pelo Governo do Reino Unido em 2001, para estudar as implicações destes direitos nos países em desenvolvimento, propõe um sistema harmonizado de patentes para substituir o TRIPS. Outro caminho seria criar uma rede de parceria mundial entre agências de pesquisas, países em desenvolvimento, agências de desenvolvimento e organizações acadêmicas, que definisse e coordenasse projetos prioritários de pesquisa, com pleno acesso aos conhecimentos necessários e garantia de publicação completa de seus resultados.

Quanto ao acesso à literatura científica mundial e à visibilidade internacional da produção científica e tecnológica dos países em desenvolvimento, Maria Lucia Maciel e Sarita Albagli sugerem três tipos de iniciativas que, *grosso modo*, podem ser alinhadas nas políticas e ações de cooperação internacional: 1) as que visam democratizar o acesso aos recursos bibliográficos (bibliotecas digitais e repositórios de textos, sobretudo a partir do movimento de acesso livre à informação em C&T); 2) as que procuram incrementar a visibilidade do trabalho de autores destas regiões, abrindo maiores oportunidades à publicação, em revistas internacionais, de pesquisadores de países emergentes e menos desenvolvidos; e 3) as que buscam melhorar o conhecimento dos recursos disponíveis, bem como criar competências para seu melhor aproveitamento e uso, aí consideradas as iniciativas de inclusão digital em âmbito mundial e de enfrentar as dificuldades de língua e outros obstáculos ao acesso e ao entendimento.

Fica no ar a pergunta: que instrumentos de cooperação internacional podem ajudar a democratizar o acesso ao conhecimento, sua produção e sua difusão?

A guisa de conclusão vale notar a evolução das propostas de cooperação internacional. As primeiras abordavam as questões da manutenção da ordem e da paz, consolidadas na Carta das Nações Unidas. Ao mesmo tempo, vieram aquelas voltadas para a ajuda técnica, de alcance e resultados restritos. Só depois, tardiamente e de forma incompleta, como acentua Celso Amorim²⁰, surgiram idéias de cooperação visando o

²⁰ Amorim, Celso Luiz Nunes, *Perspectivas da Cooperação Internacional*, in *Cooperação Internacional: Estratégia e Gestão* (organizado por Jacques Marcovitch), Edusp, 1994, pp. 152-153.

desenvolvimento como objetivo maior. Reconheceu-se, enfim, a necessidade de formar recursos humanos altamente qualificados e de garantir pleno acesso ao conhecimento fundamental, como condições básicas para profundas mudanças sociais e culturais nas aldeias e no mapa global. Mas a cooperação transformadora ainda é periférica na arena das gigantescas lutas de interesses conflitantes travadas no mundo de hoje.

Pode-se dizer que os próprios esforços de cooperação eqüitativa e realmente enriquecedora são transformadores. Parece nítido, porém, que este tipo de cooperação só terá profundos efeitos globais quando for a regra e não a exceção, quando se tornar a relação hegemônica na vida internacional, a partir de políticas públicas solidamente adotadas pelos Estados.

Há quem registre uma tensão “no coração do modelo de ciência e inovação do Brasil” entre “adquirir excelência e lutar por eqüidade num meio global em rápida mudança”.²¹ Mas, talvez as duas ações não sejam necessariamente excludentes. E, juntas, possam representar uma solução ao mesmo tempo realista e humanista.

²¹ Bound, Kirsten, *Brazil, the Natural Knowledge Economy*, The Atlas of Ideas, United Kingdom, London: Demos, 2008, p. 117.

4.

IBAS: Coordenação e Cooperação entre
Países em Desenvolvimento



4.

IBAS: Coordenação e Cooperação entre Países em Desenvolvimento¹

Paulo Marchiori Buss²

José Roberto Ferreira³

Introdução

A cooperação Sul-Sul vem se fortalecendo desde 1978, quando 'Diretrizes sobre Cooperação Técnica entre Países em Desenvolvimento (CTPD)' foram aprovadas na Conferência das Nações Unidas sobre CTPD e suas recomendações estabelecidas no Plano de Ação de Buenos Aires⁴ que caracteriza o esforço cooperativo entre esses Estados nas áreas mais sensíveis ao seu desenvolvimento. Tal estratégia torna-se ainda mais especial quando relaciona países de um nível intermédio de desenvolvimento com capacidade para a inovação (*Inovative Developing Countries - IDCs*⁵), contexto no qual se situa a cooperação trilateral entre Brasil, Índia e África do Sul, que culminou com a criação do importante Fórum de Diálogo Político e iniciativas em ciência e tecnologia (C&T) que se analisa nesse documento.

A relação entre IBAS desenvolveu-se na última década do século XX, iniciando com ênfase em HIV/AIDS, área das mais sensíveis para o desenvolvimento dos três países. A Índia, como grande produtora de medicamentos genéricos, tornou-se importante exportador de antiretrovirais (ARVs); o Brasil, com uma política de combate à epidemia reconhecida como modelo internacionalmente; e a África do Sul, pelo número elevado de soropositivos e expressiva capacidade técnico-científica instalada,

¹ Documento preparado para o Seminário Acadêmico IBAS, Rio de Janeiro, Brasil, 29 de agosto de 2008.

² Médico, Professor da Escola Nacional de Saúde Pública/FIOCRUZ, Presidente da Fundação Oswaldo Cruz e Membro Titular da Academia Nacional de Medicina.

³ Médico, Doutor *Honoris Causa* da Escola Nacional de Saúde Pública/FIOCRUZ, Chefe da Assessoria Internacional da Fiocruz, ex-Diretor de Recursos Humanos da Organização Panamericana da Saúde.

⁴ http://www.abc.gov.br/ct/histórico_ct.asp.

⁵ Morel CM *et al.* *Science*, 2005. 309(5733): 401-404; Morel CM *et al.* *Innovation Strategy Today*, 2005. 1(1): 1-15.

demandando tanto políticas de combate à doença como acesso a medicamentos de baixo custo.

Esta relação ampliou-se para o setor de C&T e, com o decorrer dos anos, expandiu-se para outras áreas, incluindo transportes, infra-estrutura, diversidade biológica e saúde pública, o que permitiu que se avançasse para um acordo formal entre os três países.

O Diálogo Político⁶

A 'Declaração de Brasília', emitida em 6/06/2003 pelos Chanceleres de Índia, Brasil e África do Sul, formalizou a relação de coordenação e cooperação entre os três países em desenvolvimento, que têm em comum a capacidade de atuação em escala global. Trata-se de uma inovação em termos de cooperação internacional por ser uma aliança trilateral com ênfase no aumento do diálogo político entre os participantes e busca de resultados concretos na promoção do desenvolvimento, via cooperação Sul-Sul.

A oportunidade de cooperação trilateral no contexto do IBAS atendeu, para o Brasil, diretrizes da política externa do Governo Lula e, por outro lado, ofereceu a possibilidade de se estabelecer cooperação entre países em níveis de desenvolvimento semelhantes e complementares para corrigir desigualdades internas em várias áreas sociais, políticas e do conhecimento. Isso pode facilitar e permitir o desenvolvimento de uma cooperação mais equilibrada e simétrica. Essa união de esforços pretende criar canais alternativos e inovadores de intercâmbio entre as comunidades dos três países.

Na institucionalização do Fórum de Diálogo – que ocorreu na Reunião de Ministros de Relações Exteriores, realizada em março de 2004, em Nova Deli – o Chanceler Celso Amorim destacou o fato de que os três países partilham princípios comuns, como democracia, multilateralismo e cooperação para o desenvolvimento, os quais facilitam o diálogo e o intercâmbio trilateral. Nesse contexto, os três Governos reafirmaram a necessidade de combater as ameaças à paz e à segurança internacionais

⁶ http://www.mre.gov.br/index.php?option=com_content&task=view&id=1938&Itemid=1564.

em conformidade com a Carta das Nações Unidas e com os instrumentos jurídicos de que fazem parte Brasil, Índia e África do Sul.

Os objetivos principais do Fórum do Diálogo IBAS⁷ podem ser sumarizados como segue:

- Promover o diálogo Sul-Sul, a cooperação e posições comuns em assuntos de importância internacional.
- Promover oportunidades de comércio e investimento entre as três regiões das quais os países fazem parte.
- Promover a redução internacional da pobreza e implementar o desenvolvimento social.
- Promover a troca trilateral de informações em melhores práticas, tecnologias e habilidades em relações internacionais, assim como implementar os respectivos esforços de sinergia coletiva.
- Promover a cooperação em diversas áreas, como agricultura, mudança climáticas, cultura, defesa, educação, energia, saúde, sociedade de informação, ciência e tecnologia, desenvolvimento social, comércio e indústria, turismo e transporte.

Posteriormente, os três Governos sublinharam o compromisso de cooperar no desenho e na implementação de projetos orientados à promoção da inclusão e equidade sociais através da redução da pobreza e o combate à fome, bem como do acesso à educação, saúde e saneamento, com a identificação de projetos-piloto e boas práticas, visando sua disseminação nos planos regional e internacional como exemplos concretos para alcançar as Metas de Desenvolvimento do Milênio. A preparação, aprovação e implementação desses projetos observariam os regulamentos e os procedimentos existentes no âmbito do PNUD e de outras agências das Nações Unidas. Para ressaltar seu compromisso, Índia, Brasil e África do Sul aportariam contribuições a essa iniciativa com vistas a facilitar a operacionalização dos projetos.

⁷ <http://www.mct.gov.br/index.php/content/view/20600.html>.

A partir da criação do Fórum, sucessivas reuniões foram realizadas, em diversos níveis, sustentando o compromisso político nesta cooperação trilateral. No nível mais alto, estão as Cúpulas de Chefes de Estado, das quais a mais recente foi realizada em outubro de 2007, em Tshwane, África do Sul⁸ e a próxima está programada para outubro de 2008 em Nova Deli.

No nível imediatamente abaixo estão os encontros de Chanceleres, que presidem as Comissões Mistas (Comistas) e emitem comunicados que consolidam posições comuns sobre temas políticos, quer nas Comistas, quer em outras oportunidades, como em paralelo às Assembléias Gerais da Nações Unidas. Ocorreram até o presente cinco Comistas: Nova Deli (5/03/2004), Cidade do Cabo (3/03/2005), Rio de Janeiro (30/03/2006), Nova Deli (16-17/07/2007) e Somerset West (11/05/2008).

O Fórum tem tido desempenho ótimo no que diz respeito à consultas e concertação política. Os nove comunicados ministeriais⁹ (os das cinco Comistas e outros quatro: Declaração de Brasília e Comunicados de Encontros nas 58^a, 59^a e 62^a Assembléia das Nações Unidas) e o Comunicado de Chefes de Estado e Governo sobre assuntos de política externa constituem um repositório de posições comuns sobre ampla gama de temas, com mobilização de praticamente todos os setores das chancelarias. Esse exercício serviu, até o momento, para aprofundar o conhecimento mútuo e criar as bases de uma cultura de interação política entre os três países.

Além desses níveis de concertação, o Fórum também utiliza 'pontos focais' que têm se reunido semestralmente, contando-se as reuniões que, via de regra, mantém imediatamente antes dos encontros ministeriais das Comistas. Assim, a última reunião de pontos focais às vésperas da reunião ministerial de Somerset West foi considerada a décima segunda. Nem todas as reuniões de pontos focais geraram ata ou algum documento final, encontrando-se referências às seguintes reuniões: Nova Deli (Novembro de 2004), Vereening (Novembro de 2005), Johannesburgo (Outubro de 2007) e Cidade do Cabo (Maio de 2008).

⁸ <http://www.dfa.gov.za/docs/2007/ibsa1018.htm>.

⁹ <http://acessibilidade.mct.gov.br/index.php/content/view/11492.html>.

Fundo IBAS

Índia, Brasil e África do Sul constituíram, em 2004, um Fundo de Combate à Fome e à Pobreza (Fundo IBAS) para beneficiar países em desenvolvimento, inovando, assim, em relação ao círculo tradicional de doadores. Os recursos são aportados em contribuições anuais de USD 1 milhão dos países-membros e já foram utilizados para financiar dois projetos: 1) coleta de lixo sólido no Haiti; e 2) desenvolvimento agrícola na Guiné-Bissau.

A fim de otimizar a utilização dos recursos disponíveis, o Brasil convocou reunião com os parceiros do IBAS e a Unidade Especial de Cooperação Sul-Sul do PNUD, com o objetivo de estabelecer procedimentos para recebimento de propostas, preparação de projetos e sua implementação. É desejável que projetos já realizados possam ser replicados em outros contextos, aproveitando-se a experiência desenvolvida.

Cooperações Setoriais

IBAS decidiu envolver diversos setores das administrações públicas dos três países, para que trocassem informações e identificassem eventuais nichos de cooperação. Foram propostos 16 Grupos de Trabalho:

1. Administração pública
2. Administração tributária – Receitas
3. Agricultura
4. Assentamentos humanos
5. Ciência e tecnologia, incluindo Pesquisa Antártica
6. Indústria, comércio e investimentos
7. Cultura
8. Defesa
9. Desenvolvimento social
10. Educação
11. Energia

12. Meio ambiente e mudanças climáticas
13. Saúde
14. Sociedade da informação
15. Transportes
16. Turismo

A dinâmica que permitiu a ampliação das áreas de atuação do Fórum ainda não se esgotou, pois existem propostas para o estabelecimento de novos grupos em Obras Públicas e Infra-estrutura, Temas Florestais, Sistemas Carcerários, Relações Federativas e Pequenos Negócios.

A área de C&T foi considerada de interesse estratégico para a consolidação da cooperação setorial e multilateral, ainda que outros setores tenham também promovido iniciativas de cooperação, caso do setor saúde que, numa fase muito inicial, promoveu uma primeira abordagem de intercâmbio.

Cooperação inicial em saúde

Em fevereiro de 2004, uma reunião do Grupo de Trabalho da área da Saúde, realizada em Brasília, aprovou seis temas de interesse para cooperação, incluindo:

- Direitos de propriedade intelectual e acesso a medicamentos
- Medicina tradicional
- Integração entre laboratórios e regulações sanitárias
- Vigilância epidemiológica
- Vacinas
- Pesquisa e desenvolvimento de produtos farmacêuticos

Nessa ocasião, a Fundação Oswaldo Cruz (FIOCRUZ) foi contatada por instituições da Índia e da África do Sul – respectivamente o Conselho Indiano de Pesquisa em Medicina (ICMR) e o Conselho de Pesquisa Médica da África do Sul (MRC) – vindo a se estabelecer um Memorando de Entendimento entre as três

Instituições, com o objetivo de implementar a mesma agenda já aprovada no âmbito dos Ministérios da Saúde.

Em continuidade ao compromisso assumido, o Ministério da Saúde do Brasil propôs a visita de técnicos indianos e sul-africanos ao Brasil à rede nacional de laboratórios de vigilância em saúde e à Agência Nacional de Vigilância Sanitária (ANVISA), nas áreas de controle de medicamentos, produtos da área da saúde e laboratórios de controle de qualidade. As reuniões técnicas, realizadas em fevereiro de 2006 com a Secretaria de Vigilância em Saúde (SVS/MS), ANVISA, FIOCRUZ e Instituto Adolfo Lutz, resultaram em plano de trabalho e propostas de cooperação a serem desenvolvidos após aval dos respectivos Ministros da Saúde, que se reuniram na África do Sul, em março de 2006. Entretanto, no período proposto o Ministro da Saúde do Brasil foi substituído, deixando o país de ser representado na referida reunião, o que levou a um período de interrupção no processo proposto.

O desenvolvimento na área de Ciência e Tecnologia

Os ministros de Ciência e Tecnologia dos três países vêm promovendo reuniões de trabalho desde 2004, sendo que durante a II Reunião, realizada no Rio de Janeiro, em 8/06/2005 foi assinada a 'Declaração do Rio de Janeiro sobre Ciência e Tecnologia do IBAS'⁹ e aprovado o Programa de Trabalho 2005–2007, anexo à Declaração.

O Programa foi estabelecido de forma a explicitar as áreas prioritárias da cooperação para os próximos dois anos, bem como a indicação dos respectivos coordenadores nacionais para cada área temática. Adicionalmente, elencou alguns eventos correlacionados aos grupos de trabalho temáticos do IBAS, os quais têm como objetivo principal elaborar planos de trabalhos específicos para cada tema. Os planos de trabalho temáticos seriam submetidos à apreciação e eventual aprovação do Grupo de Trabalho do IBAS em C&T.

IBAS - Reuniões dos Ministros de Ciência e Tecnologia

- Outubro 2004 (Nova Delhi) – I Reunião Ministerial do IBAS em C&T. Identificaram-se as áreas prioritárias de cooperação em C&T.
- Junho 2005 (Rio de Janeiro) – II Reunião Ministerial do IBAS em C&T. Assinatura da Declaração do RJ. Definição dos Coordenadores Temáticos de cada país.
- Junho 2005 (Rio de Janeiro) – I Reunião Ministerial sobre Sociedade da Informação do IBAS, realizada no âmbito da Conferência Ministerial Regional da América Latina e do Caribe, preparatória para a Segunda Fase da Cúpula de Tunis.
- Setembro 2006 (Angra dos Reis) – III Reunião Ministerial do IBAS em C&T. Assinatura de Ata que compromete recursos na ordem de US\$ 1 milhão por país.
- Dezembro 2007 – IV Reunião de Ministros de C&T (*não ocorreu; reprogramada para 2008, em Nova Deli*).

O Programa previu a promoção de mecanismos adequados à identificação de linhas de cooperação científica e tecnológica nas seguintes áreas temáticas:

- Biotecnologia (incluindo biotecnologia agrícola e bioinformática).
- Energias alternativas e renováveis.
- Astronomia e astrofísica.
- Meteorologia e mudanças climáticas.
- Oceanografia, ciências da pesca e pesquisa antártica.
- Conhecimentos tradicionais.
- Tecnologias da informação.

No âmbito dessas áreas, a cooperação seria iniciada em questões relativas a:

- HIV / AIDS, tuberculose e malária.

- Biotecnologia na saúde e na agricultura.
- Nanociências e nanotecnologia.
- Ciências oceanográficas.

Deveriam ser favorecidas ações ancoradas em centros de excelência; apoiar a estruturação de projetos conjuntos de pesquisa; encorajar parcerias público-privadas, com vistas a possível aplicação comercial dos resultados; compartilhar informações sobre melhores práticas em matéria de transferência tecnológica; e engajar em questões de direitos de propriedade intelectual, com especial relevância na proteção da biodiversidade e do conhecimento tradicional.

Com o propósito de melhorar a qualidade de vida da população dos três países, o Programa IBAS deveria buscar os seguintes resultados:

- Identificar demandas e oportunidades de cooperação trilateral em C&T.
- Promover a integração para beneficiar um número maior de instituições nos países.
- Promover melhor capacitação de recursos humanos para C&T.
- Propiciar oportunidades para a geração e apropriação de conhecimentos científicos e tecnológicos demandado pelas sociedades dos três países.

Paralelamente, para atividades brasileiras no âmbito da cooperação IBAS em C&T foi instituído o Programa de Apoio à Cooperação Científica e Tecnológica Trilateral entre Índia, Brasil e África do Sul – Programa IBAS através da Portaria MCT nº 481, de 15/07/2005. A Agência de implementação e apoio às atividades aprovadas pelo Comitê Gestor do Programa IBAS no Brasil é o CNPq (Conselho Nacional de Desenvolvimento Científico e Tecnológico). Estabeleceu-se, ainda, que os executores desses programas seriam as Instituições de ensino superior, institutos de P&D e organizações de cunho científico e tecnológico, públicos e privados, assim como organismos, redes e consórcios multilaterais de cooperação científica e tecnológica sem fins lucrativos.

IBAS - Reuniões dos Grupos de Trabalho em C&T

- Março 2005 (Cidade do Cabo) – I Reunião do GT em C&T do IBAS. Reunião setorial preparatória à II Comissão Mista IBAS.
- Março 2005 (Cidade do Cabo) – I Reunião do GT sobre Sociedade da Informação do IBAS. Reunião setorial preparatória à II Comissão Mista IBAS.
- Junho 2005 – II Reunião do GT em C&T do IBAS. Elaboração da ‘Declaração do Rio de Janeiro sobre Ciência e Tecnologia do IBAS’ e aprovação do Programa de Trabalho 2005-2007.
- Junho 2005 (Rio de Janeiro) – II Reunião do GT sobre Sociedade da Informação do IBAS (Em paralelo à II Conferência Regional América Latina e Caribe para a 2ª Fase de Túnis). Elaboração da Minuta de Moldura de Cooperação sobre Sociedade da Informação do IBAS.
- Março 2006 (Rio de Janeiro) – III Reunião do GT Sociedade da Informação. Avaliação dos resultados do Plano de Ação de 2005-2006 e elaboração de novo plano. Aprovação forma e encaminhamento do instrumento ‘IBSA Framework for Co-operation on Information Society’.
- Março 2006 (Rio de Janeiro) – Reunião do Grupo de Trabalho sobre C&T do IBAS. *Progress Report*.
- Setembro 2006 (Angra dos Reis) – Reunião do Grupo de Trabalho sobre C&T do IBAS. Avaliação das recomendações dos *Workshops* temáticos.
- Julho 2007 (Nova Delhi) – Reunião do Grupo de Trabalho sobre C&T do IBAS. Reavaliação das recomendações dos *Workshops* temáticos.
- Julho 2007 (Nova Delhi) – SOC-INFO. Reunião do Grupo de Trabalho.
- Maio 2008 (Cidade do Cabo) – VI Reunião do Grupo de Trabalho sobre C&T do IBAS – reprogramação das atividades. Sugestão de Memorando de Entendimento.

Em reunião do GT de C&T, realizada em março de 2005, na Cidade do Cabo, foi estabelecido que cada um dos três países ficariam responsáveis por conduzir os trabalhos em duas das áreas temáticas, ficando as mesmas assim distribuídas:

1. HIV / AIDS Índia
2. Tuberculose África do Sul
3. Malária Brasil
4. Biotecnologia em saúde e agricultura África do Sul
5. Nanociências e tecnologia Índia
6. Ciências oceanográficas Brasil

Especificamente, para os três primeiros temas de saúde, o MCT contactou a FIOCRUZ, que designou pesquisadores de seu quadro para acompanharem os trabalhos das três áreas temáticas¹⁰. Dando continuidade a esta programação foram realizadas as reuniões temáticas relacionadas abaixo.

- Maio 2005, Nova Deli – Reunião preparatória sobre Vacinas para HIV-AIDS
- Setembro 2005, Pretoria – Grupo de Trabalho em Malária
- Outubro 2005, Cidade do Cabo – Grupo de Trabalho em Vacinas
- Março 2006, Teresina – Reunião sobre Malária
- Novembro 2006, Cidade do Cabo – Pesquisa em Tuberculose

HIV/AIDS

A reunião preparatória, realizada em Nova Deli, em maio de 2005, esteve orientada a uma revisão global da situação e dos desafios a serem enfrentados e definiu os objetivos da reunião definitiva a realizar-se na Cidade do Cabo como sendo:

- Intercambiar informações sobre pesquisa, avaliação da produção e distribuição de vacina contra AIDS
- Compartilhar as melhores práticas na preparação comunitária para esta iniciativa

¹⁰ Ricardo Galler e Ernesto Marques (HIV/AIDS); Luis Roberto Castelo Branco (Tuberculose) e Cláudio Ribeiro (Malária)

- Estabelecer consenso sobre as estratégias para intensificar o compromisso político e expandir os esforços em relação à vacina de AIDS no nível internacional
- Desenvolver atividades conjuntas em áreas substantivas de colaboração (incluindo reforço regulatório, melhor recrutamento de ensaios clínicos e melhores incentivos para companhias nacionais de biotecnologia)

Na Cidade do Cabo, cinco meses depois, os participantes se dividiram em grupos de trabalho orientados respectivamente a pesquisa e desenvolvimento; iniciativas e comprometimento de vacinação; testes clínicos; e transferência de tecnologia; e, ao final, consolidaram as resoluções em três áreas programáticas:

- Desenvolvimento da vacina
- Projeto comum de pesquisa para a vacina
- Desenvolvimento de uma visão compartilhada

As delegações nacionais deveriam indicar os líderes que em cada país coordenariam os projetos; entretanto, para manter o 'momentum' alcançado durante a reunião a discussão deveria seguir entre os membros de cada um dos grupos de trabalho.

Os seguintes projetos potenciais foram identificados:

- Desenvolvimento de unidades de toxicologia, de instalações para primatas não-humanos, de gerência de propriedade intelectual e de gerenciamento de informação
- Desenvolvimento de padrões comuns para ensaios, acreditação, normas regulatórias, previsão de demanda de vacinas, sistemas de informação e monitoramento, a longo prazo, de participantes em experimentos
- Desenvolvimento de agendas nacionais de vacinas para promoção política, incorporando objetivos de 'advocacy' nacionais, regionais e globais
- Desenvolvimento comum de estratégias de recursos humanos, incluindo programas de intercâmbio, treinamento conjunto e desenvolvimento e retenção de habilidades estratégicas

Foi proposto que se organizassem GTs para uma dedicação mais aprofundada nessas áreas o que, entretanto não ocorreu até o momento. Entre as conclusões do Grupo de Trabalho se destaca a questão da propriedade intelectual, demandando a criação de um escritório central da IBAS para controlar o processo; a proposta de criação de grupo de trabalho para negociar o licenciamento de produtos no âmbito do IBAS; a implementação de programa de treinamento de recursos humanos no desenvolvimento de testes, acreditação de laboratórios e controle de qualidade; a proposta de instalação de plantas de produção na África e no Brasil para atender a demanda de produção. A impressão geral foi de que predominou o objetivo de alavancar o desenvolvimento tecnológico e a produção de vacinas na África do Sul, com a ajuda de Índia e Brasil, visando atender, de início, o mercado africano como um todo.

Malária

Realizou-se em Pretória a reunião de um Grupo de Trabalho designado como 'Iniciativa de Malária para a África', que tinha como objetivo aproximar pesquisadores na área de descoberta e desenvolvimento de novas drogas antimaláricas (nas quais, aparentemente os grupos sul-africanos acumulavam maior experiência) e de novos inseticidas para controle vetorial da malária, além de explorar novos meios diagnósticos para a doença em seres humanos e infecção nos mosquitos vetores, assim como o desenvolvimento da epidemiologia molecular do parasita.

O resultado do GT permitiu a identificação de algumas possibilidades de cooperação, cuja implementação não parece tarefa fácil. Considerou-se que teria sido útil a presença de representantes dos Ministérios de Relações Exteriores, pois um acordo específico pode apresentar desdobramentos que transcendem a abordagem especializada, como por exemplo a questão relativa a registro de patentes e a delimitação dos interesses específicos de cada país.

Assim mesmo, algumas atividades futuras foram cogitadas, como:

- Criação de Portal IBAS na internet, com *links* de instituições de pesquisa e divulgação de eventos de interesse

- Realização de uma segunda reunião, no Brasil, simultaneamente à realização do Congresso Brasileiro de Medicina Tropical, em março de 2006
- Elaboração de um artigo (de autoria conjunta) divulgando IBAS em periódicos científicos dos três países e estabelecendo prioridades de cooperação

Cumprindo a segunda recomendação, reuniu-se em Teresina (Piauí, Brasil), em 8/03/2006, um GT do IBAS que revisou as principais áreas de pesquisa em curso no país e propôs a elaboração de um repertório da situação brasileira nessa área. O repertório foi produzido e publicado pela FIOCRUZ¹¹ (em inglês), incluindo 70 núcleos de pesquisa existentes no país, com a relação das áreas de pesquisa prioritárias e dos projetos em curso, além da relação dos pesquisadores responsáveis, num total de 340, dos quais 116 eram líderes de grupos específicos (com pelo menos 3 artigos aceitos pelo *Medline* nos últimos 5 anos) e 124 pesquisadores associados, todos eles com a lista das publicações mais recentes.

Tuberculose

O GT sobre Tuberculose reuniu-se na Cidade do Cabo, em novembro de 2006, objetivando a troca de informações sobre pesquisa na doença e o desenvolvimento de Boas Práticas Clínicas e de Laboratório, assim como a possibilidade de promover atividades conjuntas em áreas de interesse (incluindo sistemas de saúde, pesquisa operacional e incentivo à indústrias nacionais de biotecnologia).

O debate concentrou-se em duas áreas, relativas à pesquisa básica aplicada e testes diagnósticos e de estudos operacionais e sistemas de informação.

No primeiro grupo, uma das propostas esteve relacionada à estudos de diversidade molecular e detecção de TB droga-sensível (DS-TB) e TB droga-resistente

¹¹ Repertoire of the Groups conducting Malaria research in Brazil. Claudio Tadeu Daniel Ribeiro et al. Rio de Janeiro: Fiocruz, 2007 (116 pp).

(DR-TB), incluindo novos métodos e técnicas para observação dos diferentes genótipos de *M. tuberculosis*, detecção de MDR-TB, desenvolvimento de arquivo de dados comuns e desenvolvimento de técnicas moleculares em comum. A segunda proposta tratou da avaliação de novos métodos diagnósticos (moleculares e imunológicos), sugerindo-se a criação de um banco de amostras clínicas para agilizar estudos interativos nas diferentes áreas e a recomendação de que a avaliação diagnóstica deva ser coordenada por um comitê de especialistas com representantes governamentais e das instituições de pesquisa, indústria e sociedade civil organizada.

No segundo grupo se discutiu o estabelecimento de locais para estudos clínicos e laboratoriais para novos fármacos, novas vacinas e novos testes diagnósticos, assim como o mapeamento da capacidade de cada país para a identificação de projetos colaborativos potenciais, compartilhando informações e procedimentos de boas práticas clínicas e de laboratório. Foi sugerida a realização de um novo GT logo que o referido mapeamento esteja terminado, previsto para o final do ano de 2007, mas que ainda não ocorreu.

Formalização da Cooperação em Saúde e Medicina

Em outubro de 2007, em Pretória, os Ministros de Relações Exteriores dos três países assinaram um novo Memorando de Entendimento em Cooperação na Área de Saúde e Medicina, que estabelece a cooperação entre as partes nas áreas relacionadas no box.

Cooperação em Saúde e Medicina

- HIV/AIDS, incluindo:
 - estabelecimento de estratégia comum em resposta à epidemia
 - produção de drogas anti-retrovirais para assegurar acesso universal
 - pesquisa e produção de vacinas em conjunto com IBAS C&T
 - produção de testes de rápidos e testes de carga viral e genotipificação
 - transferência de tecnologia em laboratórios para garantia de qualidade

- Desenvolvimento de programa de tuberculose, com co-infecção com HIV
- Programas de malária, com diagnóstico, tratamento e controle de vetores
- Programas de assistência farmacêutica e registro de produtos de saúde
- Fornecimento de medicamentos
- Vacinas
- Pesquisa e desenvolvimento em medicina (em consonância com IBAS C&T)
- Medicina tradicional
- Direitos de propriedade intelectual
- Vigilância de doenças

Estabelece que esta cooperação será implementada pelo compartilhamento de informações, intercâmbio de profissionais, incluindo treinamento em programas educacionais, programas de cooperação científica (seminários e projetos conjuntos) e transferência de tecnologia, e promove a criação de um GT para supervisionar a implementação desse Memorando de Entendimento.

Iniciativas Gerais de Aprofundamento e Disseminação

Em duas reuniões mais recentes, os Chefes de Estado e, posteriormente, os Ministros de Relações Exteriores, respectivamente em Tshwani e Somerset West, seguiram ampliando a abrangência do Fórum Trilateral, visando expandir e enraizar o processo de aproximação entre Índia, Brasil e África do Sul, e concebendo ações para envolver no IBAS entidades de fora da esfera do Poder Executivo.

Surgiram, então, várias iniciativas, algumas pontuais e outras que se têm prolongado em edições sucessivas. Essas iniciativas podem ser assim compiladas:

- Seminário sobre Desenvolvimento Econômico com Equidade
- Fórum de Empresários
- Fórum de Mulheres (realizado com o apoio do GT de Desenvolvimento Social)
- Fórum de Parlamentares

- Seminário de Acadêmicos
- Fórum de Editores
- Eventos culturais

Na reunião de Chefes de Estado de Tshwani foi acordado o estabelecimento de um mecanismo consultivo trilateral para intercâmbio de informações sobre direitos de propriedade intelectual visando o estabelecimento de um regime balanceado nessa área. Isto contribuirá para o progresso econômico e social dos países em desenvolvimento, assegurando o acesso ao conhecimento, ao cuidado de saúde e à cultura. Um Memorando de Associação em Direitos de Propriedade Intelectual deverá ser assinado na próxima Reunião de Chefes de Estado, na Índia.

Na reunião de Somerset West, os Ministros destacaram a importância dos princípios e metas adotadas na Declaração de Rio (Agenda 21) e na de Johannesburg, na Cúpula Mundial sobre Desenvolvimento Sustentável, enfatizando a necessidade de capacitação, financiamento, desenvolvimento e transferência de tecnologia e desenvolvimento institucional para lográ-lo.

Atenção especial foi dedicada à revisão do processo do Fundo IBAS de Combate à Fome e a Pobreza para que a mesma seja finalizada antes da 3ª. Cúpula do IBAS, incluindo a discussão de modalidades de desembolso e os critérios para apresentação de projetos, além de promover a formulação de projetos ao nível dos países.

Por último, os Ministros revisaram o trabalho dos Grupos Setoriais e adotaram seus relatórios, reafirmando a necessidade de que os Grupos de Trabalho se reúnam regularmente e possam implementar os planos de trabalho acordados.

Desafios e Perspectivas

Os excelentes resultados obtidos até agora na área de C&T em saúde de IBAS estimulam que a cooperação trilateral seja expandida e aprofundada.

No grupo de trabalho realizado em Pretoria, agora destinado especificamente à Saúde, são destacadas as mesmas patologias exploradas anteriormente nos Grupos de Trabalho do MCT e Fiocruz, priorizando aspectos específicos que poderiam ser

considerados através de ‘acordos abrangentes’ entre o que se denominam ‘instituições estruturantes de C&T em saúde’: Institutos Nacionais de Saúde; Universidades com reconhecida experiência na área; grandes hospitais dedicados à pesquisa clínica etc.

Tais acordos devem abrir campos de cooperação em:

- formação de recursos humanos em saúde e C&T
- desenvolvimento conjuntos de estudos e pesquisas relevantes para IBAS para além dos problemas específicos focados até aqui
- privilegiar cooperação para o desenvolvimento dos sistemas de saúde, substrato fundamental para a melhoria da qualidade da atenção e capaz de abarcar temas abrangentes e relevantes
- outros, que a análise e a pactuação de IBAS considerem prioritários

Finalmente, sugere-se a criação de um Fundo de Apoio à Pesquisa e Desenvolvimento de Recursos Humanos em C&T e Saúde de IBAS, visando garantir eficácia e sustentabilidade nos projetos e, sobretudo, nos acordos entre as instituições estruturantes de C&T em saúde.

5.

Knowledge and Science as Commons



5. Knowledge and Science as Commons

Prabir Purkayastha*

*They hang the man
And flog the woman
That steals the goose from the commons
But let the greater villain loose
That steals the commons from the goose*

(English Folk poem, circa 1764¹)

(Draft Paper, Not to be quoted)

One of the key determinants of today's world is the speed with which innovation² takes place and is brought within the sphere of production. The growth of technology is a continuous driver of the economy. While a lot of discussions have taken place on the monopoly created through the "reproduction" of the innovation via patents, relatively less attention has been focussed in the way innovation takes place and the structures within which innovation is either facilitated or retarded. Does the networked world of today carry new possibilities for alternate structures of creating knowledge and innovation that are currently being impeded by the patent model of incentivising innovation? Is it possible to expand the notion of "commons" for developing these possibilities?

The technology model of generating innovation was conceived to be "private" from the beginning. The patenting system originated in the days of the lone inventor and the need to protect his/her invention. Historically, the lone inventor has given way to large corporate or state funded research laboratories in the early twentieth century. Increasingly, science institutions have been also looking at producing knowledge in profit-

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¹ David Bollier, *Silent Theft: The Private Plunder of Our Common Wealth*, Routledge, 2002.

² See discussions on technology and the pace of innovation in Prabir Purkayastha, *Technology: Breaking the Cycle*, Academic Seminar, Brasilia, IBSA Summit on 12 September, 2006.

oriented ways similar to those used by global corporations in creating new technologies. With the Bayh-Dole legislation³ in the US, this model has come to dominate publicly funded science in the US. In India, as elsewhere, the belief the direction that the US has moved in is a good way to go is gaining ground.

Interestingly, this is also a time in which alternate models of generating knowledge and innovation⁴ have gained ground. The Free Software Movement has shown that networked and open collaborations of “hackers” can produce software of far better quality than what the best of well-heeled corporations working in isolation can manage. The power of open, collaborative structures, working without so-called material incentives is visible in this model. The Free Software Movement has thus resurrected older models that have played key roles in successful innovation in technology development, such as the cases of the steam engine development in Cornish mines⁵ and the blast furnace developments⁶ in Great Britain and the US.

The question we would like to explore in this paper is if we accept the concept of a knowledge economy, what are the instruments most appropriate for the expansion of the knowledge economy, especially for countries such as India, Brazil and South Africa? Is there evidence to believe that incentives for innovation require a strong patenting regime or is this a one of these claims made into truth through repetition?

Reproduction of Innovation: Patents and Copyrights

A number of recent cases in the United States Supreme Court⁷ and in the US Federal Court dealing with patents have shown that companies investing heavily in

³ An easily accessible critique of Bayh Dole Act is Clifton Leaf, *The Law of Unintended Consequences*, *Fortune*, September 19, 2005

⁴ Prabir Purkayastha, Satyajit Rath, Amit Sengupta, *Looking at Knowledge and Science as Commons*, Background Paper, Workshop on Science Commons, Delhi, 18th January, 2008.

⁵ Alessandro Nuvolari, *Collective Invention during the British Industrial Revolution: The Case of the Cornish Pumping Engine*, Eindhoven Centre for Innovation Studies, The Netherlands, Working Paper 01.04, May 2001.

⁶ Robert C. Allen, *Collective Invention*, *Journal of Economic Behavior and Organization* 4, 1983

⁷ One of the important cases is *KSR Vs Telefax*. In this case a number of hi-tech companies, who are regarded to be innovative, sided against easy granting of patents. The exception was of course the pharma companies who were on the other side. The judgement raised the bar on patents. “We build and create by bringing to the tangible and palpable reality around us new works based on instinct,

advanced technologies are moving away from the patent model. A major exception to this is the big pharmaceutical company sector.

The current developments in software – the free and open source software (FOSS) movement – has forcefully counter posed the concept of “commons” to that of intellectual property rights. Intellectual property rights, in this view of the world is nothing but an attempt to exclude people from the domain of knowledge by enclosing it, similar to the enclosing of commons carried out over the last 500 years: it is simply using a legal artifice to privatise knowledge which is publicly held. The struggle *against intellectual property rights* of various kinds is then converted in a battle *for preserving the global commons*, specifically knowledge in its various forms.

The last few decades have seen the creation of a new category of private property rights called Intellectual Property Rights, bringing under one umbrella what were earlier disparate rights. Thus different kinds of private property rights — creative rights of authors under copyright and industrial property rights such as patents, trademark, trade secrets and industrial designs – has been brought under the common rubric of Intellectual Property Rights (IPR). The objective of this exercise of renaming was two fold. First, it sought to give a cover of individual creativity to legitimise essentially corporate rights. The second was to expand enormously the scope of these rights.

The impact of this new IPR regime, coupled with the global trading regime under WTO, has lead to the private appropriation on a grand scale of commonly held biological and knowledge resources of society. The patents regime today has expanded to patenting of life forms, genetic resources, genetic information in life sciences, patenting methods and algorithms in computational sciences and even patenting of how business is done. Not only are methods and algorithms being patented, the copyright has been extended to software and all forms of electronically held information. Traditional

simple logic, ordinary inferences, extraordinary ideas, and sometimes even genius. These advances, once part of our shared knowledge, define a new threshold from which innovation starts once more. And as progress beginning from higher levels of achievement is expected in the normal course, the results of ordinary innovation are not the subject of exclusive rights under the patent laws. Were it otherwise patents might stifle, rather than promote, the progress of useful arts. See U. S. Const., Art. I, §8, cl. 8. These premises led to the bar on patents claiming obvious subject matter established in *Hotchkiss* and codified in §103. Application of the bar must not be confined within a test or formulation too constrained to serve its purpose.” *KSR International v Telefax* US Supreme Court.

knowledge and biological resources held and nurtured by different communities are being pirated by global corporations. Increasingly, the enterprise of science as a collaborative and open activity for creating knowledge is being subverted into a corporate exercise of creating monopolies and milking super profits from the consumers.

The impact of such appropriation is now visible. The HIV/AIDS epidemic has shown that what stands between life and death of the victims is the profit of big pharma. It is impossible for the vast majority of the people in the globe today to pay the costs of new life saving drugs which are patent protected. If the IPR regime has been damaging to the life of those suffering from disease, what lies in store for agriculture is even worse. With biotechnology and bioinformatics, corporate seed companies and corporate plant breeders will control global agriculture and food production. With food prices already sky-rocketing, the impact of such a monopoly on the vast sections of the people can well be imagined.

Earlier, copyright was used to create monopolies in software. With changing interpretations of patenting, software is now also being patented in many countries. As the information technology spreads to all our activities, every sphere of such activities will be controlled by patents or copyrights.

Proponents of a strong IPR regime claim that even if patents have the above social costs, they are great for promoting innovations required by society. Even if we focus narrowly on the question of costs of patenting against the benefit it gives in terms of revenue, figures indicate otherwise: the bang is not worth the buck involved in patenting.

In a forthcoming book, two researchers Bessen and Meurer⁸ have analysed the numbers in terms of revenues generated from patents as against cost of filing, maintaining and defending patents in courts. In their view, the data shows that except in the case of pharmaceuticals, patents generate far more litigation costs than revenue. The numbers are clear: domestic litigation costs —16 billion dollars in 1999 alone — was about twice the revenue for patents. Even in this, almost two thirds of the revenue was from pharmaceuticals and chemicals. Worse, the more innovative the company, more

⁸ James Bessen and Michael J. Meurer, *Innovation at Risk*, Princeton University Press, <http://researchoninnovation.org/dopatentswork/>).

was the likelihood of it being sued. The software and business method patents fared the worst, with costs far outstripping the benefits of patenting. Even if we examine, not the broader question of whether societies benefit due to greater innovation, but the very narrow one of whether companies that are innovative, benefit from patenting, the answer is that they do not. This answer that Bessen and Merurer come to is no different from what others have discovered in the past: if patents did not already exist, it would be a poor way of rewarding innovation.

Research of Bessen and Meurer, Boldrin and Levine also show that patents do not promote innovation in societies either. Most of the historical data from countries that had different forms of patent protection do not show significantly different rates of innovation. Neither are current data any different.

Historical Look at Patents: Cornish Mines and Blast Furnaces in Cleveland Area

The need for patents has always been articulated as a necessary social evil. The US Constitution allows the Congress, "To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." Thus even in the US, this exclusive or monopoly rights is given not because the inventor somehow owns the idea embodied in the patent but in order to promote science and technology, therefore larger societal goals.

Patent as an incentive, gives a monopoly to the inventor for a certain period in lieu of which he/she makes the invention public. In economic terms, this monopoly allows the patent holder to extract rent from all users of the patents: it is the state allowing the patent holder the right to levy a private tax. Therefore, the question arises whether patents (or monopolies) are the best form of providing such incentives?

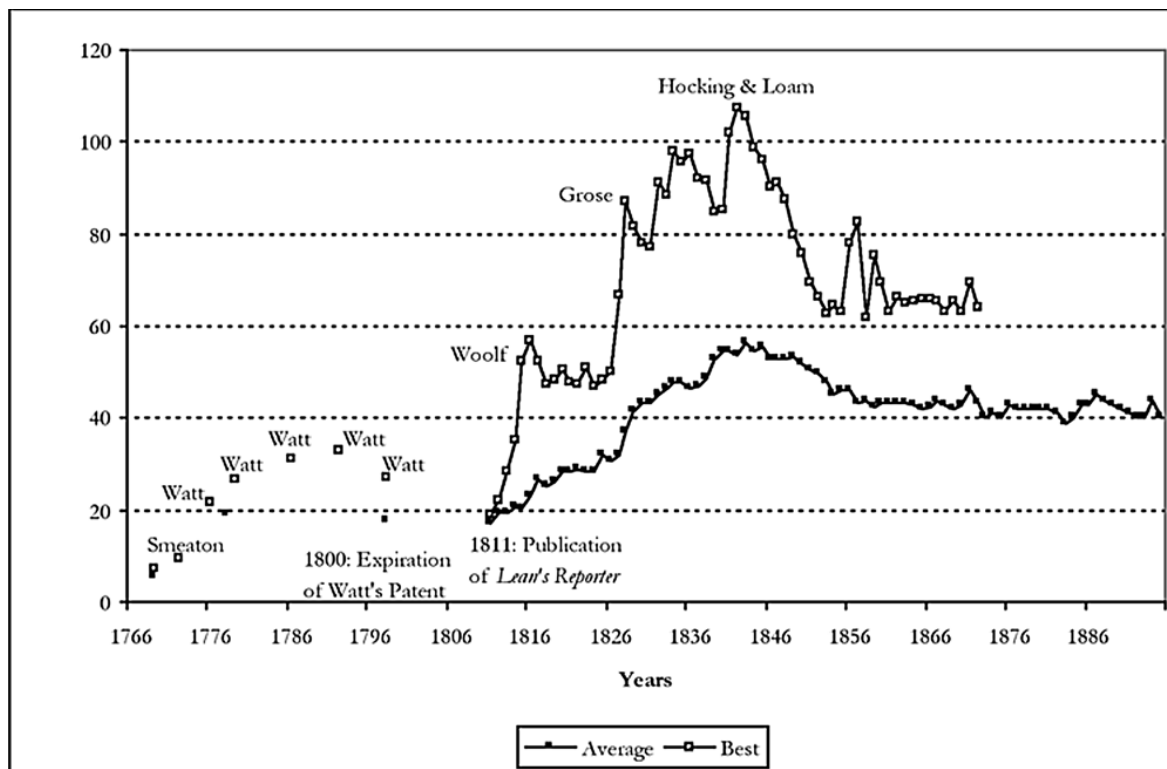
Even if we accept that material incentives need to be given to the inventors, patent monopolies however are not the only form of incentives. Others could be a royalty for the inventor from any producer who wanted to work the patent, but not a monopoly over all reproduction of the invention. This is what in patent literature would be referred to as an automatic license of right. Or it could be the state offering prizes from its kitty for

socially useful inventions, a policy that a number of states have followed in the past for encouraging inventors.

The question is whether the monopoly patent regime has helped in promoting innovation. For this, let us start with the most celebrated innovation, which in all text books is stated to be one of the key elements of Industrial Revolution: the Steam Engine. James Watt perfected his version of the steam engine for which he secured a patent in 1769. In 1775, using the influence of Mathew Boulton, his rich and influential business partner, he succeeded in getting the Parliament to pass an Act extending his patent till 1800. This gives us an opportunity to examine the developments in steam engines and deciding whether the Watts patent helped in promoting innovation or did it actually stifle development.

The major beneficiary of the advances in steam engines would have been the mining industry in Cornwall. Watt spent his entire time suing the Cornish miners if they tried to make any advances over his design. The firm of Boulton and Watts did not even manufacture steam engines then, they only allowed others to construct the engines based on Watt's designs for which they claimed huge royalties. If we examine the increased efficiencies of steam engines and plot it against time, we find that after the initial Watts breakthrough, during the period that Watt had monopoly, all further improvements virtually stopped, starting again only after the expiry of his patents (figure below). During the period of Watt's patents the U.K. added about 750 horsepower of steam engines per year. "In the thirty years following Watt's patents, additional horsepower was added at a rate of more than 4,000 per year. Moreover, the fuel efficiency of steam engines changed little during the period of Watt's patent; while between 1810 and 1835 it is estimated to have increased by a factor of five"⁹. The major advance in steam engine efficiency took place not because of Watt's invention but afterwards.

⁹ Against Intellectual Monopoly, Michele Boldrin and David K. Levine, <http://www.dklevine.com/general/intellectual/againstnew.htm>)



Interestingly, all those who made further advances, such as Trevithick, did not file patents. Instead, they worked on a collaborative model in which all advances were published in a journal collectively maintained by the mine engineers, called the “Lean’s Engine Reporter”. This journal published best practices as well as all advances that were being made. This was the period that saw the fastest growth of engine efficiency.

If we look at the research on increased patent protection helping innovation, very little concrete evidence has ever been found for this thesis. In fact, the evidence not only of Cornish mines but also in U.K. and the US of blast furnaces in the 19th Century, show that collective innovation settings¹⁰ lead to a faster diffusion of technology and more innovation as opposed to the closed, patent based monopolies. Thus, the advances in the two key elements of industrial revolution – steam engines and steel — both came out of a non-patented and open, sharing environment. The recent advances of Free and Open Source Software is not an anomaly but merely the reflection that an open model of developing knowledge is a faster and surer way to innovation than conferring state monopolies.

¹⁰ Robert Allen, *op cit*

Nature of Knowledge Commons

The nature of commons is obviously different if it refers to something that is finite from that if it is potentially infinite. Most of the earlier commons literature originated from goods which though considered as public goods¹¹ – example air, are actually finite. If we do dump increasing pollutants in air, at some point its capacity will saturate. The same is not true of knowledge. The use of a Law of Nature – Theory of Gravitation – does not subtract anything from that theory by virtue of repeated use. Therefore, any enclosure of knowledge is doubly pernicious – it not only reduces access by others, it also puts a price on access to something which is infinitely duplicable.

If we consider only private and public property, only two forms of property are recognised. However, a whole range of ownership exist which are essentially held by groups or communities. Commons therefore allow the expansion from private to public through different forms of community ownership – it provides a variety of shades between private and public property before merging into public domain.

Software, a specifically 20th century creation, used an 18th century legal form – copyright — to impose restrictive access. The problems of this restrictive access is that it does not address the specificity of software – its' generally short lifespan, the nature of the work and so on.

The free software community has used the same legal means – copyrighting — to subvert the copyright regime. However, while in software, *copyleft* or use of a specific copyright license which allows others to use it under same conditions, this may be adequate, this alone is not enough to combat intellectual property rights enclosures, particularly the patenting regime. There, either public disclosure or patenting and offering the patents under license conditions similar to free software's Gnu Public License (GPL) are both being tried.

¹¹ A discussion on the nature of commons can be found in Charlotte Hess and Elinor Ostrom, *Ideas, Artifacts and Facilities: Information as a Common Pool Resource*, <http://www.law.duke.edu/journals/66LCPHess>. Also Charlotte Hess and Elinor Ostrom (ed), *Understanding Knowledge as a Commons*, MIT Press, 2008. However, the focus of these works is more on looking at information commons and open access to information.

Traditionally, music or books are not considered knowledge. They would be considered artefacts, which therefore could have ownership. Copyright – the dominant form of ownership of these artefacts — originate from the concept of authorship which is protected through copyright. Copyright has two aspects, one is that it confers permanent right against distortion and appropriation through plagiarism on the author, the other is the right to make copies. The second is a temporary monopoly which can also be bought and sold. However, the digital age brings out the possibility of infinite number of copies without any transmission loss. Books, films and books and music can be distributed freely at virtually no costs. How then do we consider copyright – the right of the author to recover money from his or her creative work through a monopoly, which produces artificial exclusions today? If technology makes reproduction a trivial exercise, should society artificially impose monopoly of the author? If not, how do we compensate the creativity of the artist or the writer? The creative commons license, which traces itself to the Gnu Public License, attempts to address some of these widening considerably the ambit of commons.

The enclosure of the commons is not only for areas such as science and arts, but also in traditional knowledge. As has been repeatedly pointed out, community based knowledge is appropriated by pharmaceutical and other companies and privatised in various forms. This pertains to biological resources nurtured by communities or specific knowledge and practices. The struggle for protecting the rights of such communities is also a struggle for protecting the traditional knowledge as commons. These commons are not public domain, but the common property of a group and therefore allows for community rights as opposed to private property of individuals and corporations. Recently, the commons license approach¹² has been considered for protecting traditional knowledge also.

The impact of privatisation of knowledge and science is also changing the way science is being done. Science is no longer the collaborative and open activity aimed at creating new knowledge about nature. It has become a secretive exercise where

¹² The Kerala Government has recently released an Intellectual Property Rights Policy for Kerala where traditional knowledge is sought to be protected using a variant of a “commons” license.

a patent is filed before a paper is published. Ideas are not shared as they have now commercial value. This is occurring at a point of time where the Internet and other forms of communications have multiplied the possibility of open, collaborative work enormously.

Production of Knowledge: The Institutional Structure of Science

The monopoly exercised over knowledge translates into the ability to extract super profits by using this monopoly to sell either software or a medicine or a seed. However, the potential of a commons approach lies in not only preventing such monopolies, but also in production of knowledge itself. The commons licenses are only one aspect of the larger struggle of production and reproduction of knowledge. The Free Software movement has shown the power of the new networked structures in the creation of new knowledge and new artefacts. Never before, the society has the ability to bring together different communities and resources. What stands in the way of liberating this enormous power of the collective for production of new knowledge and designing new artefacts is the monopoly rights and private appropriation inherent in the neo-liberal IPR order.

The earlier system of development of scientific knowledge resided primarily within the structures of higher education. The universities, colleges and other institutions of higher learning were the centres where new advances in science were located. As these centres of education were relatively autonomous of both the state and the market, the system of generating new knowledge was not closely bound by immediate class needs of society. This is what produced within the university system a sense of independence and self-regulation – the education given to the students had larger purpose than merely serving capital or the needs of the state. This is also why the educational system also provided a place for contestation – it was the place where new ideas arose not only in the various disciplines but also about society itself.

The humanist view of science and technology fitted itself very well into this overall structure. Science was supposed to produce new knowledge, which could then

be mined by technology to produce artefacts. The role of innovation was to convert ideas into artefacts — therefore the patenting system that provides protection to useful ideas embodied in the artefacts.

The transformation of this system that existed for more than a hundred years has come from two different sources. One is that science and technology are far more closely integrated than before, making the distinction between scientific knowledge and technological advance more difficult to distinguish. An advance in genetics can translate to the market place much more quickly than earlier. Computers and communications have also a similar pace of development, drawing some of the sciences much closer to the systems of production than earlier. The second is the conversion of the university systems to what are essentially profit making commercial enterprises¹³ under the current neo-liberal order. The dwindling public financing of education and the rise of corporate funding has emerged as a major threat to scientific research.

Market fundamentalism is today profoundly altering how education itself is taking place. Students are regarded as consumers and the university-education system is structured like any other commercial enterprise that looks primarily at its bottom line. A deeper analysis of nature, which has no immediate commercial market, is now being downgraded in favour of what the industry considers as “lucrative” research. Not only does it distort the larger system in which long term knowledge is devalued in favour of immediate and short term gain, it also shifts research priorities away from what society needs as a whole to the needs of those who can pay. As university research is increasingly being funded by private corporations, a wholesale shifting of research priorities is taking place. Science is no longer for advancing knowledge and the well-being of society but almost entirely for generating profits for the educational enterprise itself.

The impact of this can be seen from earlier if we compare science as it existed decades ago and now. Let us take two examples. The green revolution came out of public domain science – there was no price to be paid by the farmer for utilising its

¹³ “Academic administrators increasingly refer to students as consumers and to education and research as products. They talk about branding and marketing and now spend more on lobbying in Washington than defense contractors do.” Jennifer Washburn, *University, Inc.: The Corporate Corruption of Higher Education*, Basic Books, 2005.

advances. Today, the gene revolution is controlled by a few private corporations – Monsanto and various pharma companies. The second example is when Salk was asked about who owned the patent to his polio vaccine, he said the people. An answer a scientist is unlikely to give today.

The Bayh Dole Act in the US is the one that converted publicly funded research into privatised knowledge. It has had very adverse impact in the US. Fortune Magazine held the Bayh Dole Act responsible for pushing up the cost of medicine in the US. “Americans spent \$179 billion on prescription drugs in 2003. That’s up from ... wait for it ... \$12 billion in 1980.” The same article also stated that the Bayh Dole Act had actually retarded the progress in science instead of helping it, discovery of new molecules, a measure of innovation in pharmaceutical industry, has actually come down. It has however helped a few companies, universities and scientists become fabulously rich, but at the expense of scientific development and the common people. Unfortunately, the market fundamentalists world-over are pushing ideas similar to the Bayh Dole Act and other measures to convert the educational systems to University Industrial Complexes.

Science and Open Models

Today, the information technology sector¹⁴ has shown that new technologies and methodologies can be developed by cooperative communities. It may be argued that this sector is unique in that the “reproduction costs” of the “artefacts” – the software— are relatively low. However, the question needs to be posed whether it is possible to design such approaches for other areas such as, say, the life sciences? Is it possible to have similar cooperative communities that work together to produce new products? Is it possible to envisage ways by which artefacts can be reproduced and reach the community without high costs of such “reproduction”? For this, we need to examine what are the structures of knowledge production that are in consonance with the needs of producing new knowledge and innovation in specific sectors. Two such examples are given below.

¹⁴ John Willinsky, 2005. The unacknowledged convergence of open source, open access, and open science, First Monday, volume 10, Number 8, at http://www.firstmonday.org/issues/issue10_8/willinsky/

Agribiotechnology: There is little doubt that genetically engineered plants are going to create an enormous impact on agriculture in the future. That it has not done so till date is due to various reasons. One of course is that genetically modified organisms are in their infancy. The second and perhaps an even more important is that unlike the Green Revolution that came out of public domain science, the Gene revolution is coming from private domain science. The prospect of agriculture of any country passing into the hands of a few multinational companies is not a re-assuring one. It is compounded by the fact that most of the successful biotech seed companies are either chemical companies such as Monsanto, Du Pont etc., while others pharmaceutical companies — Novartis, Bayer, etc. And the track record of both regarding public good has been rather poor. Therefore the discomfort that people have regarding their countries' agriculture passing into multinational hands is not unjustified.

Greg Traxler, in his paper for FAO shows the rapid increase of transgenic crops in some countries and for specific crops. "In 1996, approximately 2.8 million hectares were planted to transgenic crops or genetically modified organisms (GMO) in six countries (James, 1998). Adoption has been rapid in those areas where the crops address important production problems, and by 2003 global area had risen to 67.7 million hectares in 18 countries (James, 2003)... Six countries (the USA, Argentina, Canada, Brazil, China and South Africa), four crops (soybean, cotton, maize and canola) and two traits (herbicide tolerance and insect resistance) account for more than 99 percent of global transgenic area."¹⁵

In order to explore such possibilities, a possible example would be the development of useful crop varieties in the agribiotech sector. The bulk of 'innovative technology' in this arena currently appears focussed in making genetically modified crops (GMOs, so to say), a technology that is patent-protected by the MNC sector. An interesting step away from this corporate model of agribiotech development has been the establishment of an 'open source biology'¹⁶ platform, centred around new microbes useful

¹⁵ The Economic Impacts of Biotechnology-Based Technological Innovations, May 2004, ESA Working Paper No. 04-08, Food and Agriculture Organization, Greg Traxler.

¹⁶ W Broothaerts et al, Gene transfer to plants by diverse species of bacteria, Nature 433: 583-4. Feb. 10, 2005.

for making transgenic plants. The most advanced initiative of this kind is the Australia-based CAMBIA/BIOS. While the first acronym refers to the broader scope of promoting biological innovation for agriculture (Centre for the Application of Modern Biology to International Agriculture), the second refers to the Biological Innovation for Open Society, the specific arm of CAMBIA dedicated to open-source biology. This particularly focuses on freeing the basic technological tools of biotech for general use, so that innovation at the application level is not restricted, particularly by the biggest multinationals in the biotech sector. It promotes a protected commons license for use in this regard. It also operates a web portal BioForge, similar to the SourceForge of the open-source software movement. While the BIOS initiative is not identical to the free-software idea, it appears to be the most developed initiative of this kind so far.¹⁷

However, such a knowledge commons approach may still depend on the conventional manufacturing sector for delivery of the products – for example, the seeds — to the market. Also, it still involves making transgenic crops, which has already run into serious criticism.

One alternate possibility that is being discussed globally is to take advantage of the growing ability to sequence the entire genetic sequence of individual organisms at much lower costs. Such a step in traditional plant breeding for advantageous traits will allow the breeding programmes to overcome some of the major obstacles to creating crop varieties with advantageous traits that breed true so that seeds can be re-used. It would then allow the identification of combinations of genes that confer a particular trait and thus allow reliable selection of varieties with combinations of many advantageous traits. It would even allow the creation of carefully engineered crops in which the introduced gene form providing advantage is not from some other species but from the host crop itself. Such a programme would be of little interest to the profit-sector since farmers can re-use seed. It would require little by way of a manufacturing intermediary, since experimentally generated seed can simply be handed out to be bred by farmers themselves. And it is a programme that would demand a large-scale cooperative global effort between breeders and scientists. Breeders would need to collect and maintain source

¹⁷ T Jayaraman, Note on Promotion of Open-Source Biology in India, Private Circulation.

varieties and carry out careful breeding. Scientists must, on the other hand, generate new ways of handling and interpreting the large mass of data that sequencing-assisted breeding would yield, - essentially, cutting-edge science would result from the enterprise as well.

Open Source Drug Discovery: A similar possibility exists in the area of drug discovery. In 1995 the TRIPS agreement introduced a uniform and higher level of Patent protection across the globe. The promise that this would lead to higher levels of innovation remains a mirage. Globally, the number of New Chemical Entities (NCEs) have progressively gone down over the past decade. Further, of NCEs approved for marketing, a very small fraction – less than 3% — constitute a significant advance over prevailing therapies. An overwhelming majority of new products address needs of the wealthy populations in the global North, while the disease burden is largely in the global South. While the industry researches drugs for lifestyle conditions of the affluent – obesity, erectile dysfunction, baldness, etc. – conditions such as Tuberculosis, Kala Azar, Sleeping Sickness, have to make do with decade old therapies. The last drug developed specifically for Tuberculosis, was introduced some three decades back.

Can open-source drug research and development, using principles pioneered by the highly successful free software movement, help revive the industry? As the cost of genome sequencing drops and the speed at which the sequencing can be done increases exponentially, it is possible to harness this power to solve the problems of health in radically different ways.

An open source model to promote innovation is not a new model and is used extensively in the software sector today. It organises research around researchers across the globe, which draw from a pooled source of information to which they contribute, and to which they pledge to plough back the new developments that accrue. A decade back such a model might have appeared a utopia. Not so today¹⁸ when very powerful tools are available that can create virtual models that can sequence genetic codes of humans that can identify potential targets for interventions in the genetic code. It is possible to process genomic information and on a much larger scale, create public databases of

¹⁸ Bernard Munos, Can open-source R&D reinvigorate drug research? *Nature Reviews Drug Discovery* | AOP, published online 18 August 2006; doi:10.1038/nrd2131.

genomic information and protein structures, identify promising protein targets, and deliver such compounds for clinical trials. It would be based on a collaborative, transparent process of biomedical development to take on health challenges that big pharmaceutical corporations have neglected in favour of what they perceive as “block-buster drugs”. A number of interesting initiatives are currently under way, from tuberculosis to malaria.

There are interesting initiatives being taken in this particular area. Central Scientific and Industrial Laboratories (CSIR) in India has taken a highly ambitious program of generating the next generation of TB drugs¹⁹, still the number one killer in India using an open source model of drug discovery. Malaria is again another area in which a similar initiative is under way since 1999. The Medicines for Malaria Venture has 19 projects which are in the Phase III of drug development.

Such a model can identify new candidates at a fraction of the cost that Big Pharma claims to spend on drug discovery. It has been argued that the major cost in drug development relates to clinical trials that need to satisfy drug regulatory agencies. Today, Big Pharma outsources clinical trials to a dispersed set of Contract Research Organisations. A collaborative open source model could use the same route, with the difference that the entire endeavour – from selection of promising candidates to marketing approval – is organised and overseen by a publicly funded entity or group that promises to place such research in public domain, without insisting on Patent monopolies. It is an idea whose time has come and has the potential to revolutionise the way research is done.

A variant of this approach are the various Public Private Partnerships initiatives underway. All of them share the open source nature of drug discovery but may not subscribe to putting such drugs in public domain. Nevertheless, they have shown that it is possible to bring down the cost of drug discovery from the 500 million dollars claimed by Big Pharma to less than 50 million²⁰ – an order of magnitude drop. It is this price advantage in developing drugs that has now forced the use of such models for what are termed as the “neglected diseases” or the diseases of the poor.

¹⁹ The details of this initiative can be found in <http://mtbsysborg.igib.res.in/>.

²⁰ See Munos op cit.

Clearly the IPR based model for innovation is just not working. Strong IP protection is encouraging protectionism and is harming the way science is done. Many more Patents are taken out to stop others from working than to protect one's own research. It is premised on very high costs of development, that are sought to be recovered through high monopoly pricing of products, thereby closing the door for research that targets conditions of the global poor who do not have pockets deep enough to afford the high prices.

This brings out the power today of using the open source or a commons approach to that of the proprietary systems in vogue today. This is not to say that there are no difficulties with the approach. Rather, it is to suggest a possible example of ways in which the framework of present-day science and technology can be re-cast and used in innovative ways for cooperative generation of useful knowledge. Obviously, each of these areas would have their own specificities as well as demand creating new structures to protect the knowledge commons.


It is clear from the above that the commons approach has emerged not as a marginal view but a rapidly emerging alternative to the current patent ridden approach to science. It is time that the emerging knowledge economies – India, Brazil and South Africa — base themselves not on a stronger (more restrictive) form of intellectual property rights regime but on a “commons” approach. This is the direction that is not only in consonance with the well being of their people but also the direction that science increasingly will take. The constraint is no longer whether such models will work but how much support is available for such initiatives. It is here that the IBSA countries can make a difference.



6.

IBSA: Development, and Scientific
and Technological Cooperation





6. IBSA: Development, and Scientific and Technological Cooperation*

Jo-Ansie van Wyk**

Introduction

Since India-Brazil-South Africa (IBSA) Dialogue Forum Members' adoption of its 'founding document', the Brasilia Declaration in 2003, science and technology (S & T) have been an important focus area for the organisation. The Brasilia Declaration (IBSA, 2003: internet) states,

'The Foreign Ministers identified the trilateral cooperation among themselves as an important tool for achieving the promotion of social and economic development and they emphasized their intention to give greater impetus to cooperation among their countries. While noting that their societies have diverse areas of excellence in science and technology and offer a broad range of potential opportunities for trade, investment, travel and tourism, they stressed that the appropriate combination of their best resources will generate the desired synergy. Amongst the scientific and technological areas in which cooperation can be developed are biotechnology, alternative energy sources, outer space, aeronautics, information technology and agriculture. Avenues for greater cooperation in defence matters should also be explored. The Ministers agreed upon putting forward to their respective governments that the authorities in charge of the portfolio for science and technology, defence, transportation and civil aviation, among others, also hold trilateral meetings, aiming at the creation of concrete cooperation projects.'

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As recently as May 2008, the Foreign Ministers of the IBSA Member States reaffirmed in the Somerset West Ministerial Communiqué that 'IBSA provides a unique framework for trilateral coordination on international issues and cooperation in several sectoral areas whilst ensuring people-to-people interaction making the Forum a meaningful reality to the people of the three countries (IBSA, 2008a: 1).' The main objectives of IBSA are to promote:

- South-South dialogue, cooperation and common positions on issues of international importance;
- Trade and investment opportunities between the three regions of which they are part;
- International poverty alleviation and social development;
- The trilateral exchange of information, international best practices, technologies and skills, as well as to compliment each others competitive strengths into collective synergies; and
- Cooperation in a broad range of areas, namely agriculture, climate change, culture, defence, education, energy, health, information society, science and technology, social development, trade and investment, tourism and transport (IBSA, 2008b: internet).

One of the most important social objectives of this century is to achieve sustainable development. Space S & T can effectively be applied to achieve these objectives, including disaster management and relief, Earth observation, navigation, environmental monitoring such as desertification and deforestation, urban planning, health applications, communications and agricultural planning. Moreover, space-based technological systems enable distance education, telemedicine, wireless communications and emergency telecommunications (Peter et al, 2006: 445).

India, South Africa and Brazil are classified as 'dynamic adopters' by the United Nations' (UN) Technology Achievement Index (TAI). The TAI focuses on four dimensions of technological capacity, including the creation of technology, the diffusion of recent innovations, the diffusion of old innovations and human skills. 'Dynamic adopters' are

dynamic in the use of new technology such as space S & T and Internet, have important high-technology industries exporting successes, but their diffusion of old technology (such as telephones and electricity) is slow and incomplete (UNDP, 2001: 46-49).

Previous IBSA Academic Seminars such as this one has addressed S & T. In fact, one of IBSA's sectoral working groups deals with S & T (DFA, 2006: internet). Since its inception, IBSA Member States have identified cooperation on S & T as one of its sectoral areas. By 2008, S & T cooperation has been limited to nanotechnology, climatology, oceanography and energy (IBSA, 2008a: 13). However, its agenda has so far lacked a special focus on the role of space S & T in achieving IBSA's objectives. Space S & T is no longer merely regarded as a 'privileged instrument for developing international cooperation. In its 2003 White Paper, *Space: a new European frontier for an expanding Union – an Action Plan for implementing the European Space Policy*, the European Commission, for example, states that international space cooperation can not only be limited to S & T and its applications, but that it should be serving all objectives of the European Union (Peter, 2007: 102-102).

IBSA is indicative of regionalism as a pervasive feature of contemporary international affairs. In the case of IBSA, its Member States are increasingly moving towards regional integration, i.e. a process by which states continue to remove obstacles to interaction between them, and create a common focus, rules and action. The aim of this paper to analyse the role of S & T in development, assess the state of space S & T in India, Brazil and South Africa, identify the benefits of space cooperation, and lastly, make recommendations to improve space cooperation in order to achieve IBSA's objectives, as outlined in the Brasilia Declaration. The idea of selecting space S & T as an area of cooperation for development within the IBSA context is not new. See, for example, Gottschalk (2007: 25-34) and Soko (2006). A previous assessment of IBSA Member States' cooperation in the aerospace industry concluded,

'Cooperation across the three IBSA countries in all sorts of fields is still in its infancy. But the commitment is there, the vision is developing all the time, and the need for more intense consultation and communication has never been greater....

Cooperation in aerospace is not a priority of the major players in each of the three IBSA countries. This reflects a host of factors....So the need for more communication, between businessmen, is clear....It should be stressed that Brazil, India and SA appear to be strong in different niche areas, implying significant scope for mutually beneficial collaborative projects.

The ultimate aim of greater aerospace cooperation should not be to provide competition to Boeing and EADS. IBSA should not necessarily even work towards an IBSA supply chain...The companies in the three countries should make more of an effort to get together, to cooperate better, with a view to becoming more meaningful players in existing global supply chains, both individually and collectively. This implies the need for strong governmental guidance and facilitation of cross-border interactions (SAIIA et al, 2006: 15).'

This paper presents a more empirical analysis and provides practical policy recommendations, which the previous analyses lacked. The paper recognises IBSA Member States' global rankings in terms of S & T, and space S & T as a point of departure.

Why does IBSA need to have a space focus?

First, IBSA Member States have considerable space capabilities. This will be addressed in greater detail.

Second, various initiatives and activities by states and commercial actors are indicative of the growing realisation that space S & T should be applied to address development challenges. International space cooperation is reflected in the diverse functional cooperative and regulatory activities coordinated by inter-governmental organisations such as the International Telecommunications Satellite Organisation, the International Telecommunications Union, the International Maritime Satellite Organisation and the World Meteorological Organisation (Sheehan, 2007: 71).

Third, advances in space technology, changes in the nature of space activities, and the increase in the number of space actors and the volume of such activities contribute

to the increased commercialisation of space – a process that can benefit IBSA significantly (COPUOS, 2008: 9).

Fourth, developing countries' low levels of involvement in this terrain remains a concern, and IBSA can play a role in changing this. As recent as April 2008, the Legal Subcommittee of COPUOS stated, '...the transfer of space technology (not only North-South, but also South-South – my insertion) would increase the level of participation of developing countries in space activities and serve as an incentive for such countries to adhere to the United Nations treaties on outer space (COPUOS, 2008a: 7)'.

Fifth, sovereignty and space as a limited natural resource, i.e. character and equitable utilisation of the geostationary orbit. Air space versus outer space not clearly defined.

Sixth, Space science and technology offer numerous socio-economic development possibilities to developing countries. The application of space science, for example, can improve communication, access to education, early warning systems pertaining to agricultural production, atmospheric ozone measurement, droughts, floods and fires, as well as to the large population movements. Satellite remote sensing, for example, can assist developing countries vis-à-vis conflict resolution, environmental protection and crime prevention. Its ability to detect groundwater means that it can greatly benefit the agricultural sector in developing countries. Notwithstanding this, some developing countries regard space applications such as remote sensing, for example, as 'merely tools of global neo-imperialism' (Sheehan, 2007: 127). Since the availability of remote sensing data, for example, governments have started to use this space application for developmental purposes. However, the concern prevailed that developing countries in particular may be exploited by developed countries. To some extent, this view is no longer valid. *Developing* countries such as India, Brazil, Indonesia and China have acquired competitive space capabilities, which contribute to their development agenda. In Brazil, for example, space applications are directed towards development issues such as earth observation (agriculture, environment, natural resources and territorial organization), meteorology, oceanography, communications, navigation and geodesy (Anon, Undated: internet).

Seventh, technologically advanced countries continue to benefit from the increased saturation of the geostationary orbit as these countries have the technology to

access this limited resource. This discriminates against developing countries – especially those with a specific geographical position (COPUOUS, 2008a: 14). This is exactly the type of imperialism that IBSA strives to terminate. If the developed and industrialised countries' approach continues, it will result space science and technology for development failing. Although it is need-orientated and to some extent ecologically sound (if the UN Treaties on Outer Space are adhered to), space applications for development is often not endogenous, cannot be self-reliant, and, for developing countries, is not based on the structural transformations of social agents and structures. Despite its emphasis on human development, state structures in developing countries remain to be the main beneficiaries of space applications. Despite efforts to transform states' developmental strategies to comply with that of a competition state or a developmental state, state capture remains to negatively affect sustainable development. It reiterates the need for a new global space regime for human security and development rather than state security.

Eighth, space is big business, which can earn IBSA significant revenue. Between 2002 and 2007, for example, the global satellite industry revenues reported an annual growth of 11.5%; i.e. from US\$ 71.3 billion to US\$ 123 billion. From 2006 to 2007, the global launch industry reported an increase of 19% in its annual revenues. With its growth of 18% between 2002 and 2007, global satellite services remain the driver of the satellite industry (Satellite Industry Association, 2008: 5, 6 & 7).

Science, Technology and Development

S & T are significant drivers of development. Access to, the innovation of and the distribution of, S & T has upset the balance of power between states, their wealth, status, prestige, power and influence. Technological determinism - and its corrolary social determinanism – has resulted in technologically advanced countries to be politically more stable, economically more prosperous, and more educated. Globally, technology structures societies and global interactions by creating hierachies of power between the haves and have-nots, suppliers and users, and between states and market-driven multinational corporations (Chadwick, 2006).

Today, developed and developing countries agree that recourse to space technology can greatly enhance socio-economic development. A growing number of developing countries such as, for example, Argentina, Brazil, China, India and Nigeria are implementing national space programmes with a strong developmental focus (Z-Coms, 2006). Nigeria, for example, has stated that it regards its National Space Policy as 'an essential tool for its socio-economic development' and, in August 2002, South Africa with the United Nations (UN) and the European Space Agency in support of the World Summit on Sustainable Development (WSSD), co-hosted a workshop on 'Space technology provides solutions for sustainable development.'

The reduction of poverty and underdevelopment has been identified as of crucial important. IBSA Facility Fund was established 'to help assist the most disadvantaged amongst the developing countries to assist them to realise some of the programmes that would otherwise take a long time to realise if funded by other donor agencies. This is a very rapid response fund (Matjila, 2007: internet).'

According to the critical alternative approach to development, the process of sustainable development should be:

- need-orientated (material and non-material);
- endogenous (coming from within a society);
- self-reliant in terms of human, natural and cultural resources;
- ecologically sound; and
- Based on the structural transformations of existing economical, societal, and power and gender relations, which uphold the status quo (Thomas, 2005: 657).

Table 1 outlines some aspects relating to the application of space science as a developmental tool

Table 1: Space S & T as developmental tool

(Author's own compilation)

SPACE S & T	FACILITATING FACTORS	MITIGATING FACTORS
State-led application of space science	State access to resources and international organisations (such as the UN's COPUOS and international financial institutions)	Greater state control of space affairs Space for ideology, not development
	Supply-demand: Everybody wants to have access to technology	Cost of access to space technology
Market-led application	Less state intervention Export and increased international cooperation	Government control Limited private sector
	Development of expertise	Space for profit, not development

Most countries strive to achieve common objectives such as security, autonomy, welfare, and status and prestige. States' search for national security is confirmed by the fact that all states maintain military forces to protect its national security, which governments often claim is subject to threats and vulnerabilities. The latter often refer to empirical characteristics of a state, namely its geographical location, which may make it easily accessible for an intervening military force. Threats refer to those vulnerabilities which an adversary can exploit. An important aspect of security is self-reliance. States want to maintain independence from others and address the needs of its population.

In IBSA Member States, S & T are widely regarded as key indicators of socio-economic development. It is increasingly contributing to the wealth and prosperity of states as a development alternative. IBSA states can greatly benefit from the application of space science, which can assist key political and economic decision-makers. Space science is applied to, for example, early warning systems pertaining to droughts, floods and fires, as well as to the large population movements. Furthermore, space S & T's application can be useful in other areas such as the environment and population dynamics, desertification and erosion prevention, agriculture, food security, crop prediction, inventories and management of natural resources such as forests, oases, groundwater, dams, coasts and lakes, land-use and planning, monitoring volcanoes and earthquakes,

and infrastructure development (COPUOS, 2007: 18-22, Kasturirangan, 2007: 159-166, Padma, 2007: internet).

The International Politics of Space: from Networks to Bulwarks

No state's space program is driven by scientific interests only. As Sheehan states (2007: 1),

'In space, as on Earth, we see the political power of ideology and nationalism, the use of propaganda and foreign aid, the centrality of questions of 'national security' and the pursuit of that security through the acquisition of military capabilities, tensions between the richer, more industrialised advanced states, and the poorer countries of the 'South'.'

Interactions between states and between states and commercial non-state space enterprises are intensely political, and rivalry over natural, political and economic resources, access to it, the ability to sell or distribute it, as well as the ability to generate it is increasingly distinguishing powerful and weak states from each other. Governments often take responsibility for the political and budgetary aspects of a state's space programme, the maintenance of space facilities, and its international space law obligations. A government's space policy and national legislation provides, or not, assurances to the space industry and foreign investors in these domestic industries. Primarily, governments want to decide who gets what, where, when and how in their state and prefer to control key space technology assets, whereas commercial enterprises such as multinational corporations need profits, clients and markets.

During the Cold War, space affairs were predominantly approached from a Realist perspective. Since its first involvement in space affairs, individual IBSA Member States' approach to space affairs was predominantly Realist in a Cold War context. For example, India's programme was established to provide security in an unstable neighbourhood. South Africa assisted NASA and Brazil attempted to counter US'

dominance in its region. The so-called Idealist 'myth of space demilitarisation', which characterised the 1980s was soon replaced by a Liberalist approach to space affairs. In the aftermath of the Cold War, European integration, for example, paved the way for greater cooperation in Europe. Through projects such as the International Space Station (ISS), for example, Liberalists' emphasis on the organisation of economic activities and the sharing of resources amplified the inadequacy of a Realist approach to the study of space (Sheehan, 2007: 15-16). However, more recently Constructivists' ideas have enhanced our understanding of international relations. Unlike Realism and Neo-realism, for example, which focus on the material in international relations, Constructivism focuses on the social aspects of international relations. In other words, Constructivists focus on the ideas and beliefs underlying actors' international behaviour and their shared understandings. Ideas, rather than material aspects, constitute the international system (Wendt, 1992 & 1999).

In space affairs, it is precisely this *social* aspect that drives international relations. States and other actors want to enhance their status and prestige, they want to consolidate their national interests, and they want to improve the social conditions of their populations. Moreover, Constructivists argue that power remains unequally distributed in international relations and that states continue to be divided into the powerful and powerless. Increasingly, developing countries are indicating the importance of space science for their development. In this sense, space has been recently been re-constructed.

Having been predominantly a Cold War military arena, space is now a developmental arena to fit into a particular government's development policy agenda. The Millennium Development Goals (MDG), for example, stresses the role of public-private partnerships (PPPs) to make the benefits of new information and communications technologies available to developing countries. This reiterates the importance given to the role of technology in development. Contrary to its negative effects, the technological manifestation of globalisation can be put to good use. If the argument of Structuralist Theorists are followed that developing countries rely too heavily on primary products, then technology can be used to overcome this dependence of primary products.

Despite more developing nations acquiring space interests and capabilities, access to and the benefits from space remain unequal notwithstanding the fact that International Space Law (ISL) guarantees these rights. The following illustrates this. Declared

as a limited resource by the International Telecommunications Union (ITU) in 1973, geostationary orbital (GEO) positions and radio frequencies are increasingly demanded by commercial and non-state commercial state entities, which, for example, have extended financial interests in the satellite industry. In 2004, for example, the global satellite industry generated US\$ 103 billion, and is expected to generate US\$ 158 billion by 2010. Telecommunication services are the largest segment of these revenues. The global space industry market is estimated to be US\$145 billion over the next decade, whereas the satellite market is estimated at US\$104.5 billion and the launch market at US\$40 billion. The growing demand for GEO positions and radio frequencies for military purposes contributed 45% of all satellite service revenues from 2002 to 2007, with the wars in Iraq and Afghanistan demanding large satellite bandwidths to support coalition military operations (Jakhu, 2007: 173-208).

The State of Space S&T in IBSA: A Brief Overview

IBSA Member States have a long been involved in space diplomacy in a number of areas:

1. The ratification of the five UN Treaties on Outer Space (see table 2). These Treaties are the:

- Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (*Outer Space Treaty*) (1967) lays down specific Space Law principles such as the prohibition of the use and installation of nuclear weapons, any kind of weapons of mass destruction and military bases, as well as the prohibition of exploration of any kind on the Moon and other Celestial bodies, in accordance with international law. The OST also stresses the promotion of international cooperation in the exploration and use of space, the Moon and other celestial bodies. Furthermore, the OST establishes the principles of non-appropriation and the fact that no state can claim sovereignty of or occupy outer space, the Moon or any other celestial body.

Moreover, the OST prescribes the role of non-governmental activities in outer space, the Moon and other celestial bodies, namely that their activities continue under the supervision of the appropriate state party to the Treaty. The responsibility for compliance of the activities of an inter-governmental organisation is borne by the relevant organisation and states party to the Treaty participating in such an organisation.

Finally, the OST deals with liability, the position of astronauts, as well as states' responsibility to inform the UN Secretary General and the international scientific community of the nature, conduct, locations and results of its activities. (OST in Haanappel, 2003: 210-213).

- Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (*Rescue Agreement*) (1968) establishes the legal framework for emergency assistance to astronauts, which include immediate notification of the launching authority as well as the UN Secretary General. Notification must also be given about any space object which has returned to Earth. It also makes provision for search and rescue operations, the prompt return as well as the recovery of space objects. The launching authority which may be a state is responsible for all costs incurred (Shaw, 2003: 479-486).
- Convention on International Liability for Damage Caused by Space Objects (*Liability Convention*) (1972) imposes an international and an *absolute* liability on a launching state, or states, as well as on those states members of an inter-governmental organization for any damage caused by their space object. 'Launching state' is defined in Article I as 'a state which launches or procures the launching of a space object or from whose territory or facility a space object is launched' irrespective of the success, or not, of the launch. Furthermore, Article I defines damage as 'the loss of life, personal injury or any other impairment or health; or loss of damage to property of States or of persons, natural or juridical, or property of international intergovernmental organizations.' This also applies to any damage caused by a space object on the surface of the earth or to aircraft

flight. In case no diplomatic solution is found for a claim of compensation, the parties concerned have to establish a Claims Commission comprising three members (Liability Convention in Haanappel, 2003: 259-265).

- Convention on Registration of Objects Launched into Outer Space (*Registration Convention*) (1975) obliges states to register all space objects in a Register, which had been maintained by the UN Secretary General since 1962. States are required to furnish the following information, namely the name of the launching state(s), an appropriate designator of the space object or its registration number, date and territory or location of launch, basic orbital parameters such as nodal period, inclination, apogee and perigee, and the general function of the object (Registration Convention in Haanappel, 2003: 215-218).
- Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (*Moon Agreement*) (1979) extends International Space Law to govern activities on the Moon and other celestial bodies. One of the main thrusts of the Moon Agreement is the principle of the exclusive use of the Moon and celestial bodies for peaceful purposes, as well as its continued de-militarisation. However, military personnel may be used, but, as outlined in the Outer Space Treaty, only for peaceful purposes. It designates the moon as a global commons for all humankind, which are not subject to national appropriation and occupation. No private ownership is allowed, but all state parties have the right to exploration and use of the moon.

The Moon Agreement obliges states parties to the agreement to establish an international regime to govern the exploitation of the natural resources of the moon once such exploration becomes feasible. As outlined in Article 11, the main purpose of this regime is:

- The orderly and safe development of the natural resources of the Moon;
- The rational management of those resources;
- The expansion of opportunities in the use of those resources;

An equitable sharing by all states parties in the benefits derived from those resources, whereby the interests and needs of the developing countries, as well as the efforts of those countries which have contributed either directly or indirectly to the exploration of the moon, shall be given special consideration (Moon Agreement in Haanappel, 2003: 219-226).

Table 2: Status of international agreements relating to activities in Outer Space

(OOSA, 2008: 9, 11 & 14)

	Brazil	South Africa	India
UN Outer Space Treaty (1967)	R	R	R
UN Rescue Agreement (1968)	R	R	R
UN Liability Convention (1972)	R	S	R
UN Registration Convention (1975)	R		R
UN Moon Agreement (1979)			S
Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water (1963)	R	R	R
Convention Relating to the Distribution of Programme-Carrying Signals Transmitted by Satellite (1974)	S		
Agreement on the Establishment of the INTERSPUTNIK International System and Organisation of Outer Space Communications (INTR) (1971)			R
Agreement Relating to the International Telecommunications Satellite Organisation (ITSO) (1971)	R	R	R
International Telecommunication Constitution and Convention (ITU) (1992)	R	R	R
Convention on the International Mobile Satellite Organisation (IMSO) (1976)	R	R	R

The end of the Cold War is characterised by the rapid onset of technological globalisation and the unprecedented commercialisation of space. Since 1992, a re-definition of the significant principles of ISL followed in the form of UN General Assembly (UNGA) resolutions. Apart from the five Outer Space Treaties, the UNGA has adopted, apart from the *1963 Declaration of Legal Principles Governing the Activities of States in the Exploration and Uses of Outer Space*, an additional set of legal principles, which provide for the application of International Law, the promotion of international cooperation and understanding in space activities, the dissemination and exchange of information through transnational direct television broadcasting via satellites and remote satellite observations of earth, and general standards regulating the safe use of nuclear power

sources necessary for the exploration and use of outer space. These additional declarations and legal principles are the:

- Declaration on International Cooperaton in the Exploration and Use of Outer Space for the Benefit and in the Interst of All States, Taking into Particular Account the Needs of Developing Countries 91996); and
- Application of the Legal Concept of the 'Launching State' (2004) and its ongoing work on State practice vis-à-vis the registration of space objects.

2. Increased international cooperation and South-South space diplomacy

Within the UN system

Subsequent to the launch of Sputnik-1, the UN General Assembly (UNGA) established an ad hoc Committee on the Peaceful Uses of Outer Space (COPUOS), which, in 1959, was redesignated as a permanent Committee on the Peaceful Uses of Outer Space. COPUOS' mandate includes reviewing the scope of international cooperation in peaceful uses of outer space, devising programmes to be conducted under the UN's auspices, encouraging ongoing research, disseminating information on outer space matters, and studying legal challenges arising from the exploration of outer space. COPUOS performs its mandate through two standing Subcommittees, namely the Scientific and Technical Subcommittee and the Legal Subcommittee. Almost from its inception, Brazil and India participated in COPUOS. South Africa only joined it in 2004 (COPUOS, 2008: internet).

North-South and South-South bi- and multilateral relations and cooperation

Established in 1994, the Brazilian Space Agency (AEB), under civilian control, is an example. The leading Latin American space agency, the AEB operates a spaceport at Alcântara and a. Initially, the AEB relied heavily on the US, but as issues pertaining to trechnological transferred emerged, it started to cooperate with developing countries such as, for example, Ukraine, Israel, Argentina and China. Brazil's bilateral international space cooperation includes, for example, cooperation with Ukraine, India and China.

The Indian Space Research Organisation (ISRO) was established 1969. Today, India's international space cooperation includes cooperation with, for example, Canada, China, European Space Agency, France, Germany, Hungary, Indonesia, Mauritius, Norway, Russia, Sweden, Syria, The Netherlands and Ukraine (ISRO, 2008: internet).

3. India, Brazil and South Africa have well-developed space S&T sectors

Table 3 compares selected space indicators of IBSA Member States.

Table 3: Some IBSA space indicators

(Brazilian Embassy Pretoria & UCLAS, 2006; 80; GCIS, 2006: 480; Anon, Undated: internet; ISRO, 2008a: internet; *Washington Post*, 9 July 2008)

	BRAZIL	SOUTH AFRICA	INDIA
POLITICAL FRAMEWORK			
Space agency	Brazilian Space Agency (AEB)	To be established once Draft National Space Agency Bill gazetted for public comment legislated	Indian Space Research Organisation (ISRO)
Space policy	National Policy on the Development of Space Activities (PNDAE) and the National Space Program - PNAE	Space Affairs Act (Act 84 of 1993) & Space Affairs Amendment Act (Act 1530 of 1995). Draft National Space Agency Bill gazetted for public comment.	Yes
SPACE PROGRAMMES			
	Space Applications, Satellites and Payloads, Satellite Launching Vehicles and Sounding Rockets, Space	SumbandilaSAT, SALT, KAT and possibly SKA	Indian National Satellite System (INSAT), Indian Remote Sensing Satellite (IRS) System, Stretched Rohini
SPACE INFRASTRUCTURE/FACILITIES			
	Alcântara Launch Center (CLA) & Barreira do Inferno (Rocket launch site)	Astronomy, testing facilities, satellite communications, satellite applications and ground segment, and research	Numerous facilities.
SATELLITES AND PAYLOADS			
	Small data collection satellites, remote sensing satellites (with China), micro-satellite, small earth observation satellites, equatorial low earth orbit satellite constellation (low cost communications to remote areas)	None	Small data collection satellites, remote sensing satellites (with China), micro-satellite, small earth observation satellites, equatorial low earth orbit satellite constellation (low cost communications to remote areas)
SPACE ACTIVITIES			
Satellites launched 1998-2007	SCD-2 (1998), CBERS-1 (with China) (1999), CBERS-2 (2003)	Sunsat launched (private initiative)	11
Satellites manufactured 1998-2007	6	SumbandilaSat to be launched Sunsat manufactured by University of Stellenbosch	22
Satellite company revenue	US\$ 196m	Not available	US\$ 76m
Astronauts	1	One private self-funded	1
BUDGET			
Civil space budgets. NASA's annual budget is US\$17 billion.	US\$ 130m	Not available	US\$ 900m

All three states' space programmes operate in a specific political framework, and all have well-developed space facilities. Brazil is the top earner of revenue, whereas India's space budget is by far the largest. South Africa seems to be the 'space cadet' in this trilateral relationship. Its ground station experience dates back to the 1950s, but its Outer Space capabilities are very limited. So far, South Africa's only astronaut was a self-funded initiative, and its only satellite that has been launched was under the auspices of the University of Stellenbosch. The South African Government's SumbandilaSAT was expected to be launched from a Russian submarine in 2006, but has not been launched.

4. The growing global space competitiveness of the South – especially that of Brazil and India.

The USSR's launch of Sputnik in 1957 launched the space race. A different space race is emerging, which is increasingly featuring developing countries' space capabilities and ambitions. India, for example has announced its plans for a manned space program, and the EU is set to collaborate on a manned space effort with Russia. China has satellites circling the moon, and India and Russia are also working on lunar orbiters.

The US has been largely pushed out of the business of launching satellites for other nations. Russia, India and China have become the preferred choice. Their clients include, for example, Nigeria, Singapore, Brazil, Israel and South Africa. The European Space Agency (ESA) is cooperating with China on commercial ventures, which includes a rival to the U.S. space-based Global Positioning System (GPS). South Korea, Taiwan and Brazil have indicated their plans to further develop their space programs with the possibility of becoming low-cost satellite launchers. Furthermore, Brazil and South Korea are both developing fully home-grown rocket and satellite-making capacities (*Washington Post*, 9 July 2008).

However, fifty years later the US remains the dominant space power. Increasingly, the 'space club' opens up to developing countries. Recently, the 2008 Space Competitiveness Index, which ranks nine leading space countries according to 40 indicators of government spending, human expertise and the private sector, confirmed this. See table 3.

Table 3: The Space Competitiveness Index
 (The Economist, 7 April 2008: internet)

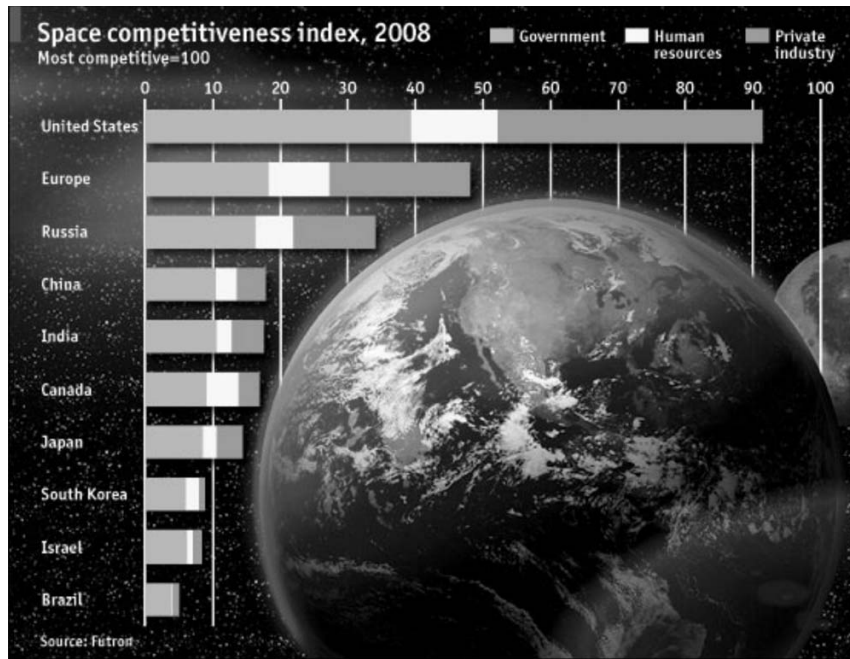
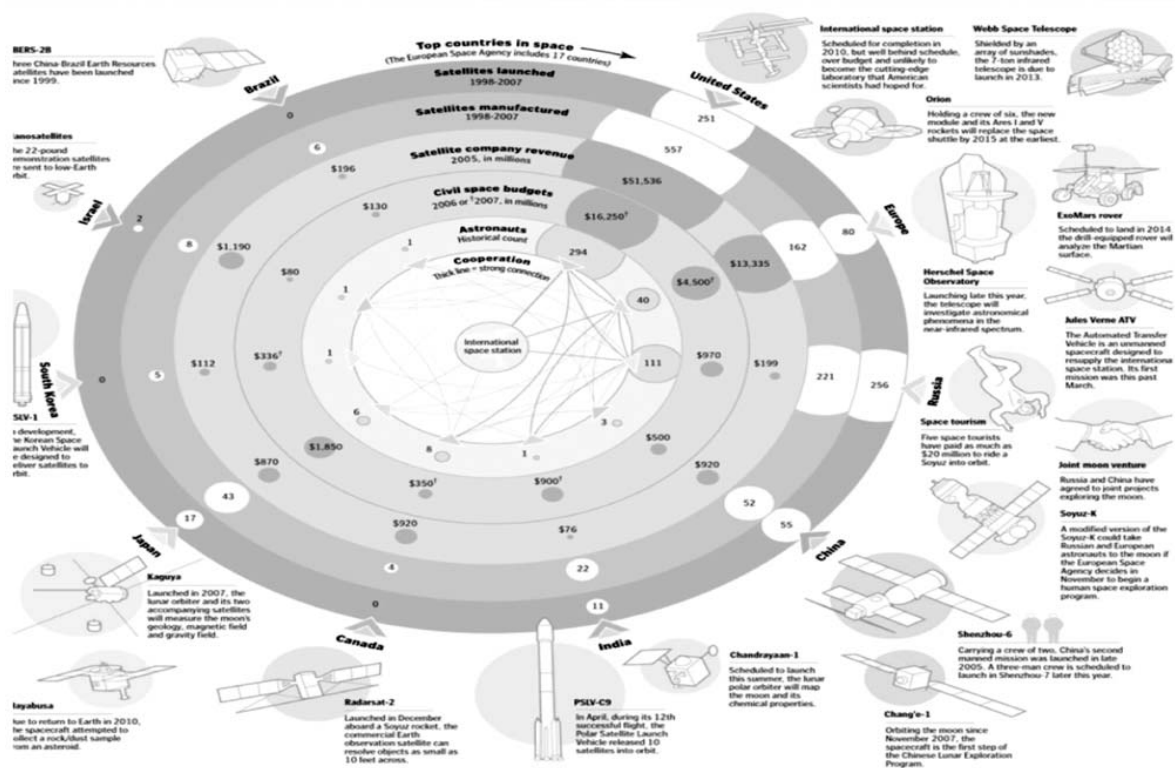


Diagramme 1 elaborates on the indices of these states' competitiveness.

Diagramme 1: Space Competitiveness Index 2008
 (The Washington Post, 9 July 2008: internet)



5. IBSA Member States have comparable development issues and human development indicators (HDI)

The HDI is a composite index which measures the average achievement in three dimensions of human development, including health and longevity, knowledge (including adult literacy rates and functional skills) and standard of living (income, access to water and sanitation and employment). The Human Poverty Index for developing countries (HPI-1) measures deprivations in the three dimensions of human development as captured in the HDI (UNDP, 2007: 357 & 367). Table 4 compares India, Brazil and South Africa in terms of a number of development issues.

Table 4: Development, economic and technology indicators

(UNDP, 2008: 240, 273-275, 286-287)

	Brazil	South Africa	India
Human development index (HDI) ranking	70 High	121 Medium human development	128 Medium human development
Human poverty index (HPI-1) for developing countries ranking	23	55	62
High-technology exports (% of manufactured goods)	12.8	6.6	4.9
Telephone mainlines per 1000 people	230	101	45
Cellular subscribers per 1000 people	462	724	82
Internet users per 1000 people	195	108	55
Patents granted to residents per 1m people (2000-05)	1	0	1
Research & Development (R & D) expenditure (% of GDP)	1	0.8	0.8
Researchers in R & D per 1m people	344	307	119

Of these, Brazil is the leading country in terms of HDI, as well as in exporting high-technology and its expenditure on R & D.

By 2007, intra IBSA trade amounts to approximately US\$6-7 billion. By 2008, it had reached over \$10-billion (Benton, 2008: internet). In future, IBSA also envisaged a super trilateral Free Trade Agreement between SACU, Mercosur and India (Matjila, 2007: internet). This can significantly improve the HDI in IBSA Member States.

Potential Benefits of Space Cooperation for Development for IBSA

International cooperation on space issues can be divided into three types, namely global cooperation, regional cooperation and bilateral cooperation. According to Noichim (2008: 10-12), when countries in the same geographical region cooperate in space issues and exploration they gain substantial benefits such as:

- Reducing natural resource competition such as the competition for the geosynchronous orbit, which is a limited resource. One satellite can serve all IBSA countries;
- Increasing space S & T expertise;
- Increasing economic development; and
- Building knowledge of space together and addressing matters of mutual concern.

IBSA Member States are already behind the targets set for achieving the UN's MDGs, which are:

1. Eradicate extreme poverty and hunger,
2. Achieve universal primary education,
3. Promote gender equality and empower women,
4. Reduce child mortality,
5. Improve maternal health
6. Combat HIV/AIDS, malaria and other diseases,
7. Ensure environmental sustainability, and
8. Develop a global partnership for development.

It may be argued that developing countries cannot be expected to engage themselves in Outer Space affairs. However, the post Cold War one focus on human security as opposed to state security makes their involvement imperative. Consecutive

meetings of the UN Committee on the Peaceful Uses of Outer Space (COPUOS) and the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) in 1999 have reiterated that the application of some types of space technology can enhance human security by, for example, reduce the risk of natural disasters, forecast crop yields, monitor environmental degradation and prevent the spread of infectious diseases (UNGA, 2007). For developing countries not in a position to participate in, develop and apply space technology, COPUOS system remains 'their preferred agent for deliberation and guidance for space affairs as well as a forum in which to express their political views (Sheehan, 2007: 130).' In this regard, Sheehan (2007: 130) states, COPUOS 'is the focus of their [developing countries'] hopes and aspirations, fears and concerns, with respect to space. It provides the major forum for space-related issues – new regulations, proposed restrictive regimes, and challenges to Western world policies, politics and business practices.'

States play a crucial role in the establishment and maintenance of sustainable human security and the application of these technologies can greatly enhance human security. Interactions between states and between states and commercial non-state space enterprises are intensely political and rivalry over natural, political and economic resources, access to it, the ability to sell or distribute it, as well as the ability to generate it is increasingly distinguishing powerful and weak states from each other. Governments often take responsibility for the political and budgetary aspects of a state's space programme, the maintenance of space facilities, and its international space law obligations. A government's space policy and national legislation gives, or not, assurances to the space industry and foreign investors in these domestic industries. Primarily, governments want to decide who gets what, where, when and how in their state and prefer to control key space technology assets, whereas commercial enterprises such as multinational corporations need profits, clients and markets.

It is argued that, if developing countries are to benefit from globalisation, they must develop new industrial-technological capabilities. With cheap labour and natural resources no longer sufficient for sustainable industrial development, developing countries have to reconsider their industrial policies (UNGA, 2007).

The application of space S & T can benefit IBSA Member States in the following areas:

1. Disaster management and humanitarian assistance

One area where space technologies are applied is disaster management and humanitarian emergencies. In 2007, floods, hurricanes, cyclones and droughts struck more frequently and it has become imperative for aid and humanitarian agencies to respond more frequently to climate-related disasters which, coupled with conflicts, annually displace millions of people (UN News, 10 December 2007).

2. Attracting foreign direct investment (FDI)

By 2003, revenues in excess of US\$ 91 billion were generated by the global satellite industry, and the consumption of satellite-based telecommunication and sensing services amounted to more than US\$1 trillion (Gallagher, 2005). The global satellite industry consists of four industry segments:

- Satellite services including satellite television and radio broadcasting, remote sensing, mobile data and voice, and broadband;
- Satellite manufacturing including component manufacturing;
- Launch industry such as launch services, launch vehicle manufacturing and component manufacturing; and
- Ground equipment such as control stations, mobile terminals, direct broadcast satellite dishes, handheld phones, digital audio radio service equipment and global positioning system (Satellite Industry Association, 2008: 3).

Table 5 refers to the number of space vehicles launched between 2002 and 2005. The global launch industry earns states such as Russia, the United States and France, which have launch facilities, major income annually. India and China, both regarded as

developing countries, are two of the major launching states, which attract FDI to these countries.

Table 5: Space vehicle launches (2002-2005)
(*The Economist*, 2007: 100)

Host country	2002	2003	2004	2005
Russia	23	19	17	21
United States	18	24	21	15
France	11	4	2	5
China	3	6	2	3
Japan	2	2	0	2
India	1	2	1	1
Israel	1	0	0	0
Sweden	0	0	1	1

By 2008, space is now a \$100 billion industry of global positioning systems, weather forecasting, mapping, and satellite TV and radio (*Washington Post*, 9 July. 2008: internet). Whereas the period between 1956 and 1990 was a Cold War quest for *military* dominance in space, the post Cold War era is a quest for the *commercial* dominance.

India, for example, established the Antrix Corporation Limited for the promotion and commercial exploration of products and services from the Indian Space Programme. Antrix markets Indian space products and services to global customers, including the global marketing of Indian Remote Sensing (IRS) Satellite Data Products. Antrix has also established International Ground Stations (IGS) and International Reseller Network to receive, process and market IRS data products. It also supplies of reliable satellite systems and sub-systems. Furthermore, it has successfully launched commercial satellites such as Kitsat (Korea), Tubsat (DLR - Germany), BIRD (DLR - Germany), PROBA (Verhaert, Belgium), Lapan Tubsat (Indonesia), Pehuensat-1 (Argentina) aboard the ISRO's Polar Satellite Launch Vehicle (PSLV) in addition to the dedicated launch of Agile (Italy). It also provide support services to international space agencies such as availing services include World Space, PANAMSAT, GE Americom, AFRISTAT, and SHINSAT; Finally, Antrix provides a telemedicine network in different states of India (Antrix Corporation, 2008: internet).

3. Enhancing international involvement, cooperation and coordination

In May 2007, fourteen international space agencies, including the US' NASA, Roskosmos, the European Space Agency, and the Chinese, Indian, Japanese and the South Korean agencies, released a document, *The Global Exploration Strategy: the Framework for Coordination*. The latter contains a shared vision of space exploration and provides for the establishment of a non-binding mechanism to enable space agencies to identify gap and overlaps in their space exploration initiatives, in order to development a voluntary, comprehensive and global approach to space exploration (*Engineering News*, 14 September 2007).

IBSA Member States participate in numerous multilateral space-related fora such as COPUOS and GEOSS. There is a need for greater international involvement, cooperation and coordination to strengthen the international regulatory regime in order to provide uninterrupted telecommunication services.

Brazil and Ukraine, for example, are in the process of establishing a bi-national commercial company, Alcântara Cyclone Space, which will be in charge of Brazil's Alcântara Launch Centre. The latter's proximity to the Equator makes it a privileged site for launches (COPUOS, 2007: 6). This will enable the launching for international clients.

4. Developing and promoting expertise

One of the policy objectives of the South African government is to develop Southern Africa as 'a hub for astronomy and space S&T' (GCIS, 2006: 480). The South African government's Astronomy Geographical Advantage Programme, for example, promotes high-technology investment in space science and has already resulted in the launching of the Southern African Large Telescope (SALT) in November 2005, in Sutherland. The single largest optical telescope in the southern hemisphere, SALT is an international project involving Germany, Poland, the US, New Zealand and the United Kingdom (GCIS, 2006: 480).

In February 2006, the CSIR signed a skills development agreement with Alcatel Alenia Space, a French satellite-systems company to develop space science expertise in South Africa 'with the ultimate aim of contributing to socio-economic progress both in South Africa and France (GCIS, 2006: 480).

5. Strengthening South-South cooperation and improving development

In September 1994, the Ministerial Conference on Space Applications for Development in Asia and the Pacific took place in Beijing with the objective of promoting regional coordination and cooperation in applications of space technology for sustainable development in the Asia-Pacific region. The Conference endorsed the Beijing Declaration on Space Technology Applications for Environmentally Sound and Sustainable Development in Asia and the Pacific. The Beijing Declaration inaugurated the Regional Space Applications Programme for Sustainable Development (RESAP), which aims to assist developing members and associate members of ESCAP in developing national capability, in addressing urgent environmental and development problems, and in integrating space technology into development planning for achieving sustainable development in the Asian and Pacific region (UNSTAS, 1998: internet).

In Brazil, China and their neighbouring countries have already benefited from the joint venture between China and Brazil, the China-Brazil Earth Resources Satellite (CBERS). Since 2004, it has distributed more than 320 000 images at no cost to these countries to be used in applications such as forest monitoring and agriculture support (COPUOS, 2007: 6).

6. Strengthening cooperation on trilateral and global security

Space S & T applications improve states' national security. The US is by far the most dependent state in this regard. The usefulness of the application of space S & T in security matters is clearly illustrated in 2006 when electronic jammers in Libya interfered with the Thuraya satellite telephone system, apparently because the Libyan government

wanted to make life difficult for smugglers in the Sahara desert (*The Economist*, 17 January 2008).

According to Hirst (2007: internet), the IBSA bloc has been particularly careful when addressing security issues. On the one side, no mention has been made of an agenda involving South America, South Asia or Southern Africa conflict-resolution, regional security and/or even humanitarian intervention; On the other, the use of the concept of human security which addresses social and environment disruptions as threats has been avoided. However, IBSA has produced statements on disarmament and nuclear non-proliferation issues. It also has improved intra IBSA defence co-operation. All these three countries are major consumers of defence and related equipment.

Following on IBSA agreement on aviation and maritime co-operation, a joint IBSA naval exercise took place in 2008 (Matjila, 2007: internet). It was the first time, according to the South African Minister of Foreign Affairs that 'the three nations are cementing the geopolitical alliance with military cooperation - off the coast of Cape Town, as part of the IBSA maritime camaraderie (Dlamini-Zuma in Benton, 2008: internet).' 'Such exercises raised the visibility of the IBSA alliance and as such were very important', according to the Brazilian Minister of Foreign Affairs, 'allowing the world to see how the three countries worked together and provided an evolving geopolitical identity (Amorim in Benton, 2008: internet).'

If, and when, greater IBSA cooperation spills over to the security field, it can result in coordinated initiatives such as peacekeeping and humanitarian intervention. Hirst (2007: internet) suggests that this can contribute to the promotion of the UN' *An agenda for peace* via IBSA's involvement in conflict prevention and post-conflict rehabilitation. Second, it can promote a collaborative agenda between the UN and regional bodies (OAS, AU, ASEAN, MERCOSUR). Hirst (2007: internet) states,

'IBSA states could also lead in defining a new model for multilateral security measures. Indeed, it has become crucial to avoid the worrying tendency for humanitarian intervention to replace development aid, as it is for trade negotiations to subordinate to security priorities, and for formal democratic rule to overlook the protection of human rights. But this kind of cooperation will

move more slowly. While the possibility of deepening inter-regional relations is one of IBSA main attributes this potential is accompanied by a subtle premise of non-interference in each other's regional affairs. Notwithstanding, inter-regionalism can be meaningful in a world where regions are to become relevant actors in the promotion of political and security stability.'

7. Countering the weaponisation and militarization of Outer Space

The Outer Space Treaty (1967) was referred to earlier. It forbids nuclear weapons and weapons of mass destruction in the Earth's orbit or on Celestial Bodies. States are forbidden to establish military stations or conduct any military manoeuvres on the Moon or other planetary objects. However, the Treaty does not address the transit of nuclear weapons through space, the placement of conventional weapons in space and the launch of nuclear weapons from Earth into space. The militarization and weaponisation of space is further complicated due to the fact that none of the UN space Treaties defines or clarifies the 'peaceful use of Outer Space.'

Satellites continue to be part of warfare operations. Satellites do not execute actual combat operations, but are used, for example, to guide ground forces or give detailed intelligence information on potential targets. Anti-satellite (ASAT) weapons and ballistic missiles, i.e. weapons intended to intercept missiles during their mid-course trajectory through space, remains the biggest concern. Hilpert (2007: internet) distinguishes between space weapons, 'Ballistic missiles are capable of intercepting intercontinental ballistic missiles (ICBMs) while they are on their trajectory through space while ASAT weapons or systems can potentially be deployed from Earth or be carried by a satellite and are directed against satellites.' The US, China and Russia have already successfully conducted an ASAT weapons tests, which has created large amounts of space debris.

For the US', modern warfare relies on satellites. Four-fifths of America's military data is transmitted through commercial satellites. A single Global Hawk unmanned surveillance aircraft flying over Afghanistan can use several times more satellite bandwidth than was used for the whole of the 1991 war against Iraq (*The Economist*, 17 January 2008).

Several initiatives attempt to address the weaponization of outer space. A comprehensive disarmament of space is advocated by the UN Conference on Disarmament (CD), which has been deadlocked since 1998 when the US opposed its plans to adopt a multilateral agreement on the Prevention of an Arms Race in Outer Space (PAROS). Hilpert (2008: internet) concludes, 'Without full support of the US, it will be difficult if not impossible for the international community to prevent the weaponization of space.' The EU is also currently formulating a code of conduct pertaining to this matter and, in February 2008, Russia and China jointly presented a treaty draft to ban weapons in space (Hilpert, 2008: internet).

Recommendations to IBSA to Improve Space Cooperation for Development

These recommendations include observation, prediction and outreach (Kasturirangan, 2007: 166). Some of the following recommendations are based on Martini (2002: 559-567), Zhao (2005: 213-219), Prasad (2005: 243-249), Marshall (2006: 7), Peter (2006: 100-109), Peter (2007: 97-107), dos Santos & Filho (2008: 6-9), COPUOS (2007: 6), COPUOS (2008a), Gratius (2008) and Schaffer (2008: 95-103). Figure 1 proposes a model for IBSA space cooperation.

To IBSA:

A significant driver of European integration was EU Member States' cooperation on space. For the EU, an integrated space policy resulted in developing certain types of applied space technology, joint sponsoring of research and development on space, shaping market conditions for the space industry and for security purposes (Sheehan, 2007: 87). IBSA can benefit from the European experience in this regard.

1. Establish an IBSA Working Group on Space;
2. Conduct a survey of all space-related research in all fields of natural, economic, legal and social sciences in IBSA countries;

3. Establish an IBSA Programme for Space Applications for Sustainable Development to formulate and implement policy instruments for cooperation and coordination on space applications at the national and regional levels;
4. Establishment an IBSA Working Group on International Space Law, which can contribute to the development of International Space Law on matters such as space debris, the militarization of space, the geostationary orbit, the definition of air space and Outer Space, and the role of developing countries;

The 73rd International Law Association (ILA) Conference will take place in Rio de Janeiro, Brazil in August 2008. The ILA's Space Law Committee will report on remote sensing, national space legislation, registration issues, space debris and the settlement of disputes, and the use of satellite data in national and international litigation and its value as evidence in court proceedings (COPUOS, 2008a: 12).

5. Establish additional South-South/inter-regional cooperation on the application of space S & T;
6. Establish commercial North-South partnerships;
7. Implement an integrated IBSA Earth observation system for sustainable environment and natural resource development;
8. Develop regional spatial data infrastructure and applications for sustainable development planning, and decision-making;
9. Implement space communications applications for human development and poverty alleviation;
10. Prepare an IBSA capability for emerging space technology development and applications;
11. Establish a joint space venture such as an IBSA Space Agency, similar to the European Space Agency (ESA), Asia-Pacific Space Cooperation Organisation (APSCO) and the Space Conference of the Americas (CEA). A similar organisation has been proposed for the Association of Southeast Asian Nations (ASEAN) and South America;

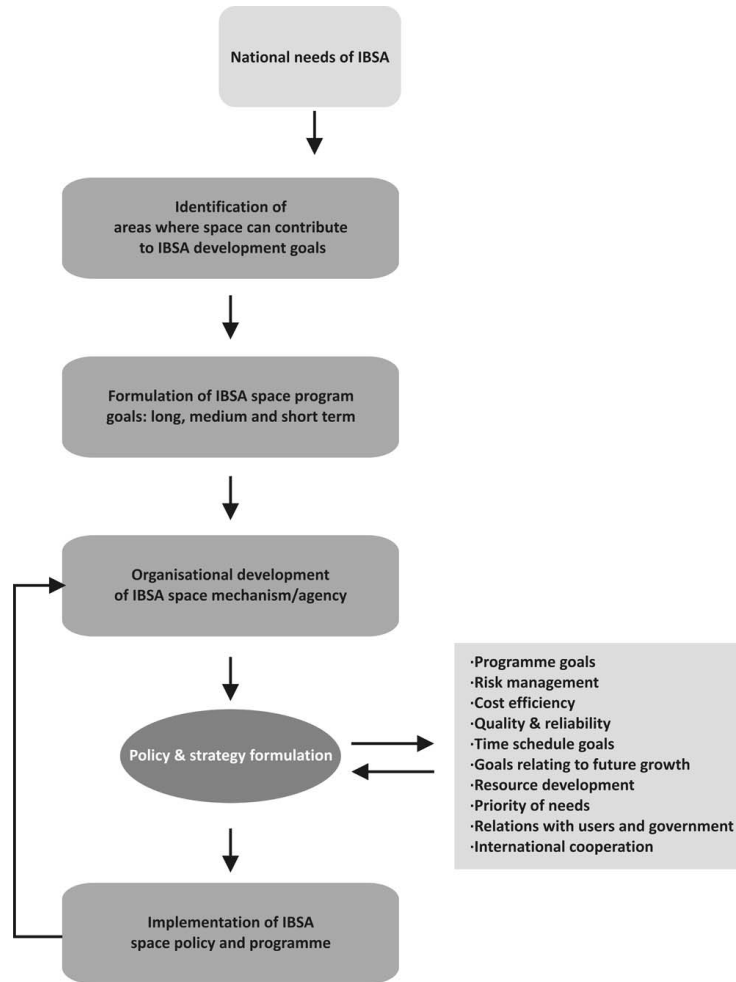
12. Consider the enlargement of IBSA to include Russia and China (BRICSA).
Both these countries are ranked highly in terms of Global Space Competitiveness;
13. Limit development assistance of any nature to non-IBSA Member States and channel that development funds to IBSA projects;
14. Formulate an IBSA space policy;
15. Adopt common IBSA policy positions for meetings such as COPUOS;
16. Sign a Memoranda of Understanding, Protocols or agreements on space cooperation and include issues such as dispute resolution mechanisms and liability, identify areas of cooperation and a model of cooperation as outline in figure 1. These agreements can be similar to the Asia-Pacific Multilateral Cooperation in Space Technology and Applications (AP-MCSTA);

Desirable criteria for a space collaboration mechanism must:

- Protect and advance the interests of IBSA;
 - Have the political backing of all IBSA Members States;
 - Have a clear scope but can allow Member States to retain some independence in key areas of national interest:
 - Protect strategic technologies and provide for technology transfers to other developing countries;
 - Be able to evolve over time;
 - Enable IBSA to engage with other multilateral space actors; and
 - Be formalised in terms of International Space Law.
17. Establish an IBSA commercial space company such as Alcantara Cyclone Space, which is soon to be established by Brazil and Ukraine, and the Indian Antrix Cooperation.
 18. Establish an IBSA Multi-tiered Micro-Satellite Constellation Architecture.

Figure 1: A model for IBSA cooperation on the use of space for development

(Adapted from Sridhara Murthi & Madhusudan, 2008: 508)



To IBSA Member States:

As Cox (2006: 39) states,

'The state may retreat with respect to some of its erstwhile functions, but it assumes new functions. Economic globalisation does not bring about the disappearance of the state any more than real socialism [his emphasis] brought about its 'withering away'. States make the framework for globalisation. But states can also become agencies for bringing the global economy under social control. The state remains a site of struggle for those who would challenge the social consequences of globalisation.'

1. Align national space policies and space legislation;
2. Establish research and exchange agreements between national space agencies;
3. Privatised certain sectors of national space industries;
4. Ratify, sign and comply with the UN Treaties on Outer Space, and other international space-related agreements;
5. Prioritise education and training in space sciences and technology development, application and management;
6. Develop space-related industries and service sectors to promote economic growth;
7. Establish Centres for Space Policy and Law Studies;
8. Improve the role of women in space affairs;
9. Invest in national launch industry;
10. Increase the manufacture micro-satellites;
11. Commercialise space and satellite manufacturing industries;
13. Increase satellite carriage of High Definition Television (HDTV);
14. Improve and offer consumer satellite applications, mobility and convergence; and
15. Align government policies to stimulate satellite manufacturing and launch industry trade.

To IBSA academics, civil society, non-governmental organisations:

1. Arrange parallel events with IBSA and national space-related conferences;
2. Establish an IBSA-wide organization to identify issues of common concern and priority areas of common interest, and develop mechanisms for regional cooperation;
3. Compile a database of IBSA experts; and
4. Host an IBSA Space Leadership Conference.

To IBSA Ministries of Foreign Affairs:

1. Prioritise IBSA;
2. Educate and train officials in multilateral space diplomacy;
3. Educate and train officials in space science and its application to development;
4. Establish an intra-governmental IBSA and space S & T Working Group;
5. Attend and participate in international space-related conferences, meetings and events; and
6. Establish directorates for space diplomacy.

Conclusion

What, then, are the significance and implications of IBSA? *First*, geo-economics and –politics matter. Not only does it consist of regionally-based middle powers, but, more importantly, these powers are developing countries. *Second*, presidential diplomacy matters. IBSA has predominantly been driven by the respective heads of state. *Third*, IBSA is highly symbolic and, as Hirst (2007: internet), asserts, ‘All three [IBSA Member States] carry strong identities within the international community: South Africa stands for the struggle against racism, India for the largest democracy and Brazil for the promotion of sustainable development.’ *Fourth*, IBSA countries expand the notion of trilateralism as a unique form of multilateralism. It also impacts on inter-regionalism (Hirst, 2007: internet).

Fifth, increased inter-governmental consultation and cooperation has deepened this south-south partnership. IBSA has also endorsed the idea that since the South is heterogeneous and asymmetric, different responsibilities and roles must be assumed. This explains IBSA’s decision in 2006 to create the US\$ 1.3 m IBSA Facility Fund (IFF) that is administered by the United Nations Development Programmes (UNDPs) South-South Unit in New York. In Africa, the IFF assists Guinea-Bissau in the development of agriculture and cattle farming, and in Latin-America is assists Haiti in the collection of solid waste as an instrument to reduce violence and conflicts in Carrefour Feuilles. In

Asia, the proposed project in Laos has not been implemented. A project of possible support to the Palestine National Authority is also under consideration (DFA, 2006: internet).

Six, global reform. IBSA Member States have placed special emphasis on the need to reform the UN framework and the current international financial architecture. In this regard, Hirst (2007: internet) observes, 'IBSA criticizes the distribution of power in specific agendas. Its aim is to push for the participation in the rule-making inner circle instead of accepting the condition of passive rule-takers. In this sense it intends to politicize but not ideologize world politics and economics. Furthermore the coalition has developed a niche diplomacy approach which addresses topics such as: the Palestine-Israeli peace process, the stability and unity of Iraq, a diplomatic solution for the Iranian nuclear program, the re-engagement in substantial work of the Conference on Disarmament.'

Inter-state relations operate in three institutional domains, namely international orders, international regimes and international organisations (Ruggie in Onuf, 2008: 226). Any multilateral institution has to depend on mutual principles reflecting a common social purpose (Onuf, 2008: 226). With regards to the first domain, IBSA operates in an international order dominated by industrialised countries of the North. With regards to international regimes, it can contribute to the consolidation of the international space regime – especially pertaining to human development, S & T transfer from the North-South and South-South, and the demilitarisation and de-weaponisation of space. As an international organisation, IBSA is emerging as an international actor. IBSA is an institution that can be defined as 'persistent and connected sets of rules, formal and informal, that prescribe behavioural roles, constrain activity and shape expectations (after Ruggie in Onuf, 2008: 226).'

Table 6 presented an outline of space S & T as a developmental tool. Table 5 includes an assessment in the context of IBSA.

Table 6: Space S & T cooperation as an instrument for development in IBSA
(Author’s own compilation)

SPACE S & T	FACILITATING FACTORS	MITIGATING FACTORS
State-led application of space science	IBSA Member States have: Signed all major UN Space Treaties Space S & T Access to space S & T Resources (space facilities etc) Membership of and participate in international organisations (such as the UN's COPUOS)	State control of space affairs Space for ideology and prestige Development limited (especially against the background of the TAI mentioned earlier)
Market-led application	Supply-demand: Everybody wants to have access to technology Less state intervention Export and increased international cooperation Development of expertise	Cost of access to space technology Government control Limited private sector Space for profit, not development Corruption vis-à-vis contracts
IBSA-led application of space S & T	Competitive space S & T advantage Political support Joint use of scarce resources Application for South-South development Technology transfer <ul style="list-style-type: none"> · Represent an affirmative voice of emerging countries · Represent a counterpoint to well-established space agencies such as NASA and ESA · Emphasize the value of space diplomacy as a tool for South-South cooperation · Bolster the importance of development cooperation on the agendas for international negotiation 	IBSA's institutional weakness: too much 'Dialogue' and too little done States' unwillingness to share strategic resources States' unwillingness to surrender sovereignty States' preference for <i>national</i> rather than <i>regional</i> agenda US, Russian and Chinese domination continues

In 2003, the Brasília Declaration instituted IBSA as a trilateral forum for articulating interests and positions based on common social interests (Hirst, 2007: internet). Its social purpose remain unchanged, but, with a focus on space cooperation, IBSA can transform this social purpose to collective intentionality, which provides social facts (IBSA and its components – India, Brazil and South Africa) with meaning and supplies it with a normative force (Onuf, 2008: 227), i.e. to achieve its developmental goals, and South-South cooperation and solidarity.

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7.

Modest Beginnings, Slowprogress: IBSA, Science,
Technology and Development



7.
Modest Beginnings, Slowprogress: IBSA, Science,
Technology and Development

Robert Keith Campbell*

Introduction

American economist Simon Kuznets (1901-1985), who won the Nobel Prize for Economics in 1971, called our current economic era the “modern economic epoch.” He defined an economic epoch as being determined and shaped by applications and ramifications of what he called an “epochal innovation”. For Kuznets, this modern economic epoch began in the latter half of the 18th Century, and the innovation that defines this epoch is, he argued, “the extended application of science to problems of economic production” (Kuznets, quoted by Cameron 1997: 197). However, the impact of science on economic development, although not decisive until much later, began as early as the 17th Century. Indeed, it was the English philosopher and scientist Sir Francis Bacon (1561-1626) who coined the aphorism “knowledge is power”. “[I]t was not until the second half of the nineteenth century, with the flowering of the chemical and electrical sciences, that scientific *theories* [italics in original] provided the foundations for new processes and new industries. It is indisputable, however, that as early as the late seventeenth century the *methods* [italics in original] of science – in particular, observation and experiment – were being applied (not always successfully) for utilitarian purposes” (Cameron 1997: 167).

The result of the application of science to develop new technologies, and the application of both science and these new technologies to industry, was an economic revolution. Entirely new industries were created, such as the aviation, chemical, electrical, electronic, mechanological, nuclear, optical, optronic, petrochemical, and space industries. The list of new products and materials developed runs into the hundreds, if

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not the thousands. And the application of science and technology to industry (and agriculture) has hugely increased the productivity of human labour. “Technological change, the major driving force behind nineteenth century industrialization, continued that role undiminished in the twentieth century. Indeed, it appears that the pace of change accelerated...” (Cameron 1997: 332). It is clear that this continues to be the case in the 21st Century¹.

IBSA Science and Technology: The Research Partnership Programme

IBSA was established in 2003, and in 2005 the three countries decided to initiate trilateral cooperation in science and technology (S&T) research and development (R&D). However, it should be noted that IBSA research projects and trilateral research projects between scientists in the three IBSA countries are not synonymous. Formal IBSA research projects, which are funded from an IBSA budget, have to be in specific, agreed, fields, of which there are currently six, although this number could soon increase to eight. Research in fields other than these six is not officially classified as IBSA research, and cannot be funded from the dedicated IBSA research fund (Scheffer 2008). Of course, such research will not be discouraged by any of the three countries – it will just have to be funded from other budgets.

The six agreed areas for trilateral S&T R&D are: biotechnology, tuberculosis (TB), HIV/AIDS, malaria, nanotechnology, and oceanography. Each country leads in two of these spheres. South Africa takes the lead with biotechnology and TB, Brazil with malaria and oceanography, and India with HIV/AIDS and nanotechnology (Mdaka 2008). The first step in developing cooperation in these fields was the holding of trilateral workshops, to bring researchers from the three countries together. (Such workshops, of course were and are not one-off affairs; workshops continue to be held.) Then, in 2007, “Expressions of Interest”, as they are designated in South Africa, were issued to scientists to propose research projects in the six agreed areas of research. The proposals had to be

¹This introductory section is taken from Campbell 2006.

submitted by trilateral teams – these teams having been formed as a result of the workshops – and had to be approved by the three countries. A total of 12 proposals were received (Scheffer 2008). Seven of these were selected for funding. Three are concerned with HIV/AIDS, two are in the sector of nanotechnology, one is about the application of nanotechnology in the fight against HIV/AIDS, malaria and cancer (so effectively covering three sectors at once), and one is in oceanography (Mdaka 2008).

The first of HIV/AIDS-related projects is: “The design, development, and review of open source software applications for integrated HIV/AIDS management”. The South African institution involved in is the University of Pretoria. The South African panel which reviewed the proposals noted that India was “well established” in the area of information and communications technology (ICT), and that the proposed research would “have an impact” on South Africa. Furthermore, the application “scored high” in terms of building capacity (that is, developing skills and expertise), but noted that electricity – or rather, the lack of it – would be a challenge in getting diagnostic tools to rural areas. Overall, the South African review panel rated the proposal “very good”. The second project is on “HIV/AIDS, biodiversity and natural resource dependence”, Rhodes University being the South African partner. The South African review panel also rated it as “very good”. The third HIV/AIDS project again has the University of Pretoria as the participating South African institution, and is entitled “The self-efficacy of care givers of children affected by HIV/AIDS: a cross-cultural study”. This was rated “very good” by the South African review panel, with the comments that there was a lot to be learnt from Brazil and India (Mdaka 2008).

Regarding nanotechnology, the first project on the list is “Synthesis and Polymerisation of shaped carbon material for use as photovoltaic devices”. The South African partner institution is the University of the Witwatersrand, and the South African review panel rated the proposal as “excellent”, noting that the proposed research “constitute[s] a new area of technology” and that the research “has high potential”, although the applicants “did not address the issue of purity” of the carbon material. The other project is “Electrospinning and characterization of chitin nano fibre mats” with two South African institutions involved – the Council for Scientific and Industrial Research (CSIR), which falls under South Africa’s Department (ministry) of Science and Technology (DST), and the Nelson Mandela Metropolitan University. Rated “very good”, the review

panel opined that the research had a lot of potential and would bring a number of (unspecified) benefits. Then there is “Nanotechnology for controlled release and targeted drug delivery for actives in the fight against malaria., cancer and HIV”. The South African partner institution is again the CSIR. Also rated “very good”, the project was praised by the review panel because it was a very good application, it involves many students, and the “researchers have a good profile”. On the other hand, the panel cautioned that it involved a “very large team without specific roles” (Mdaka 2008).

The sole oceanography project involves, in South Africa, the University of Cape Town and is concerned with an “Ocean network for remote sensing, climate variability and impacts on society”. Rated “excellent”, it was cited for having an approach and proposed activities that are “suitable to the goals”, while the proposed outcomes would “have great impact for the countries involved”, and yet “the budget is modest” (Mdaka 2008). Of the five proposals that were rejected, one was in the sphere of biotechnology, two in nanotechnology, one in HIV/AIDS, and one in Malaria. With one exception, they were rated from “fair” to “good”. The exception was the biotechnology proposal, which was rated “excellent” but, for unknown reasons, was not approved – the proposed topic was “Characterization, application and the role of plant growth regulators in seaweed growth and development” (Mdaka 2008). There has, however, been a major and successful biotechnology workshop, focused on biosafety (Scheffer 2008).

These projects were initiated in 2007 and will run until 2009 – a three year period. Each research team must submit a progress report every year. The total budget is contributed equally by all three countries, but it is not clear how big this budget is. It is known that this funding excludes finance for what the South African DST calls “mobility and networking funds” – that is, moneys to pay for South African researchers to travel overseas, or to bring overseas researchers to South Africa. Clearly, progress across the six research sectors is very uneven. Currently, there are no research projects in the areas of biotechnology, malaria, and TB. Nanotechnology is the sector displaying the greatest activity. For example, in November 2007 South Africa hosted a workshop on nanotechnology that was attended by six Brazilian and 12 Indian scientists and 40 South African scientists and students from both South African universities and universities of technology. This workshop resulted in an agreement to focus on specific areas and to

submit proposals for research in these areas, which are: advanced materials; health; water; and energy. For advanced materials, the proposed research would address sensor applications, such as gas sensors and biosensors, and India would be the lead country. Regarding health, the object would be the use of nanotechnology for drug delivery. For water, the aim would be to use nanotechnology for water purification. The lead country would be South Africa. Concerning energy, the focus is on solar energy and organic and inorganic photovoltaic systems (Mdaka 2008).

There are proposals to expand the list of research sectors to be funded by IBSA to eight, by adding “indigenous knowledge systems” and Antarctic research (Mdaka 2008). For South Africa, research into indigenous knowledge systems is quite new and really dates from the establishment of majority rule in 1994. Regarding Antarctic research, all three countries maintain permanent Antarctic bases, but only two – South Africa and Brazil – maintain dedicated Antarctic research and support ships and helicopters, and only Brazil routinely and regularly uses transport aircraft to fly supplies and personnel into and out of the frozen continent. Whether these two research fields are added to the official IBSA S&T R&D list or not, the three countries hope to issue a second request for proposals for research projects before the end of this year (Mdaka 2008). These would succeed the current projects, and presumably run from 2009 to 2011.

In 2006, the three countries also agreed, in principle, to create a \$3-million fund to finance the commercialization of discoveries made by IBSA research projects. Brazil has been given the responsibility of drawing up a Memorandum of Understanding (MoU) to govern how the fund will operate how projects will qualify for funding, over what period the fund will be built up, and so on. However, development of this MoU is taking longer than hoped, because of the complexities involved. The one basic principle that is that each country will contribute \$1-million to the fund. But, because the MoU has not yet emerged, none of the three countries has yet provided their quota to the fund (Mdaka 2008).

IBSA Civilian Research and Development Agencies

The fundamental reason for the slow development of S&T cooperation between the three countries is the complexity of the processes involved. There are multiple

departments and multiple agencies involved in all three countries. Each country must first achieve coordination between its own institutions before it can try and coordinate with institutions in the other two countries. In at least the case of South Africa, this domestic coordination has to take place at three levels within each department – the policy level, the programme level, and the project level. Furthermore, although all three countries' science and technology ministries have offices or divisions dedicated to international cooperation, none has a desk devoted solely to IBSA cooperation. This obviously slows progress in developing trilateral R&D. In addition, coordination of S&T at the political level has to go through the three countries' respective foreign ministries. Little wonder that a senior South African DST official has described IBSA R&D cooperation as "matrix management" – there are so many actors involved (Scheffer 2008).

Another major problem is the mutual ignorance between the three countries regarding their S&T structures and capabilities. Clearly, although there are always exceptions, in general S&T research in the 21st Century requires institutions and budgets. These institutions can be public sector or private sector. Public sector institutions can take the form of departments or agencies, on the one hand, or State-owned companies on the other. These State-owned companies could be entirely in the public sector, or have a minority shareholding from the private sector. Private sector institutions can take the form of non-profit organizations, or for-profit companies. The latter may be devoted to research and development (R&D), or engage in R&D to maintain their competitive advantage, and develop new products and/or services. Private sector companies might have minority shareholdings held by the State. In addition, there are universities and other tertiary institutions, which might be public sector, private sector, or autonomous (that is, they receive funding from the State, but the State cannot interfere in their internal affairs). The problem is that each of the three IBSA member countries have their own approaches to structuring and funding research, although India and South Africa do display some similarities because both are Commonwealth countries. Each country thus needs to become familiar with the others' R&D structure and capabilities. South Africa and India both designate their S&T ministries as Departments (DST in both cases), while Brazil uses the designation Ministry of Science and Technology (MCT is the Portuguese abbreviation).

The first point to grasp about South Africa's R&D base is that a large proportion of State R&D agencies do not fall under the country's DST. The DST has two primary divisions – the National Research Foundation (NRF) and the Technology Innovation Agency (TIA). Both are funding agencies. The NRF oversees and funds basic research in South Africa. The research agencies that fall under the NRF are the South African Astronomical Observatory, the Hartebeeshoek Radio Astronomy Observatory, the Hermanus Magnetic Observatory, the iThemba Laboratory for Accelerator Based Sciences, the CSIR, the South African Institute for Aquatic Biodiversity, and the Pretoria National Zoological Gardens. The NRF also funds basic science research at South African universities (Campbell 2006). All being well, this year will see a new research agency added to this list – the South African Space Agency. This will initially be formed from two existing elements. Firstly the Satellite Applications Centre, currently subordinated to the CSIR, and which specialises in satellite telemetry tracking, and control. Secondly, the Houwteq division of State-owned defence industrial group Denel, which was created in the 1980s to support a now long-abandoned military space programme and which, as a result, possesses the necessary infrastructure for the assembly, integration, and testing of satellites (Munsami 2008). The TIA is in the process of being established, and is expected to operational by the start of the next South African State financial year (1 April 2009). The TIA is intended to fund R&D that will result in the delivery of commercial products and services. Specifically, the new agency is meant to fund applied research and early- to mid-stage technology development. The intent is that the TIA will bridge the gap between innovative ideas and new research, on the one hand, and new products and industries, on the other – this gap is known in South Africa as the "innovation chasm". The TIA will incorporate a number of existing programmes. These are the Innovation Fund, the Biotechnology Regional Innovation Centres, and the Technology Stations Programme. The Innovation Fund is a smaller scale precursor to the TIA. There are four Biotechnology Centres – three are regional, and one national, but they operate in a coordinated manner. The Technology Stations Programme involves 12 Technology Stations and three Institutes for Advanced Tooling, spread around five universities and six so-called universities of technology (Campbell 2008).

However, outside the purview of the DST are the Agricultural Research Council which is subordinated to the National Department of Agriculture (there are also provincial agriculture departments); the Institute for Satellite and Software Applications, under the Department of Communications; the South African National Antarctic Programme, which falls under the Department of Environmental Affairs and Tourism; the Medical Research Council (the responsibility of the National Department of Health); there are three institutions – the Council for Geoscience, Mintek (a minerals and metals processing and product R&D organisation), and the South African Nuclear Energy Corporation (known, confusingly, as NECSA for short) – which are subordinated to the Department of Minerals and Energy; the Water Research Commission, under the Department of Water Affairs and Forestry; and PBMR (Proprietary) Limited, a predominantly State-owned (but US group Westinghouse is a minority shareholder) company that is developing the fourth-generation high-temperature gas-cooled Pebble Bed Modular Reactor nuclear technology, and which falls under the Department of Public Enterprises (Campbell 2006). Thus, South Africa has some 16 research agencies scattered across eight ministries. And universities fall under the National Department of Education.

To put this into an IBSA context, it is necessary to give brief (and incomplete) overviews of the Indian and Brazilian S&T bases.

India has the third largest scientific and technological manpower base in the world, and about 85% of the country's S&T funding comes directly or indirectly from the government. Like South Africa, India has a DST. And, again like South Africa, one of India's most important R&D agencies is a Council for Scientific and Industrial Research (also CSIR). However, where South Africa has R&D agencies, India has R&D ministries. Alongside the DST are the Departments of Scientific and Industrial Research (DSIR, not to be confused with the CSIR, which reports to it), Atomic Energy (DAE), Space (DoS), Biotechnology (DBT), and Ocean Development (DOD). In addition, the Indian Council of Agricultural Research falls under the Ministry (not Department) of Agriculture, while the Indian Council of Medical Research is under the Ministry of Health and Family Welfare. There is also a Ministry of Earth Sciences. In all, there are some 200 national laboratories and another 200 R&D institutes under central (national)

government departments. Furthermore, State governments also maintain R&D institutions (Embassy of India; DST, India).

Brazil, like India, is a federal republic and, like India, has both national and state level R&D institutions. Directly under the (federal) MCT are 19 research agencies, variously designated as institutes, centres, museums, and laboratories, as well as the National Observatory (which undertakes research in astronomy, geophysics, and time and frequency metrology). Two particularly prominent institutes are the National Institute for Amazonian Research (INPA), focused on research into, and the development of, Amazonia; and the National Institute of Space Research (INPE). The others are: the Mamirauá Sustainable Development Institute, the Institute of Pure and Applied Mathematics, the Emílio Goeldi Paraense Museum (Pará is one of the Brazilian states), the Museum of Astronomy and Related Sciences, the Brazilian Centre for Physics Research, the National Synchrotron Light Laboratory, the National Astrophysics Laboratory, the National Research and Education Network, the Mineral Technology Centre, the Renato Archer Information Technology Centre, the Brazilian Science and Technology Information Institute, the National Semi-Arid [region] Institute, the National Technology Institute, the Strategic Technologies for the North-East [region] Centre, the Advanced Electronics Technology Centre of Excellence, and the National Scientific Computation Laboratory. Not under the MCT, but associated with it, are five major agencies – the Studies and Projects Financer (FINEP: a funding agency, for both public- and private-sector research projects); the National Council for Scientific and Technological Development (CNPq); the Centre for Management and Strategic Studies; the National Nuclear Energy Commission (CNEN); and the Brazilian Space Agency (AEB).

There are also federal R&D organisations outside the MCT, including Embrapa. Embrapa – the Brazilian Company for Agricultural Research – falls under the Ministry of Agriculture (Embrapa; ARS). Brazil's predominantly State-owned oil corporation, Petrobras, also undertakes significant R&D, particularly in deep ocean oil and gas drilling, in which it is a world leader. The country's world-leading genetics research is predominantly generated by the S&T institutions of São Paulo state, mainly funded by the São Paulo State Foundation for the Promotion of Research (Fapesp).

IBSA Universities

Essential to national development is the provision of highly skilled men and women to undertake research (whether pure, applied, or commercial; or in the natural, medical, social or economic sciences), provide medical treatment and care, serve as engineers (in all branches of the discipline), staff high-technology businesses, educate others, fill the middle and upper ranks of the civil service, pursue the law, and staff the judiciary. The key source for such highly skilled people, as well as being extremely important R&D centres (especially, but not exclusively, in S&T), are the universities. Again, the IBSA countries know little about each others' university systems and their universities.

South Africa has 15 universities, plus six so-called universities of technology, which are really augmented technical colleges. India has 162 universities, plus 32 institutions deemed to be universities, and ten institutes of national importance (DST, India). Brazil has 131 universities and colleges (GEO). In South Africa, all universities and universities of technology are predominantly funded by the national government. In theory, they are autonomous, but, in practice, the degree of autonomy varies considerably. The best South African universities enjoy genuine autonomy and jealously guard it. In Brazil, universities can be federal, state, city or private. India has central (federal), state, and private universities. How good are they? A January 2008 ranking list for the top 100 BRIC (Brazil/Russia/India/China) universities is available but, of course, this omits South Africa. Still, on this list, Brazilian universities rank first, sixth, seventh, tenth, 12th, 18th, 19th, 21st, 22nd, 28th, 30th, 36th, 42nd, 45th, 48th, 53rd, 58th, 64th, 68th, 69th, 71st, 76th, 80th, 92nd, 97th, 98th, and 100th. Indian universities rank 20th, 24th, 44th, 47th, and 51st. The top Brazilian institution is the Universidade de São Paulo (USP – a city university) and the top Indian being the Indian Institute of Technology, Bombay (Webometrics). Another list is the Times Higher Education QS World University Rankings 2007 – Top 400 Universities. On this, USP appears as the highest ranking IBSA university, at 175th (equal with the University of Massachusetts, Amherst, in the USA), followed by the University of Campinas (Brazil – 177th), University of Cape Town (South Africa – 200th), the University of Delhi (India – 254th), the Indian Institute of Technology, Bombay (India – 269th), the University of the Witwatersrand (South Africa – 282nd), the Indian

Institute of Technology, Delhi (India – 307th), and the Federal University of Rio de Janeiro (Brazil – 338th) (QS Top Universities).

Of course, these rankings must be treated with some caution. The first list doesn't even rank the University of Delhi, a institution which the second list regards as the best university in India. But the key point, which remains valid, is that all three IBSA countries have world-class universities. This provides an excellent basis for both promoting national development and developing meaningful and mutually beneficial cooperation and collaboration between IBSA universities, especially the leading ones.

Conclusion

This paper has ignored private sector R&D in the IBSA countries not because it does not exist – it most certainly does – but because there is no sign of R&D cooperation between companies in the three countries. Defence technology cooperation is certainly developing between the IBSA countries, but currently on a bilateral and not a trilateral basis.

S&T R&D is essential for economic development. For any country seeking to be a serious factor in world affairs, developing a successful domestic S&T R&D base, instead of just adopting other countries' innovations and advances, is essential (see Campbell 2006). With no country possessing unlimited resources, international cooperation is an established and successful means of maximising investment, research outcomes, and mutual benefit. Many examples can be cited – the European Space Agency, the International Space Station, the European Union research Framework Programmes (which now extend far beyond Europe), and ITER (the international programme for nuclear fusion), are just a few. In comparison to such examples, current formal IBSA S&T cooperation is both very modest and rather slow. As things now stand, this formal IBSA programme will not contribute much directly to the development of the three States. But that is not the objective. The key point about the current IBSA S&T programme is to make scientists and technologists in the three countries aware of each other, of each other's institutions, frameworks, policies, programmes, and capabilities, and thus open the door to trilateral (and bilateral)

cooperation on projects that will develop outside the current limited official framework. It is these trilateral cooperative projects, funded from other budgets, which are, over time, likely to bring most developmental benefits to the three IBSA countries.

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8.

The Geopolitics of IBSA: The South African Dimension



8.

The Geopolitics of IBSA: The South African Dimension

Francis Kornegay

This paper continues a discourse undertaken last year by the Centre for Policy Studies (CPS) in Johannesburg and the Friedrich Ebert Stiftung (FES) to examine the foreign policies of India, Brazil and South Africa within the context of their IBSA trilateral relationship – and independent of that relationship. While it was found that the three countries had aligned themselves as democratic ‘like-minded’ regional powers, sharing common objectives in altering North-South power relations in the global economy and in terms of global governance, their foreign policies reflect different trajectories. Each country’s diplomacy reflects an attempt to adapt to the dynamics of asymmetric globalisation characterised by globally networked interdependencies between states within a set of shifting power relationships wherein existing imbalances between developed and developing countries have been offset by an ongoing “Asian ascendancy” reflected in the rising power status of China and India. The broader geopolitical terrain impinging on the trilateral relationship and the foreign policy identities of India, Brazil and South Africa comes into sharper relief in their inclusion with China and Mexico as the invited guests of the G8 at their annual summits and the emergence out of this of a ‘G5’. While the three have clubbed together with China and Mexico into a G5, their individual and collective IBSA relationship vis-à-vis the G5 and the G8 remains ambivalent. Meanwhile, the IBSA-G8 relationship is only inadequately suggestive of the new shape of things to come in the unfolding rearranging of power relationships in the global system. For this paper, South Africa is the focus of a geopolitical analysis of IBSA within this wider global context. Nevertheless, it is instructive to approach the South African dimension from a broader updated look at how the three countries comparatively relate to the changing global political dynamics in determining whether or not a genuinely trilateral IBSA identity can emerge out of their G3 relationship.

