

INDO – US CIVIL NUCLEAR COOPERATION – IMPLICATIONS AND OPTIONS

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Synopsis

The end of the Cold War saw a recasting of relations between nations. The bilateral relations between U.S. and India have swung from one extreme to the other— from initial euphoria in the 1950s to prolonged estrangement in the later decades due to Cold War complexities and India's nuclear tests and finally to the current phase of engagement.

Transformation of the relationship from estrangement to an upswing saw the U.S. administration reverse its earlier stand where India was treated as a nuclear pariah. In a bold decision the U.S. offered cooperation in civilian nuclear as well as other areas of mutual interest, culminating in a joint U.S. - India statement issued during the visit of Indian prime minister Dr. Manmohan Singh to Washington on 18 July 2005. Embedded in the statement, were three major dialogue areas : strategic including global issues and defence; economic including trade, finance, commerce; and environment and energy.

Civil nuclear technology has been identified as a key area of co-operation, aimed at ending the three decade long isolation of India by throwing open the latest civil nuclear technology, material and R&D and in the process facilitating accelerated production of nuclear energy, thus reducing the future consumption of hydrocarbons by India.

A further joint statement was issued during the U.S. President's visit to New Delhi on 2 March 2006 after accepting India's separation plan.

One of the most important steps in the civil nuclear co-operation (CNC) was the identification and separation of civil facilities from those dedicated to the strategic programme. These civilian facilities are to be placed under IAEA safeguards and become eligible for fuel supply.

Opposing viewpoints expressed by professionals and political leaderships of various hues feel that the CNC will lead to an erosion in India's nuclear sovereignty in strategic nuclear autonomy. Additionally, that it is a U.S. ploy to use India as a countervailing force against a rising China. Foreign policy pressures are bound to confront India in the future as India will be increasingly dependent on the U.S. However, the CNC should be pursued as it ends the nuclear apartheid against India ; accords de facto nuclear weapons state status to India despite some reservations; ensures long term energy security by harnessing the potential of nuclear energy.

The U.S. being the sole superpower—with clear lead in economy, military and technology—now as well as for the next several decades, India would need U.S. assistance in its economy, advanced technology and defence sector in order to attain its rightful place in the emerging global order. The U.S. also needs India as a reliable partner in this region. The strategic partnership between the two is therefore mutually beneficial, even though complete agreement is not feasible and a balancing act needs to be done between competing considerations.

CHAPTER I INTRODUCTION

Background

On 18 Jul 2005, President George Bush of the USA and Dr. Manmohan Singh, the Prime Minister of India signed a joint agreement¹ in Washington, delineating the broad framework for civil nuclear cooperation, the eventual realisation of which would effectively end India's isolation in the world of nuclear technology for over three decades. This was further cemented by an agreement between the two leaders on 02 Mar 06, in New Delhi,² after acceptance of India's separation plan for nuclear reactors for civil and military applications³. These agreements triggered an intense nation-wide debate on the need, propriety and usefulness of the same and their likely fall-out on the country's strategic options, in addition to impact on other policy domain.

The process of adjustment in the existing US legislation to facilitate such an agreement is currently on. India on her part has commenced negotiation with the International Atomic Energy Agency (IAEA) for working out the safeguards framework to be applied to identified 'civilian' reactors. Simultaneously, members of the Nuclear Suppliers Group are being approached, both by the US and India,

for an eventual agreement for supply of nuclear fuel, equipment and related technology to India.

In order to examine the likely implications of this agreement, it is important to trace the history of nuclear development efforts in our country, India's isolation in the world soon after the 'peaceful nuclear explosion' in 1974 - followed up in 1998 - and resultant impact of sanctions and technology denial, India's Nuclear Doctrine, need for 'Credible Minimum Deterrence' for national security and the chequered history of Indo-US relationship spanning over five decades. Important factors impinging on this deal are manifold, including the compulsions and the rationale of the US in agreeing to this India-specific deal, likely restrictions in the form of 'capping' of nuclear inventory of India and further moratorium on nuclear testing, cost of separation of 'civil' and 'military' nuclear installations, impediments in research due to placement of nuclear installations under IAEA safeguards, implications of safeguards in perpetuity, collateral benefits, if any, arising out of the agreement including access to high technology as well as permanency of nuclear fuel supply, impact on accelerated nuclear energy generation programme, the progress made so far and so on. The issues 'whether we could do without this agreement or redefine the contours of agreement in national interest so as not to allow capping of future weaponisation programme, assurance of supplies of nuclear fuel in the light of experience despite written agreement with US in the past, whether nuclear energy could possibly meet our future energy needs also need to be examined.

No bilateral agreement is without certain implications. This paper examines the issues highlighted above at some length in the backdrop of divergent views and differing perceptions. Should this cooperation be viewed only from the perspective of India's unfettered strategic options, at the exclusion of all other factors or need be evaluated in a broader framework of globalised economy, rapid emergence of new world order and the race against time to take the country to a sustained higher growth trajectory with liberal infusion of capital, as well as technology? Is it going to be a defining moment in the bilateral relationship between India and the US? Answers vary sharply. However, the long-term implications could be many.

Aim

The aim of this study is to examine the proposed civil nuclear cooperation (CNC), triggered by the Joint Statements of the Prime Minister Dr. Manmohan Singh of India and President George W Bush of the USA in Washington D. C.

on 18 Jul 2005, then followed by another one in New Delhi on 02 Mar 2006 and Separation Plan of India's nuclear facilities. In the light of joint statements, as well as subsequent developments, the study aims to analyse the impact on India's strategic programme, energy security, other technology cooperation and issues arising out of strategic partnership between the two countries - both long-term and short-term, and determine available options.

Hypothesis

The proposed CNC, though proclaimed as energy-centric, has strong overtones of arms control measures and subtle proclivity of influencing India's international relations. The agreement would effectively end India's isolation in the nuclear commerce and expectedly accelerate nuclear energy production. Though not aimed at capping India's strategic programme in the near future, it has, nevertheless, the potentials of increasing the cost of such a programme, should there be a need to augment fissile material beyond currently planned level or undertake further nuclear test for qualitative improvement in the future nuclear weapon design.

Notwithstanding the identified potential infirmities, however, the CNC-viewed in totality, including gains arising out of strategic partnership - if executed strictly in accordance with the Joint Statement by India and the US on 18 Jul 2005 and Separation Plan of March 2006 - is in the long-term interest of India.

Scope

The scope of this study is limited to Indian perspective, without taking US concerns into account, and is primarily based on information available in public domain till 31 Aug 2006, due to study deadline. These essentially include two joint statements, separation plan, statement of the Prime Minister in the parliament and information available in electronic and print media, in addition to some earlier publications on the related subject.

In the absence of availability of authentic details in respect of reliability of the nuclear test by India, whether further tests are needed, volume of fissile material stockpile and size of nuclear weapon arsenal, estimates available in public domain have been relied upon for the purpose of study.

With a view to broad-base the understanding of implications of this agreement involving nuclear technology and associated national policy, it has been considered essential to trace the history of nuclear development efforts in our country, impact of sanctions and technology denial, India's Nuclear Doctrine, need for 'Credible

Minimum Deterrence' in the present context and the chequered history of Indo-US relationship spanning over five decades.

The scope includes evaluation of viewpoints - for and against the CNC - and finding a balance between the two, as well as a peep into the future.

Structure of Study

This study is structured into seven chapters and five Appendices, as detailed below :

- (a) Chapter I lays the basic foundation of study and draws its boundary.
- (b) Chapter II briefly traces the history of India's quest for nuclear energy since independence and presents current status of three-phase nuclear power programme, nuclear facilities and progress made with indigenous efforts despite stifling technology denial regime.
- (c) Chapter III highlights broad contours of India's nuclear policy and strategic options, including its nuclear doctrine.
- (d) Chapter IV deals with details of the proposed CNC and the current status (as on 31 Aug 2006) of its essential building blocks.
- (e) Chapter V analyses validity of arguments for and against the CNC, implications thereof.
- (f) Chapter VI attempts crystal gazing, going beyond the nuclear energy and strategic programme in respect of nuclear weapons, and into the realm of other areas of cooperation as a result of strategic partnership with the US.
- (g) Chapter VII presents conclusion of the study and offers certain policy recommendations.

CHAPTER II **INDIA'S QUEST FOR NUCLEAR ENERGY**

Historical Background

The end of World War II marked a revolution in world affairs - the recasting of nations and relations between nations in the Cold-War era as well as the emergence of nuclear technology that had phenomenal destructive power. This technology also had the immense potential for myriad peaceful applications, including generation of electricity.

India's indigenous efforts in nuclear science and technology were established remarkably early. The first step was taken by Dr. Homi Jehangir Bhabha in March 1944 when he submitted a proposal to the Sir Dorab Tata Trust to found a nuclear research institute, leading to the creation of the Tata Institute of Fundamental Research (TIFR) on 19 Dec 1945 with Bhabha as its first Director⁴.

In 1947, when India emerged as a free country, among the earliest initiatives taken by Pt. Jawaharlal Nehru, the first prime minister, was the development of science and inculcation of the scientific spirit. Political leadership had the foresight to recognise the tremendous potential of nuclear technology for economic development. This thinking was reflected in the enactment of the Atomic Energy Act of 1948. Since then, rapid progress has been made in the field of nuclear energy, by way of substantial funding support in the nuclear R & D, setting up of Atomic Energy Commission and Atomic Energy Establishment, Trombay – later rechristened as Bhabha Atomic Research Centre (BARC) - as well as creation of Department of Atomic Energy (DAE) with Dr. Bhabha as Secretary⁵.

Nuclear Fuel Management

To ensure self-sufficiency in nuclear fuel and long-term sustenance of electricity generation programme, Atomic Minerals Directorate was set up in 1950 to survey, prospecting and exploration of atomic materials; and Indian Rare Earths Limited to mine and process mineral sands containing thorium and rare earths minerals. Two naturally occurring elements, Uranium and Thorium, have good potential to be utilised as fuel in nuclear power reactors. The estimated natural deposits of natural Uranium is 86,000 tonnes and Thorium about 3,60,000 tonnes in the country.⁶

Fast depleting uranium mines at Jaduguda and inexplicable local opposition in exploitation of the potential mining sites in Andhra Pradesh & North East, have put pressure on fuel availability. Recently, prospects of additional uranium resources at Rajasthan, Meghalaya, Haryana, Chhattisgarh, Andhra Pradesh, Karnataka and Madhya Pradesh have brightened. Due to limited availability of uranium, India has always placed strong emphasis on the development of breeder reactor fuel cycles. This necessitated design / development / acquisition of equipment for plutonium reprocessing / separation facility for optimum utilisation of thorium (a potential fuel for breeder reactors).⁷

Fuel Cycle. Dedicated in-house R&D initiative in nuclear fuel management led to mastery of the entire fuel cycle – both front-end and back-end. Front-end

involves mining of uranium, segregation, chemical purification, conversion to appropriate form and fuel rod fabrication. Back-end of the nuclear fuel cycle involves temporary / eventual permanent storage of spent fuel rods, reprocessing to separate uranium and plutonium from the spent fuel for recycling them as fresh fuel for nuclear reactor, safe disposal of radioactive waste after proper treatment. However, environmentally safe and cost-effective waste management, requiring permanent storage of radioactive waste for indefinite period would continue to be a major challenge for the nuclear world⁸,

India is no exception

Energy Situation.⁹ An adequate and uninterrupted power generation is an intrinsic essentiality for the overall development of any nation. In quantitative terms, the per capita consumption of electric energy is regarded as an indicative parameter of the socio-economic growth. Per capita power consumption in India is around 400 Kwh / yr, as against the world average consumption of 2400 Kwh/ yr. In addition, adequate availability of power is a prerequisite for fuelling planned economic growth, with sustained 8-10 per cent growth in the GDP.

The major contribution to India's power production programme comes from thermal power stations - 66 per cent coal based and 17 per cent oil / gas based. About 14 per cent is from hydro-electric and 3 per cent from nuclear plants. Indigenous coal availability, as against requirement, is steadily declining - 93 per cent (316 out of 338 million tonnes in 2005-06) to 91.5 per cent (334 / 365 mt – in 2006-07). With coal production growth rate averaging little over 4 per cent during 2001-2005 - far below the rate of growth in foreseeable energy requirement - the future does not appear very bright. Moreover, the high sulphur and ash content in Indian coal creates environmental problems.

Similarly, demand for gas outstrips supply. In recent years, the actual supply has fallen substantially short of requirements, resulting in a huge loss of power generation. The gas-based stations (with dual fuel facility) sometimes have to resort to liquid fuel like Naphtha, resulting in very high cost of generation. Fuel price, constituting about 60 per cent of the total cost of thermal power generation, is a critical determinant of long-term sustainability of a thermal plant. The government is encouraging the use of hydel and wind energy sources, which do not rely on fossil fuels and avoid carbon emissions. Hydel power generation, however, depends on vagaries of the monsoon, which is often erratic.

Available conventional resources are therefore, far from being adequate to achieve any ambitious target in terms of power generation. By their very nature, while other non-conventional sources are suitable for small decentralized applications, nuclear power stations are suitable for large-scale centralised generation. Nuclear power as a complementary option, therefore, cannot be overlooked.

Strategy for Nuclear Energy¹⁰

The Nuclear Power Corporation of India Ltd. (NPCIL), a public sector undertaking of DAE, is responsible for the design, construction and operation of nuclear power reactors. As of now, 16 reactors (2 BWRs and 14 PHWRs), with a total installed capacity of 3900 MWe are operational.

Three Stage Programme

The mainstay of India's three-stage nuclear power programme is the first stage PHWRs, which use natural uranium (containing 0.7 per cent fissionable isotope U-235 and the rest U-238) as fuel and heavy water as both moderator and coolant, the technology for which has been indigenously developed.

A 10,000 MWe base in PHWRs is expected to sustain a chain of Fast Breeder Reactors (FBRs) in the second stage, which envisages the use of Pu-239 obtained from the first stage reactor operation, as the fuel core. A blanket of U-238 surrounding the fuel core will undergo nuclear transmutation to produce fresh Pu-239 as more and more Pu-239 is consumed during the operation. Besides a blanket of Th-232 around the FBR core also undergoes neutron capture reactions leading to the formation of U-233, thus facilitating conversion of the abundant supply of Th-232 that India has, into U-233. FBRs can increase uranium utilisation by about sixty times of what is possible with PHWRs. The currently known Indian thorium reserves amount to 358,000 GWe-yr of electrical energy and can easily meet the energy requirements during the next century and beyond.

U-233 will fuel the third stage consisting of the indigenously designed Advanced Heavy Water Reactors (AHWRs). Based entirely on a self-sustaining U-233 and Th-232 cycle, the third stage would release the programme completely from uranium economy eventually.

Power Generation

According to current projections, India needs to step up electricity generation ten-fold in the next four to five decades i.e. the total installed capacity of 1,344

GWe by 2050. By 2020, India's installed electricity generation capacity will be 400 GWe and of this, nuclear power will account for 20 GWe – the target has been recently revised to 40 GWe by 2030. With the PHWR programme well matured and adequate expertise developed in FBR technology, the second stage of programme has been initiated, with the commencement of construction of the 500 MWe Prototype FBR in 2005.¹¹

The in-principle approval of the Government has been accorded in respect of sites for four new power stations at Kudankulam, Kakrapar, Rawatbhata and Jaitapur (Maharashtra), totalling a capacity of 6800 MWe. NPCIL is also developing a 700 MWe pressurised heavy water reactor. To make up the projected 20 GWe by 2020, 4 x 500 MWe FBRs, 10 * 540 MWe PHWRs and six 1,000 MWe LWRs of the Koodankulam kind, totalling 13,400 MWe, have been planned. However, the continued availability of fuel – both enriched uranium for Tarapur 1 & 2 and natural uranium for PHWRs – is a major concern that needs to be addressed by not only increasing indigenous production but also resorting to import¹².

Despite setbacks in achieving the target during the first three decades – only 2700 MWe as against targeted 10000 MWe by 1980 - the nuclear power programme in the country has matured and reached a critical stage. Timely availability of nuclear fuel, adequate funding provision for in-house fabrication / outright purchase of additional reactors and sustained support for the programme may turn the tide and put India on a fast-track for accelerated generation programme, way beyond the levels envisaged as of now.

CHAPTER III

NUCLEAR POLICY AND STRATEGIC OPTIONS

Historical Perspective

In the aftermath of independence from colonial rule, preceded by the prolonged and often bitter freedom struggle, a certain degree of apprehension in the matter of dependence on anything foreign, was natural. The national leadership of independent India, therefore, took the conscious decision to opt for self-reliance. While rejecting the Cold War paradigm, as well as alignment with either power bloc, India chose the more difficult path of non-alignment.

This inevitably required building of national strength through own resources and laying foundation of technology infrastructure and research centres to master the “frontiers of knowledge,” as eloquently put by Dr. Homi Jehangir Bhabha¹³.

In any case, there was hardly any help available from any quarter, without strings attached. Utilising own meagre resources and building the infrastructure brick-by-brick from the ruins of the blatantly exploitative colonial regime, was more of necessity than choice.

Apart from a crippling economic situation, the country had to contend with the emerging threats to national security from perennially hostile and belligerent neighbours. Development of nuclear technology had, by then, already transformed the nature of global security. Despite taking an early and comprehensive initiative in nuclear technology, India considered nuclear weapons as weapons of mass destruction. A nuclear weapon-free-world would, therefore, enhance not only India's security but also the security of all nations. This was the bedrock of India's principled nuclear policy, albeit with clear recognition of the immense potential of nuclear technology for energy.

Guided by these higher considerations, India stridently advocated not only the need for a halt to the increasingly fast and furious nuclear arms race between the two superpowers, but also universal and non-discriminatory disarmament. While subscribing to the principle of equal and legitimate security interests of nations as a sovereign right, India did not favour the nuclear option in the early years. In 1965, along with a small group of non-aligned countries, India put forward the idea of an international non-proliferation agreement under which the nuclear weapons states would give up their arsenals provided other countries refrained from developing or acquiring such weapons. This balance of rights and obligations was absent when the Nuclear Non-Proliferation Treaty (NPT) emerged in 1968. On the contrary, the NPT sought to perpetuate nuclear haves and have-nots through arbitrary and discriminatory cut off limits.¹⁴

Threat to National Security

The 1960s also saw the deepening of national security concerns, with conflicts with China and Pakistan. With China going nuclear in 1964¹⁵, India looked for security arrangements from major nuclear powers of the world. Regrettably no such commitment was forthcoming¹⁶. The threatening and coercive presence of the nuclear-armed US Fleet in the Bay of Bengal during the 1971 war did not help the matter either. Under these circumstances, India decided to not only stay out of NPT but also chose to demonstrate its nuclear capability through a 'peaceful nuclear explosion' in 1974, without however undertaking a weaponisation programme.

In the following two and a half decades, technology went on a roller coaster ride. Rapid accumulation of more lethal versions of nuclear weapons and development of faster and deadlier delivery systems by all nuclear-weapon states in general and neighbouring China in particular, with the latter providing nuclear and missile technology covertly to Pakistan; the break-up of USSR in 1991 leading to the sole supremacy of the US; blatant arm-twisting and unprovoked use of force by the western powers to intimidate and decimate non-nuclear states – Yugoslavia and Iraq; frequent forays of nuclear-armed warships, submarines and aircraft carriers of US, NATO and Australian forces in the Indian Ocean, the Arabian Sea and the Persian Gulf; and phenomenal increase in externally aided and abetted terrorism, militancy and proxy war through hired mercenaries forced India to re-visit the nuclear option¹⁷.

Need for Overt Nuclearisation

The principal factors that drove overt nuclearisation in 1998 were the threat to the viability of the nuclear option, the ‘entry into force’ of the Comprehensive Test Ban Treaty (CTBT), the destabilization wrought by the Pakistani introduction of weapons delivery systems, and the continuing disputes with China. Increased nuclear proliferation, declining prospects of nuclear disarmament and changes in the strategic doctrines of the major powers were additional factors.¹⁸

India chose to exercise, albeit reluctantly its nuclear option as a predominantly defensive measure. A series of five tests – a thermonuclear device, a fission one and three sub kiloton devices - were carried out after a gap of 24 years i.e. on 11 and 13 May 1998 to revalidate earlier test data and create a database useful for designing nuclear weapons of different yields for different applications and for different delivery systems¹⁹.

Nuclear Policy

In the backdrop of the failure in moving towards a nuclear weapon free world, despite India’s fervent efforts and several resolutions of the UN General Assembly against nuclear monopoly, as well as the inability of the nuclear nations to find any solution to growing proliferation of nuclear WMD, India’s exercise of the nuclear option was essentially to address the deteriorating national security environment, particularly in the light of a hostile nuclear-armed neighbourhood.

India, a proclaimed Nuclear Weapon State - unlike Israel who has amassed nuclear weapons with suspected US help but does not declare it- has indigenously

developed technology, for building a modest arsenal of nuclear weapons. The nuclear policy has been marked by restraint and openness that is rooted in a strongly defensive posture - without falling foul of any international agreements at any point of time. The 'Nuclear Doctrine' adopted subsequently, declares India's commitment not to use these weapons to commit aggression or to mount threats against any country and to ensure that in turn, India is also not subjected to nuclear threats or coercion. The doctrine asserts India's right to possess nuclear weapons, declares a policy of "no-first-use" together-with credible "minimum" nuclear deterrence, with the right to mount massive nuclear retaliation, designed to inflict unacceptable damage to the enemy striking first.²⁰ This necessarily calls for healthy stockpile of nuclear weapon, safe and ready to use, if the need arises.

The size, components, deployment and employment of nuclear forces have to be decided in the light of strategic environment, economic imperatives and the needs of national security. However, the concept of "minimum deterrence" encompasses an arsenal that is able to deliver a nuclear blast from "a triad of aircraft, mobile land-based missiles and sea-based assets," one that can respond to an attack "in the shortest possible time" and employs a space-based early warning system. To raise the threshold for the outbreak of military conflict, India has to also maintain highly effective conventional warfare capabilities.²¹

Technology Denial Regime

Soon after the test in 1974, there was orchestrated uproar in the western world and economic, as well as technology sanctions were applied against India to deny any nuclear or dual-use technology or material or equipment. Mutual technical cooperation and agreements were promptly suspended by US, Canada and others. Anything even remotely connected to nuclear or aviation technology and space programme were denied. Indian scientists and engineers were prevented from research/professional association in any advanced technology field. India stood completely isolated even for peaceful technology due to these sanctions. India however pressed on and made slow but spectacular advances in practically every technology – nuclear, space and modestly in aviation.

India's Nuclear Weapon Programme

All nuclear weapon states launched their nuclear programme by acquiring weapon capability first, and later moved on to peaceful nuclear technologies. It was quite the opposite in the case of India, whose initial R&D programme in

nuclear technology was primarily aimed at harnessing nuclear energy and other peaceful applications. Having built up a nuclear infrastructure and R&D base, the decision to acquire nuclear weapon came much later. Light Water Reactors (LWRs), needing enriched uranium as fuel, were in use in other nuclear countries. India also started off with LWR, with US assistance, but constraints in accessing sustained source of nuclear fuel within the country necessitated use of natural uranium in PHWRs, reprocessing of spent (depleted uranium) fuel to separate plutonium and use of separated plutonium as part of fuel for FBRs. Having mastered this technological breakthrough and being able to accumulate moderate quantity of plutonium, weaponisation (plutonium bomb) remained just a matter of choice, to be exercised as and when national security consideration²² demanded. A 20 kiloton weapon could be fabricated with barely 5 kg of weapon-grade-plutonium, almost half that of highly enriched uranium²³.

The first Research reactor (Apsara - 1 MW), fuelled by enriched uranium from the British, went critical in 1957. This was followed by 40 MW Canada-India Reactor - with US supplied heavy water, giving rise to its name CIRUS (Canada-India Reactor, US) - that went critical in 1960. 100 MW Dhruva Reactor was designed, constructed and commissioned at BARC by Indian engineers and scientists in 1985. Natural uranium is the fuel used and heavy water as moderator and coolant for Dhruva and Cirus, which are the chief sources of weapons-grade plutonium.²⁴

Theoretically, spent fuel obtained from all operational nuclear reactors - except Tarapur Atomic Plants 1&2 and RAPS-1&2 (in Rajasthan), which are under IAEA safeguards - could be reprocessed at three plants for separating plutonium, which could then be utilised either as fuel for energy generation or for weapon programme, depending upon the assessed need.²⁵

CHAPTER IV

INDO-US CIVIL NUCLEAR COOPERATION

Indo-US Relations

For better comprehension of the background of the CNC, it would be worthwhile to recall the history of turbulent bilateral relations of the two democracies – the world’s oldest and the largest. The relationship has literally swung from one extreme to another - from initial euphoria in the 1950s to

prolonged estrangement in the later decades due to Cold War complexities and India's nuclear tests, and finally to the current phase of unprecedented upswing commencing in the late 1990s and gathering momentum with the dawn of the new millennium. A brief account of this tumultuous relationship journey is placed at Appendix 'E'.

Transformation of the relationship, from estrangement to engagement, saw the US administration completely reverse its earlier stand - which had kept the Indo-US relationship hostage to the nuclear proliferation straitjacket of 1970s vintage – in 2005. In a bold decision, the US offered cooperation in civilian nuclear as well as other areas of mutual interest, culminating in a joint US-India statement issued during the visit of Indian Prime Minister Dr. Manmohan Singh to Washington on 18 Jul 2005.²⁶ Embedded in the statement, among a wide spectrum of areas for cooperation, were three major dialogue areas : strategic (including global issues and defence), economic (including trade, finance, commerce, and environment) and energy. The civil nuclear technology has been identified as a key area of cooperation, aimed at ending the three decade long isolation of India by throwing open the latest civil nuclear technology, material and R&D, and in the process, facilitating accelerated production of nuclear energy, thus reducing the future consumption of hydrocarbon by India.

A further joint statement was issued during the US President's visit to New Delhi on 02 Mar 2006²⁷, after accepting India's separation plan²⁸.

Salient Features of 18 Jul 2005 Joint Statement. The statement covered a broad spectrum of issues of strategic interest and shared belief in democracy, war on terrorism, economy, energy & environment, nonproliferation and security, high technology and space, India's possible participation in ITER / Gen IV projects, removal of certain Indian organisations from the US entity list and civil nuclear cooperation, each issue with clearly defined long-term vision and specific measures to be initiated. The road map for nuclear cooperation outlined in the statement is summed up in the succeeding paragraphs.

India will assume 'the same responsibilities and practices as other countries with advanced nuclear programs', and has agreed to:

- (a) Identify and separate civilian and military nuclear facilities and programmes and file an IAEA declaration regarding its civilian facilities;
- (b) Place voluntarily its civilian nuclear facilities under IAEA safeguards;

- (c) Sign and adhere to an Additional Protocol with respect to civilian nuclear facilities;
- (d) Continue its unilateral moratorium on nuclear testing;
- (e) Work with the U.S. for the conclusion of a multilateral Fissile Material Cut Off Treaty;
- (f) Refrain from the transfer of enrichment and reprocessing technologies to states that do not have them and support efforts to limit their spread;
- (g) Secure nuclear materials and technology through comprehensive export control legislation and adherence to the Missile Technology Control Regime and Nuclear Suppliers Group.

The US has reciprocally promised that it will:

- (a) Seek agreement from Congress to adjust domestic laws and policies;
- (b) Work with friends and allies to adjust international regimes to enable full civil nuclear energy cooperation and trade with India;
- (c) Consult with partners on India's participation in the fusion energy consortium ITER and support India's part in work to develop advanced nuclear reactors. As evident from the road map indicated above, each country is to initiate a number of steps before the agreement could come to fruition.

Separation Plan – India's Nuclear Assets

One of the most important steps in the civil nuclear cooperation was the identification and separation of civil nuclear facilities²⁹ from those dedicated to the strategic programme. Any facility that was determined not to be relevant to its strategic programme was declared civil. Additionally, a facility located in a larger hub of strategic significance, notwithstanding the fact that it may not be normally engaged in activities of strategic significance, would be excluded from the civilian list. These civilian facilities are to be placed under IAEA safeguards and become eligible for fuel supply.

Thermal Reactors. A plan has been worked out to separate 14 thermal power reactors between 2006 and 2014, which would be offered for safeguards. This includes presently safeguarded four reactors - TAPS 1&2 at Tarapur, RAPS 1&2

at Rawatbhatta - and Koodankulam-1&2 that are under construction with Russian help. Eight other PHWRs will also be offered separately, possibly NAPS-1&2 at Narora, RAPS-3&4 and the under-construction RAPS-5&6 and KAPS-1&2 at Kakrapar. Such an offer would raise the total installed thermal power capacity under safeguards from the present 19 per cent to 65 per cent by 2014.³⁰

FBRs. The plan specifically excludes from safeguards, the Prototype FBR and the Fast Breeder Test Reactor (FBTR), both located at Kalpakkam, as the FBR programme is at the R&D stage and its technology will take time to mature and reach an advanced stage of development.

Future Reactors. India has also decided to place under safeguards all future civilian thermal power reactors and civilian breeder reactors, while retaining the unfettered right to determine which of the future reactors are to be treated as civilian. It was also decided to permanently shut down the 40-MWt CIRUS reactor, in 2010. This reactor being a bone of contention since 1974, it was considered prudent to deactivate it to overcome Canada's resistance as a member of Nuclear Supplier Group (NSG). India also expressed its willingness to shift the imported fissile core of the 1-MWt research reactor Apsara that was purchased from France, outside BARC and place it under safeguard in 2010.

Other Facilities. Additionally, with a view to attract technological assistance, certain specific facilities in the Nuclear Fuel Complex, to be separated as civilian and offered for safeguards are to be identified and indicated by 2008. However, the Heavy Water Production plants at Thal, Tuticorin and Hazira, though proposed to be designated for civilian use during 2006-2009, have not been considered relevant for safeguards purposes. Nine Research Institutes viz. Tata Institute of Fundamental Research, Variable Energy Cyclotron Centre, Saha Institute of Nuclear Physics, Institute for Plasma Research, Institute of Mathematics Science, Institute of Physics, Tata Memorial Centre, Board of Radiation and Isotope Technology and Harish Chandra Research Institute have been declared as civilian, as these facilities are considered safeguards-irrelevant, but with potential to play a prominent role in international research projects.

IAEA Safeguards

India is required to negotiate a protocol with IAEA to define the safeguard framework, under which designated civilian nuclear facilities would be inspected. Not being part of NPT, India is formally not treated as 'Nuclear Weapon State' (NWS). However, being a de facto nuclear power, India is not prepared to be

treated as 'Non-Nuclear Weapon State' (NNWS) either. Hence the need for the India-specific safeguard protocol. Negotiations are on between India and IAEA to work out the nitty-gritty of safeguards, including provisions to guard against withdrawal of safeguarded nuclear material from civilian use.

Supply of Nuclear Fuel and Nuclear Suppliers Group (NSG)

Under the proposed agreement, the US is committed to ensure reliable supply of fuel to India and to work with its friends and allies to adjust the practices of the NSG, thus facilitating India's full access to the international fuel market. NSG supplies are dependent on formal recipient government assurances confirming safeguards and no nuclear explosive use. In 1992, the NSG added full-scope IAEA safeguards as a condition of nuclear supply to NNWS, and established Nuclear-related Dual-use Guidelines and a Control list. In 1995, the NSG added controls on nuclear technology for items on the Trigger List, which attract mandatory IAEA safeguard on supplied items.³¹ India will have to tread carefully while dealing with NSG for nuclear supplies, without getting tripped on NWS or NNWS status. Despite open support by Russia, France, the UK and several other NSG members, to the proposed Indo-US agreement, there could be difficulties ahead in convincing all members of NSG, which functions on consensus. The US support would be critical to ensure India-specific waiver by NSG members while considering nuclear supplies to India.

The proposed separation plan also envisages provisions for corrective measures that India may take to ensure uninterrupted operation of its civilian nuclear reactors in the event of disruption of foreign fuel supplies. India has decided to place its civilian nuclear facilities under India-specific safeguards in 'perpetuity' - a term not used in either of the joint statements, which mentioned 'voluntary' placement of facilities under safeguard, as applicable to any NWS.

As per the understanding between the two countries, the US has expressed willingness to incorporate assurances regarding fuel supply in the bilateral US India agreement under Section 123 of the US Atomic Energy Act. This section deals with terms and conditions of nuclear cooperation between US and other countries. The US will also support an Indian effort to develop a strategic reserve of nuclear fuel to guard against any disruption of supply over the lifetime of India's reactors. If despite these arrangements, a disruption of fuel supplies to India occurs, the US and India would jointly convene a group of friendly supplier countries, including Russia, France and the UK to pursue such measures as would restore fuel supply to India. Meanwhile, US has approached NSG members to

adapt their guidelines to facilitate full civil nuclear cooperation with India. In March 2006, the NSG at its plenary meeting in Brazil held a preliminary discussion on this issue. The matter is expected to be further discussed by the group. India has separately raised this issue with several countries - Russia, France, UK, Japan, Germany, Brazil, Norway, Iceland and Cyprus, among others, and urged them to lift the existing restrictions on nuclear supplies to India.³²

Adjustment in US Laws

The process for lifting the existing legal bars on nuclear cooperation with India, has already commenced in the US. After clearance by the US House of Representatives International Relations Committee on 27 Jun 2006, the House passed the Bill on 27 Jul 2006. The Senate Foreign Relations Committee passed its version of the Bill on 29 Jun 2006. The US Senate is now expected to vote on this Bill sometime in September 2006. Since the two Bills are somewhat different in content, according to US practice, they will need to be reconciled to produce a single piece of legislation. After adoption by both the House and the Senate, this would become law when the US President accords his approval.³³ Only after this, the law would stand amended to allow nuclear cooperation with India.

In parallel, an agreement under Section 123 is being negotiated between the US and India, subject to approval by the US Congress. It is only after crossing all these hurdles that the CNC would come into force.

Participation in International Projects

International Thermonuclear Experimental Reactor (ITER) Programme. With active support from US, India has been admitted as a full member of ITER on 06 Dec 2005. The ITER fusion project, which aims to generate 500 MW of thermal power initially through the process that powers the sun, is a collaborative research project by seven participants – the US, Russia, China, the European Union, Japan, South Korea and India. The reactor is to be built in France.³⁴

Nuclear fusion is seen as a cleaner approach to power production than nuclear fission and fossil fuels. India will contribute 9.09 percent of the total project cost, which works out to be around \$500 million over a 10-year period. Ninety percent of this will be in the form of equipment to be built by Indian companies for ITER, which amounts to 10 percent of the machines to be used in the project. The programme is anticipated to last for 30 years - 10 years for construction and 20 years of operation - and cost approximately \$12.1 billion. India is expected to

contribute significantly in the project and benefit immensely once the project is successfully completed. The hi-tech expertise gained during the project will no doubt be available for exploitation in other equally technologically challenging applications in the country.

Generation IV Initiative Forum (GIF). The Generation IV initiative is a world-wide ongoing effort to develop a series of fourth-generation technologies, fast reactors, high-temperature gas reactors, reactors optimized for hydrogen production etc. These reactors are meant to substantially improve the existing generation of reactors and make them safer, efficient, proliferation-resistant and economical, with reduced radioactive waste. High Temperature Gas Cooled Reactors (HTGRs) being developed by a US firm could be termed one such reactor.³⁵ Several such efforts are on in Russia, Japan, France and UK. Global Nuclear Energy Partnership (GNEP) is a US-led programme aimed at synergising individual R & D efforts to develop a most efficient advanced fast burner reactor, which would burn most part of the fuel - including spent fuel without separating plutonium – thus generating more electricity and reducing waste management needs as well as be proliferation-resistant. Broadly, six types of reactors have been identified as the fourth-generation reactors - including breeder reactors and thorium-fuelled reactors. With extensive R&D work in the FBR and Thorium reactor programme, India could take a lead role in this forum.³⁶ While recognising that the GNEP was distinct from the nuclear deal with the US, the PM has maintained that India could possibly associate with the GNEP as an ‘equal partner’ in the capacity of a ‘supplier nation’.³⁷ Final status of this issue is still awaited.

CHAPTER V

IMPLICATIONS OF CIVIL NUCLEAR COOPERATION

Broader implications of the proposed CNC could be better understood and India’s options determined, if the validity of reasoning put forward in support, as well as soundness of views against it, are analysed.

Opposing Views and Implications

Opposing viewpoints and resultant implications expressed by nuclear scientists, security and strategic analysts, media commentators, enlightened professionals of various kinds and political leaderships of different hues, include the following:

- Erosion in India's sovereignty in strategic nuclear autonomy;
- Compromise with national security by indirectly allowing US to cap India's strategic programme or raising its cost unacceptably high;
- "Voluntary" moratorium on further nuclear testing being turned into enforced ban, even before CTBT comes into force;
- Veiled attempts to limit stock of Indian fissile material even before FMCT comes into force, thus denting the concept of "credible minimum deterrent";
- Deliberate impediment in indigenous nuclear R&D;
- Adequacy of indigenous technology to accelerate three-phase nuclear energy generation programme, without external support;
- Inadequacy of nuclear energy to address overall needs of growing economy, due to high cost and waste management problem;
- Goalposts being constantly changed by US since 18 Jul 2005 statement- Additional conditionalities being added by way of annual certification by the US President for continuation of nuclear cooperation. 'Full' cooperation being diluted to bare-bone nuclear commerce, excluding latest enrichment and reprocessing technology;
- India is not being treated equivalent to NWS. 'Voluntary' placement of nuclear facilities under safeguard, as applicable in case of NWS, converted into mandatory conditions, to be enforced in perpetuity;
- Undue interference of US in India's foreign policy;
- Non-convergence of strategic interests of both countries. In fact interests diverge on various important issues, such as Pakistan, Iran, Iraq, West Asia etc;
- US ploy to use India as a countervailing force against a rising China.

For ease of comprehension and analysis, these overlapping views could be grouped under the following four categories :

- (a) Strategic Implications
- (b) Nuclear Technology and Energy
- (c) Goalpost Changes
- (d) Foreign Policy

Strategic Implications

On 27 May 1998, barely two weeks after conducting five underground nuclear tests, the Government of India declared - through a paper on 'Evolution of India's Nuclear Policy' presented to the parliament - that 'the results from these tests were in accordance with the expectations of scientists' and the limited series of five tests undertaken by India was intended to achieve the specific objective — 'new parameters need to be identified, tested and validated in order to ensure that skills remain contemporary and succeeding generations of scientists and engineers are able to build on the work done by their predecessors. It has achieved its stated objective. The data provided by these tests is critical to validate our capabilities in the design of nuclear weapons of different yields for different applications and different delivery systems. Further, these tests have significantly enhanced the capabilities of our scientists and engineers in computer simulation of new designs and enabled them to undertake sub-critical experiments in future, if considered necessary. In terms of technical capability, our scientists and engineers have the requisite resources to ensure a credible deterrent.'³⁸

The paper also reiterated that 'India will, now observe a voluntary moratorium and refrain from conducting underground nuclear test explosions. It has also indicated willingness to move towards a de jure formalisation of this declaration' and 'India has also indicated readiness to participate in negotiations in the Conference on Disarmament in Geneva on a Fissile Material Cut-off Treaty.'

These voluntary declarations clearly bring out India's considered intentions regarding further testing, CTBT as well as FMCT way back in May 1998, without any hint of any nuclear cooperation with anyone in the offing. Continuation of this policy was perhaps one of the key factors on which improvements in India-US relations in subsequent years, was based. Footprints of such a policy in the CNC are, therefore, not a surprise.

Notwithstanding assessed sufficiency of nuclear tests in 1998, inclusion in the CNC of India's unilateral moratorium on nuclear testing, without the US making an explicit reciprocal commitment to abide by its own 1992 moratorium, is indefensible. The '2002 Nuclear Posture Review' of the US is quite explicit on this point: 'The United States has not conducted nuclear tests since 1992 and supports the continued observance of the testing moratorium. While the US is making every effort to maintain the stockpile without additional nuclear testing, this may not be possible for the indefinite future.'³⁹

Ironically, the US Senate has already rejected the CTBT⁴⁰, which can come into force only after the treaty is signed and ratified by 44 nuclear-capable (overt and covert) countries, including Pakistan and Israel apart from P5 states. Whether there would be any need to carry out tests in future or not, could be best assessed by the nuclear scientists. However, voluntary surrender of the sovereign right to test, in the event of pressing technical need for refinement in weapon technology, is considered inexplicable. Foreclosure of a vital strategic option, when none of the nuclear countries - including our potential adversaries - have done that, could have a profound impact on the national security measures in the future.

Even if this 'no further test' commitment is eventually not incorporated in the bilateral agreement currently under discussion, mere presence of such a binding clause in the amended US law permitting this agreement will have the same debilitating effect and the CNC would be null and void the moment India carries out any further test.

Yet another issue is the cost of maintaining or building separate reactors dedicated to the strategic programme. Unlike other nuclear countries, India's nuclear programme remained 'civil' for several decades and only later diverted to meet 'military' needs. Again, unlike P5, who generally follow stockpile based doctrine to sustain large nuclear arsenal, necessitating dedicated nuclear reactors, India's nuclear doctrine, based on the concept of 'credible minimum deterrent', requires only limited arsenal, adequate to address a given threat perception at any stage. "Today, the Indian deterrent is maintained by 'incremental efforts' from existing 'civilian' nuclear facilities around the country and not just the two research reactors at BARC. We produce what we need for the military programme at any given time and leave the rest for civilian use," says Dr. A.N. Prasad, former director of BARC. "Having dedicated facilities will terribly raise the cost of the weapons programme."⁴¹

This contention, however, is not entirely valid. Nothing stops declared noncivil facilities, outside safeguard/CNC and therefore utilising indigenous nuclear fuel, from producing electricity, when fissile material is not needed for immediate military purposes. These reactors could therefore be utilised just like they have been so far, and easily switch their role to fissile material generation for weapon, when needed. After all, the authority to separate 'civil' from 'military' facilities rests solely with India, now as well as in future.

Similarly, the fears of capping of fissile material and strategic programme are unfounded. Stoppage of fissile material production is linked to FMCT coming

into force after negotiation, finalisation, acceptance and ratification.⁴² The past experience of other international treaties suggests a considerable time lag in accomplishing these elaborate stages. By then India should have generated adequate fissile material, if not already done, to sustain its credible deterrence. Having achieved that objective, no purpose would be served by remaining outside a major international treaty with ramifications on arms control.

Weapon-Grade Plutonium (WGPu) Stockpile. According to one estimate, Cirus and Dhruva operating at normal efficiency, could have produced 575 kg of WGPu by end 2004. With approximate consumption of about 130 kg of this for the purpose of earlier tests in 1974 & 1998, and other research programmes, India would have been left with about 445 kg of WGPu, enough to make 85 fission bombs.⁴³ Ashley J Tellis of Carnegie Endowment, USA estimates WGPu production by India at the rate of about 32 kg per annum.⁴⁴

Reactor-Grade Plutonium (RGPu) Stockpile. Other nuclear reactors could have significantly added to RGPu stockpile during this period and would continue to do so. As per estimates, with un-safeguarded eight reactors of 220 MW and one of 500 MW capacities, operating at 60-80 per cent efficiency, India may be in possession of about 8 tonnes of RGPu by end of 2004⁴⁵. Though primarily meant for second stage of nuclear energy programme, even this could be used to make nuclear explosives. The US conducted a test with such material in 1962. One of India's tests in May 1998 is reported to be with RGPu.⁴⁶

Size of Nuclear Arsenal. There has also been a debate, based mostly on subjective assessment, on the actual size of nuclear arsenal needed to ensure credible deterrence. This estimate varies from 60 to 150 warheads by K Subrahmanyam, 132 by Brig Vijai K Nair, 200 by Rear Admiral Raja Menon and over 400 warheads by others.⁴⁷ If the deterrence fails and India has to suffer the first nuclear strike, however incredible it may seem, the effective retaliatory strike must target, as per analysts, at least 10 major cities and industrial centres of the enemy. Taking into account factors such as four warheads of 20 to 40 kilotons per target, probable error of Agni missile and destruction assurance level of 50-60 per cent, possibility of destruction of 50 per cent of own arsenal in the first strike and minimum reserve of one third of warheads for unforeseen eventualities, the arsenal size needs to be in the range of about 200.⁴⁸ On the basis of fissile material production data cited above, there are reasons to believe that India will have this arsenal in the near future.

FMCT Status. The question whether the India-US agreement would lead to a cap or constraint on India's nuclear weapons arsenal in either quantitative or qualitative terms, has been answered in the 'statement of US policy' section of the House of Representatives Bill on nuclear cooperation, which says that US should seek to achieve a moratorium on fissile material production by India, Pakistan, and China and promote the 'reduction and eventual elimination' of nuclear weapons in South Asia. In the Senate version, the President is expected to report annually to Congress about US efforts to get India and Pakistan to secure, cap, and reduce their fissile material stockpiles.⁴⁹

However, the draft FMCT circulated by US for consideration at the Conference on Disarmament (CD), Geneva, may be difficult to sail through easily in view of reported objections of certain countries, including China, linking FMCT with simultaneous prevention of an outer-space arms race.⁵⁰ As the US could hardly be expected to agree to such linkages, FMCT may not happen soon.

Conclusion. From the foregoing, it is evident that the apprehensions of curtailment of fissile material production or 'capping' of strategic programme in terms of nuclear arsenal are not valid. However, the separation of 'civil' from 'military' reactors would indeed raise the cost of the weaponisation programme. The real worrisome issue pertains to further test, if required to improve weapon design in future to neutralise changed threat perception from a vastly superior weapon with the enemy or qualitatively different n-weapon in the hands of a non-state actor. Despite the prime minister's assertions in the parliament relating to further test, its impact on CNC and response by the US as well as NSG could be well imagined. All future supplies would cease at once.

Nuclear Technology and Energy

There were initial worries about the negative impact of the CNC on indigenous nuclear R&D programme, especially India's three stage nuclear energy programme. However, the separation proposed by India and accepted by the US, excludes FBRs from safeguard, leaving indigenous R&D programme to pursue its efforts. As of now, these R&D programmes are at an 'evolving' stage and involve advanced reactors and futuristic systems, yet to be proven and may take two or three decades to materialise.⁵¹

The nuclear energy share in the overall installed power generation capacity is barely 3 per cent as of now. The thermal power plants based on coal and oil,

followed by hydel power plants, would continue to be the primary source of power generation in the next three decades. While the inability of nuclear energy to play a major role in the near future is well accepted, several factors - poor quality of indigenous coal, galloping increase in energy consumption by the growing economy, near dependence on import of oil, spiralling cost of import with perilous impact on economy, gradual depletion of finite hydrocarbon reserves and environmental impact of oil / coal usage - call for a re-look at long-term energy alternatives.

While improvement in efficiency in plant load factor in thermal plants, further exploitation of hydel/non-conventional/renewable source of energy need no emphasis, nuclear energy cannot be ignored. Despite the initial cost and problem of waste management, nuclear energy is recognised as the cleanest energy, with inexhaustible reserves.

Buoyed by the impending access to nuclear material and equipment, as well as participation in advanced nuclear research programmes like ITER, target for increased generation of nuclear energy has already been revised upwards, from 20 GWe by 2020 to 40 GWe by 2030. Presently operating simultaneously at five sites - Kudankulam, Rawatbhatta, Kaiga, Tarapur and Kalpakkam – plans are being made to launch 10 reactors of 700-1000 MWe each, i.e. a pair each at five sites at a time, with further addition of next pair at the same site after four years. Within the next 15 years, the construction and commissioning of 25 to 30 reactors, two reactors a year, could be achieved after identification of additional four or five sites. A mix of LWR of latest technology and indigenous PHWR is being worked out, with Russia, France, US and Japan identified as potential suppliers of nuclear reactor and technology, without any special preference to the US.⁵² Such ambitious planning would have been inconceivable in the absence of CNC.

Additionally, CNC would start delivering in the medium-term and act as a fallback arrangement, should the thorium-based reactor project be inordinately delayed due to unforeseen technical glitches or prove to be unbearably costly. The ambitious ITER programme, in which India has equal stake, is yet another hope of meeting vastly increased energy requirements post-2030. India's likely inclusion in the GNEP as the 'supplier nation' as against current 'recipient' status also presents a silver lining in the nuclear energy programme. It is pertinent to note that Indian participation in both programmes is the direct outcome of the CNC.

Goalpost Changes

While addressing a joint press conference in New Delhi on 02 Mar 2006, President Bush was candid enough to admit that ‘It is not an easy job for the Prime Minister to achieve this agreement, I understand. It is not easy for the American President to achieve this agreement but it is a necessary agreement... I am looking forward to working with our Congress to change decades of law that will enable us to move forward on this important initiative.’⁵³

Implicit in this statement is a pragmatic realisation of the dynamics of a functioning democracy. The US President, however powerful as the Executive Head of the State as well as the government, is not empowered to sanction an agreement in violation of extant domestic legislation. Nuclear Non-Proliferation Act (NNPA) 1978 is a reality in the US. It took over 13 years to give legal sanctity to a similar civil nuclear cooperation agreement between the US and China, both NWS under NPT.⁵⁴ Detailed and cumbersome legislative procedures, made more difficult by very vocal lobbies representing nonproliferation and other diverse interest groups, are part of US democratic process. That the process would be a difficult one, including India-specific safeguard by IAEA and waiver by 45-member NSG, has always remained a matter of reality.

Even though termed as ‘civilian nuclear cooperation’, there are numerous riders, akin to arms control measures, being attached to CNC. There have been disturbing changes incorporated in the House and Senate bills, such as reference to Proliferation Security Initiative; Presidential annual certification for continuation of CNC; dilution in ‘full’ cooperation denying enrichment/reprocessing technology / equipment; binding India to ‘full scope’ safeguards applicable to NNWS, bringing ‘all’ nuclear facilities under safeguard/inspection; provision of US inspectors to check safeguard compliance; other intrusive non-proliferation benchmarks; bilateral agreement only after safeguard agreement with IAEA and amended NSG guidelines etc. These go way beyond the Joint Statement on 18 Jul 2005. However, the Prime Minister Dr. Manmohan Singh has repeatedly asserted that India reserves the right to decide, in case of material changes in the format of final agreement, and will accept only IAEA safeguards on nuclear facilities, as envisaged in the Separation Plan, only when all nuclear restrictions on India have been lifted.⁵⁵

It is, however, clear that India has already come under pressure on several issues, as under:

- (a) From 'voluntary' to accepting safeguard in 'perpetuity' linked to permanent fuel supply is a departure.
- (b) Fuel supply linkage to 'no test' condition in the Senate bill on the subject is a matter of concern.
- (c) Despite assertions of 'India being a responsible state with advanced nuclear technology' deserving 'equal benefits and privileges' as per the joint statement, India cannot withdraw facilities from safeguard like NWS can. Broad parameters of IAEA safeguards are still being negotiated. Whether the safeguards would be India-specific, somewhere between NWS and NNWS, duly recognising India's military programme, is not known as yet.
- (d) Legislative requirement of Presidential annual certification for continuation of CNC brings uncertainty to the agreement. As it would be a very significant departure from the initial agreement, India is unlikely to accept this and therefore this possibility could be safely ruled out.
- (e) The envisaged 'full' cooperation is being truncated through the Senate Bill by blocking cooperation in the uranium enrichment technology and supply of related equipment.⁵⁶

Conclusion. Taken together, there have been several changes in the goalpost since the 18 Jul 2005 agreement. The US appears to be extracting as much as possible from 'NNWS' India through domestic legislation, beyond what was agreed upon. As the full details of several vital components are not yet known - final contours of US legislation (after reconciliation and Presidential consent), and bilateral (123) cooperation agreement; safeguard protocol with IAEA and agreement with NSG - full analysis of implications and India's options on this will have to wait. However, the need to negotiate hard at every stage to keep the terms of all the three emerging agreements within the broad framework envisaged in Jul 2005, cannot be overemphasised.

Foreign Policy

India's strategic importance to US policy makers is obvious, with President Bush himself pointing out during his India visit that 'the partnership between our free nations has the power to transform the world. As a global power, India has a

historic duty to support democracy around the world... India's leadership is needed in a world that is hungry for freedom'.⁵⁷

While supporting democracy as a matter of principle, India can hardly afford to take evangelic interest in either the 'regime change' or 'pre-emption' policies of the US, which believes in selective application of such policies, guided solely by its own national interest and coloured world view. A true partnership can emerge only on the basis of a discernable shift in geo-strategic policy towards one another, making it mutually beneficial.

Iran Imbrolio. As regards the CNC providing leverage to the US to influence India's foreign policy, the prime minister has categorically denied such an eventuality.⁵⁸ Certain recent events have, however, added grist to the growing belief in the US insensitivity to India's long-term interests in the region. Given the enormous reserves of natural gas in Iran, that country is a natural energy partner for India and multiple forms of transport infrastructure, including pipelines and liquefied natural gas (LNG) terminals and tankers, will be needed between the two countries. It is in India's strategic interest to retain its close and friendly ties with Iran, which happens to be, as of now, the only route to Afghanistan, a country of strategic interest to India. The proposed gas pipeline contract with Iran, with vital bearing on India's long-term energy security, could also open up new possibilities for the export of oil and gas from the wider Central Asian and Caspian region.

Iran's persistent attempt to enrich uranium in its nuclear facilities, ostensibly for peaceful purposes but most certainly for weaponisation in flagrant violation of its obligation to NPT as NNWS signatory, escalated its conflict with other NPT signatories. Restricted access to IAEA inspectors to check Iran's nuclear facilities, inauguration of a Heavy Water plant on 26 Aug 06 and defiant refusal to comply with UNSC resolution to stop uranium enrichment by 31 Aug 2006, have only aggravated the situation. The House of Representatives Bill required India to support the hardening US stand. Fortunately, this amendment was rejected by the House. Despite such US pressure, however, it would be in India's interest not to give in, but chart its course while dealing with such contentious issues. After all, even after 'strategic partnership' with India, US continues to support and arm the military dictatorship of Pakistan in furtherance of its 'global war on terror'. India could take a leaf from this.

China Factor. The CNC has often been viewed as a not so subtle attempt by the US to prop India as a countervailing force against China, in Asia. This

view is, however, debatable. Ashley Tellis⁵⁹ has succinctly put this issue in proper perspective by articulating US awareness that a policy of containing China is neither feasible nor necessary at this point in time; India too, currently, has no interest in becoming part of any coalition aimed at containing China, and the US's strategy of assisting India to become a major world power in the 21st century is directed primarily towards constructing a stable geopolitical order in Asia that is conducive to peace and prosperity. None could fault this logic as this is in perfect sync with India's own interest. While constructively engaging China in resolving legacy disputes, deepening trade and other economic interests, contributing in equal measure in regional security and economy, it is to be noted that both India and China are competing basically in the same region for a variety of interests. While mutual cooperation in the region must remain the guiding principles, India cannot afford to lag behind any further and lose competitive edge. Attainment of significant economic, technological and military power in the long run would only help India's cause to remain a strong contender, regionally now and globally later.

In view of the US being the sole superpower – with clear lead in economy, military and technology – now, as well as, for the next several decades, India would need US assistance in economy and advanced technology, including defence sector. Focused war on terror, with more objectivity, will be in mutual interest. US also needs India as a reliable partner in this region. The strategic partnership between the two is, therefore, mutually beneficial, even though complete congruence on all issues is neither feasible nor essential.

Conclusion. With the US pushing for retaining its power around the world, foreign policy pressures are bound to confront India in the future. The CNC will certainly provide leverage to the US due to increasing dependence of India on the US support for nuclear fuel, material, equipment and technology. However, CNC cannot be jettisoned on this ground, as it provides a window to end nuclear apartheid practiced against India for over three decades and accords status of de facto nuclear weapon state, albeit with some restrictions. The long-term energy security, by harnessing full potential of nuclear energy, must remain a clear target, without however, denting its relations with other friendly countries. This calls for balancing competing considerations, without losing the long-term perspective and weaving its way through the diplomatic minefield with constructive engagement and tightrope walking.

CHAPTER VI **CRYSTAL GAZING**

Indian Perspective

Looking Beyond Bomb. The history of India's advancements in nuclear technology in the preceding six decades, briefly encapsulated in chapters II and III, brings out clearly that the country has been a reluctant gatecrasher into the nuclear club, much against its decades of campaign for disarmament and nuclear weapon free world. Even after having been forced into acquisition of nuclear weapon purely for deterrence, the hallmark of India's nuclear policy has been responsibility, restraint and idealism for continued desire for peace.⁶⁰ Having built up the necessary infrastructure indigenously and while pursuing its strategic programme in a manner to retain deterrence as a credible and relevant option, attention must also be focussed on other pressing areas, where major national goals are yet to be realised. Lack of adequate and sustained progress in these areas could act as a stumbling block in India's aspiration to become a great power in the decades ahead.

Changing Economic Scenario. Enamoured of socialism and disdainful of external influence, India largely walled its economy off from external trade and free markets. While neighbouring China was opening up and growing rapidly, India stagnated. Only in the 1990s did it embrace economic reforms and begin to tap the vast potential of its own people. Over the last 15 years, India's economy has been second in growth only to China's, hitting a sizzling 7-8 per cent in the last three years and the expectations of double-digit growth in the years ahead. A growing and prosperous economy is critical for India's continuing development, including poverty reduction. In terms of 'Purchasing Power Parity', India is one of the world's biggest economies – fourth largest (US\$ 30 billion, behind US (100), China (76) and Japan (32)) now, and projected to tie with US in second place in 2050 (with US\$ 100 billion, behind China at US\$ 143 billion).⁶¹

Shifting Centre of Gravity. By 2025, with the fast and furious economic growth, Asia's share of the global economy is projected to be about 43 per cent, thus making the continent the largest single locus of economic power worldwide. During this shift of gravity to Asia, China would have consolidated with its swiftly expanding economic sphere of influence not only in Asia but also in Latin America and Africa. Expanding EU, re-emerging Russia, confidently growing Latin America, slowly awakening Africa, would all add to the changing global equations, where

India will have to strive hard to retain its position as a major power. In the ensuing competition for resources and sphere of influence impacting geopolitical realities, India will have to fashion its own course as a stabilising force not only in the region but also as a credible voice in global affairs.

Partnership With US. How does India transit to that stage ? Military might could be built up with adequate funding and a focussed programme but to fuel desired economic growth -and to sustain it – a hefty dose of technology in all areas and foreign direct investment would be needed, amongst other infrastructural essentials. As of now, India is the world's sixth-largest consumer of energy, and by 2025 India's energy needs are expected to double. To reach its economic potential, India must diversify its energy sources. Expanding its civilian nuclear power capacity, assisted by the nuclear technology and fuel the CNC will provide, is one way to accomplish that.

In addition, strategic partnership with US brings with it a commitment to revitalise US-India Economic Dialogue, to deepen the bilateral economic relationship; support and accelerate economic growth through greater trade, investment, and technology collaboration; modernization of India's infrastructure as a prerequisite for the continued growth of the Indian economy; launch a U.S.-India Knowledge Initiative on Agriculture; Science and Technology Framework Agreement; build closer ties in space exploration, satellite navigation and launch, and in the commercial space arena through mechanisms such as the U.S.-India Working Group on Civil Space Cooperation, and India's participation in ITER and GEN IV Programme.⁶²

While much could be argued in the backdrop of the past bitter-sweet relationship between the two countries, the fact of US contribution in the economic upswing of Japan, Germany and China, to name just a few, can hardly be ignored. India's economic growth would certainly get traction with the committed US support as a strategic partner, however asymmetric the partnership may appear at this juncture.

US Perspective

A Paradigm Shift in US Policy. A shift in US policy was based on three major perceptions.⁶³ Firstly, the US had come to realise that India would not give up its nuclear weapons so long as various regional adversaries continued to possess comparable capabilities. Secondly, India's nuclear weapons did not pose a threat to US security and its larger geopolitical interests. On the contrary it could, under

certain circumstances, sub-serve US geo-strategic interest in Asia and beyond by turning Asia multi-polar. Thirdly, the US now appreciated that the range of technological resources associated with weapons of mass destruction and their delivery systems that were present in India in both the public and private sectors posed a far more serious threat to American safety -were these resources to be leaked, whether deliberately or inadvertently, to hostile regimes or non-state actors - than India's ownership of various nuclear assets. India as a part of broader non-proliferation regime, even though not within the technical framework of NPT, was considered a better bet than as one operating outside the regime, without any binding non-proliferation obligations.

This shift in US policy was not due to mere perceptions. There was irrefutable logic, backed up by hard evidence, which lent credibility to the new policy. India's impeccable record in nuclear non-proliferation, responsible conduct as a nuclear state (though outside NPT), vibrant democracy, liberal values as well as rising economic strength, made India, in the US view, an eminently suitable strategic partner, capable of acting as a stabilising influence in a region, awash with instability, ethnic strife, growing radicalism, authoritarian regimes and political brinkmanship.

The policy shift, eloquently articulated by President Bush and Secretary of State Condoleezza Rice on numerous occasions, has been summed up in the excerpts from two hearings before US Congress on 'US-India Civil Nuclear Cooperation Initiative'.

Robert G. Joseph, Under Secretary for Arms Control and International Security, in his written remarks before the Senate Foreign Relations Committee, on 02 Nov 2005 submitted that 'We believe it is in our national security interest to establish a broad strategic partnership with India that encourages India's emergence as a positive force on the world scene. Our desire to transform relations with India is founded upon a contemporary and forward-looking strategic vision. India is a rising global power and an important democratic partner for the United States. Today, for the first time, the United States and India are bound together by a strong congruence of interests and values. We seek to work with India to win the global War on Terrorism, to prevent the spread of weapons of mass destruction and the missiles that could deliver them, to enhance peace and stability in Asia, and to advance the spread of democracy. India and the United States are on the same side of these critical strategic objectives. Our challenge is to translate our converging interests into shared goals and compatible strategies designed to achieve these aims.'⁶⁴

Ashley J Tellis, a strategic analyst and part of the US Administration at the time of negotiating the civilian nuclear agreement with India, identified eight strategic objectives that India and US share. These include preventing Asia from being dominated by any single power; eliminating the threats posed by state sponsors of terrorism and religious extremism; arresting the further spread of weapon of mass destruction to states and non-state actors; promoting democracy; encouraging the diffusion of economic development; preserving global commons, especially the sea lanes of communication; promoting energy security and safeguarding the global environment. He goes on to say 'It would not be an exaggeration to say that for the first time in recent memory Indian and American interests in each of these eight issue-areas are strongly convergent. It is equally true to assert that India's contribution ranges from important to indispensable as far as achieving US objectives in each of these issue-areas is concerned. ---- The strengthening US-Indian relationship does not imply that New Delhi will become a formal alliance partner of Washington at some point in the future. It also does not imply that India will invariably be an uncritical partner of the United States in its global endeavours. India's large size, its proud history, and its great ambitions, ensure that it will likely march to the beat of its own drummer, at least most of the time.'⁶⁵

Even if all these are taken with a pinch of salt, is the excessive obsession with negative fallout of partnership justified? The answer is a clear NO. India stands to benefit a great deal with this strategic partnership even with occasional hiccups in mutual or international relations.

CHAPTER VII

CONCLUSION AND RECOMMENDATIONS

The proposed CNC is a defining moment in the bilateral relations of the two countries and effectively ends the nuclear pariah status of India. While formalising India's commitments towards non-proliferation, albeit outside NPT, the CNC recognises de facto nuclear power status of India. The unique partnership also gives a quiet burial to the US propensity of looking at India from the Pakistan perspective and more importantly, recognises India's strength in its own right. From all accounts, it is a new dawn in the India-US relationship, opening doors to cooperation in a multitude of areas for mutual benefits.

With assured fuel availability and access to other nuclear equipment and technology, N-energy generation programme in India would get a significant boost, accentuated further with India's participation in the prestigious ITER and GNEP

programme. This will strengthen indigenous R&D, currently subjected to technology denial regime. However, if indigenous availability of nuclear fuel is not significantly augmented by accelerating exploration and mining at identified sites and/or three-phase programme gets inordinately delayed, India's dependence on external fuel will increase substantially, with resultant pressure on foreign policy options. Necessary initiatives to minimise this possibility are, therefore, called for.

There is a need to contain long-term damage to India's interest by resisting new conditions for the CNC. Though a number of irritants have crept into the US bills towards this, a final call is yet to be taken. However, India is unlikely to be extended the benefits enjoyed by NWS, as originally envisaged. Contrary to earlier belief, the CNC does not lead to capping of India's strategic programme. A broader strategic partnership envisaged with US would also bring substantial benefits to India in its economy, other high technology, dual use items, defence, aviation, space, agriculture, as well as the fight against terrorism. Some degree of pressure, however, could be expected. It would call for deft diplomatic skills to manage such pressures without compromising long-term national interest.

Barring 'no test' condition, if the final outcome is in accordance with the envisaged CNC, it would be advantageous to India, with better access to import of nuclear material/fuel, technology and equipment/reactors, translating into higher nuclear power generation, now targeted at 40 GWe by 2030. This energy will supplement the electricity generated by other sources, to meet growing demands of the rising economy.

Recommendations - India's Options

With a view to attain India's vision for its rightful place in the emerging global order - and the attendant need to ensure its energy security on all fronts, including nuclear energy by ending nuclear isolation – and the pragmatic realisation of the constraining implications of CNC in the areas indicated above, the following options could be considered :

- (a) Imaginative and skilful negotiation with the concerned parties (US Administration, IAEA and NSG) to keep the terms of agreement within the limits of agreed framework in Jul 2005. Domestic pressure to unacceptable departure from the original terms, jeopardising the CNC completely, must be leveraged to keep the negotiations on course.
- (b) Current inadequacy of indigenous nuclear fuel must be addressed by undertaking aggressive exploration and mining of natural uranium, not only in the existing locations but also newer sites. The encouraging findings in the recent efforts need to be vigorously pursued.

- (c) Current three phase programme to be speeded up by taking advantage of opening up of cooperation in the field. Necessary funding support to be provided and progress monitored closely.
- (d) To the extent possible, indigenous reactors (PHWRs) to be maximised, reducing the number of imported reactors (LWRs) from NSG.
- (e) Other forms of energy resources to be exploited fully to counterbalance anticipated delay in large scale generation of N-energy.
- (f) Strategic programme to be followed relentlessly, to retain credible minimum deterrence.
- (g) Adequate stock of weapon grade fissile material must be produced and maintained, commensurate to not only assessed needs but also unforeseen contingencies demanding additional quantities in the future. After FMCT comes into force, this option will cease.
- (h) External pressure on foreign policy to be resisted and in case of conflicting choices, response to be crafted in a manner to minimise adverse impact on national interest.
- (j) Need of any further test for qualitative improvement in weapon design be reviewed comprehensively in the light of nuclear doctrine, and contingency plan drawn after weighing pros and cons of such a test in view of certain stoppage of nuclear commerce post-test. Lab test or computer simulated test may be considered as an alternate to obviate full scale test.
- (k) If N-test is considered absolutely essential at any stage, a suitable legislation be passed through the parliament nullifying the country's obligations regarding N-test, if committed under the CNC. A precedence of such an action already exists when the US reneged on its committed obligation to supply enriched uranium for Tarapur reactor for 30 years. The supply was unilaterally stopped, citing inability due to subsequent US domestic legislation "Nuclear Non-Proliferation Act" of 1978, to which India was not bound as the agreement pre-dated this law.

As a number of important agreements, already indicated, are yet to be finalised, it is recommended that full analysis of the agreement be undertaken after availability of the same.

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Appendix 'A'

Refers to Chapter I, Page 2, Para 1

India - USA Joint Statement

18 July 2005, Washington DC

The following is the text of Indo-US Joint statement issued after the delegation-level meeting between the Prime Minister, Dr. Manmohan Singh and the US President Mr. George W. Bush, in Washington DC on July 18, 2005.

"Prime Minister Manmohan Singh and President Bush today declare their resolve to transform the relationship between their countries and establish a global partnership. As leaders of nations committed to the values of human freedom, democracy and rule of law, the new relationship between India and the United States will promote stability, democracy, prosperity and peace throughout the world. It will enhance our ability to work together to provide global leadership in areas of mutual concern and interest.

Building on their common values and interests, the two leaders resolve: To create an international environment conducive to promotion of democratic values, and to strengthen democratic practices in societies which wish to become more open and pluralistic.

To combat terrorism relentlessly. They applaud the active and vigorous counterterrorism cooperation between the two countries and support more

international efforts in this direction. Terrorism is a global scourge and the one we will fight everywhere. The two leaders strongly affirm their commitment to the conclusion by September of a UN comprehensive convention against international terrorism.

The Prime Minister's visit coincides with the completion of the Next Steps in Strategic Partnership (NSSP) initiative, launched in January 2004. The two leaders agree that this provides the basis for expanding bilateral activities and commerce in space, civil nuclear energy and dual-use technology.

Drawing on their mutual vision for the U.S.-India relationship, and our joint objectives as strong long-standing democracies, the two leaders agree on the following:

For the Economy

Revitalize the U.S.-India Economic Dialogue and launch a CEO Forum to harness private sector energy and ideas to deepen the bilateral economic relationship.

Support and accelerate economic growth in both countries through greater trade, investment, and technology collaboration. Promote modernization of India's infrastructure as a prerequisite for the continued growth of the Indian economy. As India enhances its investment climate, opportunities for investment will increase. Launch a U.S.-India Knowledge Initiative on Agriculture focused on promoting teaching, research, service and commercial linkages.

For Energy and the Environment

Strengthen energy security and promote the development of stable and efficient energy markets in India with a view to ensuring adequate, affordable energy supplies and conscious of the need for sustainable development. These issues will be addressed through the U.S.-India Energy Dialogue. Agree on the need to promote the imperatives of development and safeguarding the environment, commit to developing and deploying cleaner, more efficient, affordable, and diversified energy technologies.

For Democracy and Development

Develop and support, through the new U.S.-India Global Democracy Initiative in countries that seek such assistance, institutions and resources that strengthen the foundations that make democracies credible and effective. India and the U.S. will work together to strengthen democratic practices and capacities and contribute to the new U.N. Democracy Fund.

Commit to strengthen cooperation and combat HIV/AIDs at a global level through an initiative that mobilizes private sector and government resources, knowledge, and expertise.

For Non-proliferation and Security

Express satisfaction at the New Framework for the U.S.-India Defence Relationship as a basis for future cooperation, including in the field of defence technology.

Commit to play a leading role in international efforts to prevent the proliferation of Weapons of Mass Destruction. The U.S. welcomed the adoption by India of legislation on WMD (Prevention of Unlawful Activities Bill).

Launch a new U.S.-India Disaster Relief Initiative that builds on the experience of the Tsunami Core Group, to strengthen cooperation to prepare for and conduct disaster relief operations.

For High-technology and Space

Sign a Science and Technology Framework Agreement, building on the U.S.–India High-Technology Cooperation Group (HTCG), to provide for joint research and training, and the establishment of public-private partnerships. Build closer ties in space exploration, satellite navigation and launch, and in the commercial space arena through mechanisms such as the U.S.-India Working Group on Civil Space Cooperation.

Building on the strengthened non-proliferation commitments undertaken in the NSSP, to remove certain Indian organizations from the Department of Commerce's Entity List.

Recognizing the significance of civilian nuclear energy for meeting growing global energy demands in a cleaner and more efficient manner, the two leaders discussed India's plans to develop its civilian nuclear energy program.

President Bush conveyed his appreciation to the Prime Minister over India's strong commitment to preventing WMD proliferation and stated that as a responsible state with advanced nuclear technology, India should acquire the same benefits and advantages as other such states. The President told the Prime Minister that he will work to achieve full civil nuclear energy cooperation with India as it realizes its goals of promoting nuclear power and achieving energy security. The President would also seek agreement from Congress to adjust U.S. laws and policies,

and the United States will work with friends and allies to adjust international regimes to enable full civil nuclear energy cooperation and trade with India, including but not limited to expeditious consideration of fuel supplies for safeguarded nuclear reactors at Tarapur. In the meantime, the United States will encourage its partners to also consider this request expeditiously. India has expressed its interest in ITER and a willingness to contribute. The United States will consult with its partners considering India's participation. The United States will consult with the other participants in the Generation IV International Forum with a view toward India's inclusion.

The Prime Minister conveyed that for his part, India would reciprocally agree that it would be ready to assume the same responsibilities and practices and acquire the same benefits and advantages as other leading countries with advanced nuclear technology, such as the United States. These responsibilities and practices consist of identifying and separating civilian and military nuclear facilities and programs in a phased manner and filing a declaration regarding its civilian facilities with the International Atomic Energy Agency (IAEA); taking a decision to place voluntarily its civilian nuclear facilities under IAEA safeguards; signing and adhering to an Additional Protocol with respect to civilian nuclear facilities; continuing India's unilateral moratorium on nuclear testing; working with the United States for the conclusion of a multilateral Fissile Material Cut Off Treaty; refraining from transfer of enrichment and reprocessing technologies to states that do not have them and supporting international efforts to limit their spread; and ensuring that the necessary steps have been taken to secure nuclear materials and technology through comprehensive export control legislation and through harmonization and adherence to Missile Technology Control Regime (MTCR) and Nuclear Suppliers Group (NSG) guidelines.

The President welcomed the Prime Minister's assurance. The two leaders agreed to establish a working group to undertake on a phased basis in the months ahead the necessary actions mentioned above to fulfil these commitments. The President and Prime Minister also agreed that they would review this progress when the President visits India in 2006.

The two leaders also reiterated their commitment that their countries would play a leading role in international efforts to prevent the proliferation of weapons of mass destruction, including nuclear, chemical, biological and radiological weapons.

In light of this closer relationship, and the recognition of India's growing role in enhancing regional and global security, the Prime Minister and the President agree that international institutions must fully reflect changes in the global scenario that have taken place since 1945. The President reiterated his view that international institutions are going to have to adapt to reflect India's central and growing role. The two leaders state their expectations that India and the United States will strengthen their cooperation in global forums.

Prime Minister Manmohan Singh thanks President Bush for the warmth of his reception and the generosity of his hospitality. He extends an invitation to President Bush to visit India at his convenience and the President accepts that invitation.”

Appendix 'B'

Refers to Chapter I Page 2, Para 1

India-US Joint Statement

02 March 2006, New Delhi

President George W. Bush and Prime Minister Manmohan Singh today expressed satisfaction with the great progress the United States and India have made in advancing our strategic partnership to meet the global challenges of the 21st century. Both our countries are linked by a deep commitment to freedom and democracy; a celebration of national diversity, human creativity and innovation; a quest to expand prosperity and economic opportunity worldwide; and a desire to increase mutual security against the common threats posed by intolerance, terrorism, and the spread of weapons of mass destruction. The successful transformation of the U.S.-India relationship will have a decisive and positive influence on the future international system as it evolves in this new century.

Reviewing the progress made in deepening the global partnership between the United States and India since their Joint Statement of July 18, 2005, the President and the Prime Minister reaffirm their commitment to expand even further the growing ties between their two countries. Consistent with this objective, the two leaders wish to highlight efforts the United States and India are making together in the following areas, where they have:

For Economic Prosperity and Trade

- (1) Agreed to intensify efforts to develop a bilateral business climate supportive of trade and investment by:

1. Welcoming the report of the U.S.-India CEO Forum, agreeing to consider its recommendations aimed at substantially broadening our bilateral economic relations, and directing the Chairs of the Indo-U.S. Economic Dialogue to follow up expeditiously with the CEO Forum;
 2. Endorsing the efforts of the U.S.-India Trade Policy Forum to reduce barriers to trade and investment with the goal of doubling bilateral trade in three years;
 3. Agreeing to advance mutually beneficial bilateral trade and investment flows by holding a high-level public-private investment summit in 2006, continuing efforts to facilitate and promote foreign direct investment and eliminate impediments to it, and enhancing bilateral consultations on various issues including tariff and non-tariff barriers to trade in goods and services, and preventing the illicit use of the financial system.
- (2) Sought to expand cooperation in agriculture by:
1. Launching the Knowledge Initiative on Agriculture with a three-year financial commitment to link our universities, technical institutions, and businesses to support agriculture education, joint research, and capacity building projects including in the area of biotechnology.
 2. Endorsing an agreed work plan to promote bilateral trade in agriculture through agreements that: lay out a path to open the U.S. market to Indian mangoes, recognize India as having the authority to certify that shipments of Indian products to the United States meet USDA organic standards, and provide for discussions on current regulations affecting trade in fresh fruits and vegetables, poultry and dairy, and almonds.
- (3) Reaffirmed their shared commitment to completing the WTO Doha Development Agenda (DDA) before the end of 2006, and agreed to work together to help achieve this outcome.

For Energy Security and A Clean Environment

- (1) Welcomed the successful completion of discussions on India's separation plan and looked forward to the full implementation of the commitments in the July 18, 2005 Joint Statement on nuclear cooperation. This historic accomplishment will permit our countries to move forward towards our

common objective of full civil nuclear energy cooperation between India and the United States and between India and the international community as a whole.

- (2) Welcomed the participation of India in the ITER initiative on fusion energy as an important further step towards the common goal of full nuclear energy cooperation.
- (3) Agreed on India's participation in Future Gen, an international public-private partnership to develop new, commercially viable technology for a clean coal near-zero emission power project. India will contribute funding to the project and participate in the Government Steering Committee of this initiative.
- (4) Welcomed the creation of the Asia Pacific Partnership on Clean Development and Climate, which will enable India and the U.S. to work together with other countries in the region to pursue sustainable development and meet increased energy needs while addressing concerns of energy security and climate change. The Partnership will collaborate to promote the development, diffusion, deployment and transfer of cleaner, cost-effective and more efficient technologies and practices.
- (5) Welcomed India's interest in the Integrated Ocean Drilling Program, an international marine research endeavour that will contribute to long-term energy solutions such as gas hydrates.
- (6) Noting the positive cooperation under the Indo-U.S. Energy Dialogue, highlighted plans to hold joint conferences on topics such as energy efficiency and natural gas, to conduct study missions on renewable energy, to establish a clearing house in India for coal-bed methane/coal-mine methane, and to exchange energy market information.

For Innovation and the Knowledge Economy

- (1) Emphasizing the importance of knowledge partnerships, announced the establishment of a Bi-National Science and Technology Commission which the U.S. and India will co-fund. It will generate collaborative partnerships in science and technology and promote industrial research and development.
- (2) Agreed that the United States and India would work together to promote innovation, creativity and technological advancement by providing a vibrant intellectual property rights regime, and to cooperate in the field of intellectual

property rights to include capacity building activities, human resource development and public awareness programs.

- (3) Agreed to continue exploring further cooperation in civil space, including areas such as space exploration, satellite navigation, and earth science. The United States and India committed to move forward with agreements that will permit the launch of U.S. satellites and satellites containing U.S. components by Indian space launch vehicles, opening up new opportunities for commercial space cooperation between the two countries.
- (4) Welcomed the inclusion of two U.S. instruments in the Indian lunar mission Chandrayaan-1. They noted that memoranda of understanding to be signed by ISRO and NASA would be significant steps forward in this area.
- (5) Welcomed the U.S. Department of Commerce's plan to create a license exception for items that would otherwise require an export license to end-users in India engaged solely in civilian activities.

For Global Safety And Security

- (1) Noted the enhanced counter-terrorism cooperation between the two countries and stressed that terrorism is a global scourge that must be fought and rooted out in every part of the world.
- (2) Welcomed the increased cooperation between the United States and India in the defense area, since the New Framework for the U.S.-India Defence Relationship was signed on June 28, 2005, as evidenced by successful joint exercises, expanded defence cooperation and information sharing, and greater opportunities to jointly develop technologies and address security and humanitarian issues.
- (3) Reaffirmed their commitment to the protection of the free flow of commerce and to the safety of navigation, and agreed to the conclusion of a Maritime Cooperation Framework to enhance security in the maritime domain, to prevent piracy and other transnational crimes at sea, carry out search and rescue operations, combat marine pollution, respond to natural disasters, address emergent threats and enhance cooperative capabilities, including through logistics support. Both sides are working to finalize a Logistics Support Agreement at the earliest.
- (4) Welcomed India's intention to join the Container Security Initiative aimed at making global maritime trade and infrastructure more secure and reducing

the risk of shipping containers being used to conceal weapons of mass destruction.

- (5) Reiterated their commitment to international efforts to prevent the proliferation of weapons of mass destruction.
- (6) Building on the July 2005 Disaster Relief Initiative, noted the important disaster management cooperation and their improved capabilities to respond to disaster situations.
- (7) Recognized the importance of capacity building in cyber security and greater cooperation to secure their growing electronic interdependencies, including to protect electronic transactions and critical infrastructure from cybercrime, terrorism and other malicious threats.

Deepening Democracy and Meeting International Challenges

- (1) Recalled their joint launch of the UN Democracy Fund in September 2005 and offered the experience and expertise of both Governments for capacity building, training and exchanges to third countries that request such assistance to strengthen democratic institutions.
- (2) Welcomed the decision of India and the United States to designate a representative to the Government Advisory Board of the International Centre for Democratic Transition (ICDT) located in Budapest to facilitate cooperative activities with ICDT.
- (3) Agreed that the Virtual Coordination and Information Centres set up in September 2005 should be further strengthened and a bilateral meeting aimed at developing a practical programme for utilization of its services be held soon.
- (4) Expressed satisfaction at the expedited USFDA drug approval processes that strengthen the combat against HIV/AIDS at the global level and encourage greater corporate participation to meet this challenge, including the establishment of the Indo-U.S. Corporate Fund for HIV/AIDS.
- (5) Agreed to expand bilateral efforts and continue cooperation in the area of medical research and strengthen technical capacity in food and drug regulation in India as well as address the concern on avian influenza, including agreement to reach out to the private sector, develop regional communications strategies, and plan an in-region containment and response exercise. The President

welcomed India's offer to host the International Partnership on Avian and Pandemic Influenza meeting in 2007.

- (6) Welcomed India's membership in the Coalition Against Wildlife Trafficking, a partnership through which we will collaborate in the fight against illegal trade in wildlife and wildlife parts; we also welcome the opportunity to strengthen longstanding work together on the conservation of wildlife through cooperation on park management and ecotourism. President Bush thanked Prime Minister Singh and the people of India for the warmth of their reception and the generosity of their hospitality.

Appendix 'C'

Refer to Chapter I, Page 2, Para 1

India's Separation Plan—Presented to the Parliament on 07 Mar 2006

The resumption of full civilian nuclear energy cooperation between India and the United States arose in the context of India's requirement for adequate and affordable energy supplies to sustain its accelerating economic growth rate and as recognition of its growing technological prowess. It was preceded by discussions between the two Governments, particularly between President Bush and Prime Minister Manmohan Singh, of the global energy scenario and the long-term implications of increasing pressure on hydrocarbon resources and rising oil prices. These developments led to the announcement in April 2005 of an Indo-US Energy Dialogue that encompassed the entire spectrum of energy options ranging from oil and gas to coal, alternative fuels and civilian nuclear energy. Through the initiation of a sustained dialogue to address energy security concerns, the two countries sought to promote stable, efficient, predictable and cost effective solutions for India's growing requirements. At the same time, they also agreed on the need to develop and deploy cleaner, more efficient, affordable and diversified energy technologies to deal with the environmental implications of energy consumption. India had developed proven and wide ranging capabilities in the nuclear sector, including over the entire nuclear fuel cycle. It is internationally recognized that India has unique contributions to make to international efforts towards meeting these objectives. India has become a full partner in ITER, with the full support of the US and other partners. India also accepted the US invitation to join the initiative on Clean Development Partnership.

Noting the centrality of civilian nuclear energy to the twin challenges of energy security and safeguarding the environment, the two Governments agreed on 18 July 2005 to undertake reciprocal commitments and responsibilities that would create a framework for the resumption of full cooperation in this field. On its part, the United States undertook to:

- Seek agreement from the Congress to adjust US laws and policies to achieve full civil nuclear energy cooperation.
- Work with friends and allies to adjust international regimes to enable full civil nuclear energy cooperation and trade with India, including but not limited to expeditious consideration of fuel supplies for safeguarded nuclear reactors at Tarapur.
- In the meantime, encourage its partners to consider fuel supply to Tarapur expeditiously.
- To consult with its partners to consider India's participation in ITER.
- To consult with other participants in the Generation IV International Forum with a view towards India's inclusion.

India had conveyed its readiness to assume the same responsibilities and practices and acquire the same benefits and advantages as other leading countries with advanced nuclear technology, such as the United States. Accordingly, India for its part undertook the following commitments:

- Identifying and separating civilian and military nuclear facilities and programmes in a phased manner.
- Filing a declaration regarding its civilian facilities with the IAEA.
- Taking a decision to place voluntarily its civilian nuclear facilities under IAEA safeguards, and
- Signing and adhering to an Additional Protocol with respect to civilian nuclear facilities.

Other commitments undertaken by India have already been fulfilled in the last year. Among them are:

- India's responsible non-proliferation record, recognized by the US, continues and is reflected in its policies and actions.

- The harmonization of India's export controls with NSG and MTCR Guidelines even though India is not a member of either group. These guidelines and control lists have been notified and are being implemented.
- A significant upgrading of India's non-proliferation regulations and export controls has taken place as a result of Weapons of Mass Destruction Act of May 2005. Inter-Ministerial consultations are ongoing to examine and amend other relevant Acts as well as framing appropriate rules and regulations.
- Refrain from transfer of enrichment and reprocessing technologies to states that do not have them and supporting international efforts to limit their spread. This has guided our policy on non-proliferation.
- Continued unilateral moratorium on nuclear testing, and
- Willingness to work with the United States for the conclusion of a multilateral Fissile Material Cut-Off Treaty.

The Joint Statement of 18 July 2005, recognized that India is ready to assume the same responsibilities and practices as other leading countries with advanced nuclear technology, such as the United States. India has an impeccable record in non-proliferation. The Joint Statement acknowledges that India's nuclear programme has both a military and a civilian component. Both sides had agreed that the purpose was not to constrain India's strategic programme but to enable resumption of full civil nuclear energy cooperation in order to enhance global energy and environmental security. Such cooperation was predicated on the assumption that any international civil nuclear energy cooperation (including by the US) offered to India in the civilian sector should, firstly, not be diverted away from civilian purposes, and secondly, should not be transferred from India to third countries without safeguards. These concepts will be reflected in the Safeguards Agreement to be negotiated by India with IAEA.

India's nuclear programme is unique as it is the only state with nuclear weapons not to have begun with a dedicated military programme. It must be appreciated that the strategic programme is an offshoot of research on nuclear power programme and consequently, it is embedded in a larger undifferentiated programme. Identification of purely civilian facilities and programmes that have no strategic implications poses a particular challenge. Therefore, facilities identified as civilian in the Separation Plan will be offered for safeguards in phases to be decided by India. The nature of the facility concerned, the activities undertaken in it, the

national security significance of materials and the location of the facilities are factors taken into account in undertaking the separation process. This is solely an Indian determination.

The nuclear establishment in India not only built nuclear reactors but promoted the growth of a national industrial infrastructure. Nuclear power generation was envisaged as a three-stage programme with PHWRs chosen for deployment in the first stage. As indigenous reactors were set up, several innovative design improvements were carried out based on Indian R&D and a standardized design was evolved. The research and technology development spanned the entire spectrum of the nuclear fuel cycle including the front-end and the back-end. Success in the technologies for the back-end of the fuel cycle allowed us to launch the second stage of the programme by constructing a Fast Breeder Test Reactor. This reactor has operated for 20 years based on a unique carbide fuel and has achieved all technology objectives. We have now proceeded further and are constructing a 500 MWe Prototype Fast Breeder Reactor. Simultaneously, we have launched design and development of reactors aimed at thorium utilization and incorporating inherent safety features.

Concepts such as grid connectivity are not relevant to the separation exercise. Issues related to fuel resource sustainability; technical design and economic viability, as well as smooth operation of reactors are relevant factors. This would necessitate grid connectivity irrespective of whether the reactor concerned is civilian or not civilian.

It must be recognized that the Indian nuclear programme still has a relatively narrow base and cannot be expected to adopt solutions that might be deemed viable by much larger programmes. A comparison of the number of reactors and the total installed capacity between India and the P-5 brings this out graphically:

Country	Number of Reactors	Total Installed Capacity (% of total production)
India	15	3.04 GWe (2.8%)
USA	104	(103 operational) 99.21 GWe (19.9%)
France	59	63.36 GWe (78.1%)
UK	23	11.85 GWe (19.4%)
Russia	31	21.74 GWe (15.6%)
China	9	6.602 GWe (2.2%)

(Source: Nuclear Energy Institute, Washington DC)

Another factor to be taken into account is the small capacity of the reactors produced indigenously by India, some of which would remain outside safeguards. Therefore, in assessing the extent of safeguards coverage, it would be important to look at both the number of reactors and the percentage of installed capacity covered. An average Indian reactor is of 220 MW and its output is significantly smaller than the standard reactor in a P-5 economy. The chart below illustrates this aspect:

Country	Most Common reactor	Number of such reactors
India	PHWRs 220 MWe	12
USA	69 PWRs and 34 BWRs. Most plants are in the range of 1000-1250 MWe	51 reactors in the range of 1000 MWe to 1250 MWe
France	PWRs of 900 MWe and 1300 MWe size	34 PWRs of 900 MWe and 20 PWRs of 1300 MWe
UK	No standard size.	AGR is 14 AGRs the most common in the range of 600-700 MWe
Russia	3rd Generation VVER-1000 PWRs and RBMK 1000 Light, Water Graphite Reactors	9 third Generation VVER-1000 PWRs and 11 RBMK 1000 Light Water Graphite Reactors
China	PWRs 984 MWe	Four

Source: Uranium Information Centre, Melbourne

The complexity of the separation process is further enhanced by the limited resources that India has devoted to its nuclear programme as compared to P-5 nations. Moreover, as India expands international cooperation, the percentage of its thermal power reactor installed capacity under safeguards would rise significantly as fresh capacity is added through such cooperation.

India's approach to the separation of its civilian nuclear facilities is guided by the following principles:

- Credible, feasible, and implementable in a transparent manner;
- Consistent with the understandings of the 18 July Statement;
- Consistent with India's national security and R&D requirements as well as not prejudicial to the three-stage nuclear programme in India;
- Must be cost effective in its implementation; and
- Must be acceptable to Parliament and public opinion.

Based on these principles, India will:

- Include in the civilian list only those facilities offered for safeguards that, after separation, will no longer be engaged in activities of strategic significance.
- The overarching criterion would be a judgement whether subjecting a facility to IAEA safeguards would impact adversely on India's national security.
- However, a facility will be excluded from the civilian list if it is located in a larger hub of strategic significance, notwithstanding the fact that it may not be normally engaged in activities of strategic significance.
- A civilian facility would therefore, be one that India has determined not to be relevant to its strategic programme.

Taking the above into account, India, on the basis of reciprocal actions by the US, will adopt the following approach:

(i) Thermal Power Reactors

India will identify and offer for safeguards 14 thermal power reactors between 2006 and 2014. This will include the 4 presently safeguarded reactors (TAPS 1&2, RAPS 1&2) and in addition KK 1&2 that are under construction. 8 other PHWRs, each of a capacity of 220MW, will also be offered. Phasing of specific thermal power reactors, being offered for safeguards would be indicated separately by India. Such an offer would, in effect, cover 14 out of the 22 thermal power reactors in operation or currently under construction to be placed under safeguards, and would raise the total installed thermal power capacity by MWs under safeguards from the present 19% to 65% by 2014.

ii) Fast Breeder Reactors

India is not in a position to accept safeguards on the Prototype Fast Breeder Reactors (PFBR) and the Fast Breeder Test Reactor (FBTR), both

located at Kalpakkam. The Fast Breeder Programme is at the R&D stage and its technology will take time to mature and reach an advanced stage of development.

(iii) Future Reactors

India has decided to place under safeguards all future civilian thermal power reactors and civilian breeder reactors, and the Government of India retains the sole right to determine such reactors as civilian.

(iv) Research Reactors

India will permanently shut down the CIRUS reactor, in 2010. It will also be prepared to shift the fuel core of the APSARA reactor that was purchased from France outside BARC and make the fuel core available to be placed under safeguards in 2010.

(v) Upstream facilities

The following upstream facilities would be identified and separated as civilian:

- List of those specific facilities in the Nuclear Fuel Complex, which will be offered for safeguards by 2008 will be indicated separately.
- The Heavy Water Production plants at Thal, Tuticorin and Hazira are proposed to be designated for civilian use between 2006-2009. We do not consider these plants as relevant for safeguards purposes.

(vi) Downstream facilities: The following downstream facilities would be identified and separated as civilian:

- India is willing to accept safeguards in the 'campaign' mode after 2010 in respect of the Tarapur Power Reactor Fuel Reprocessing Plant.
- The Tarapur and Rajasthan 'Away From Reactors' spent fuel storage pools would be made available for safeguards with appropriate phasing between 2006- 2009.

(vii) Research Facilities: India will declare the following facilities as civilian:

- (a) Tata Institute of Fundamental Research
- (b) Variable Energy Cyclotron Centre

- (c) Saha Institute of Nuclear Physics
- (d) Institute for Plasma Research
- (e) Institute of Mathematics Science
- (f) Institute of Physics
- (g) Tata Memorial Centre
- (h) Board of Radiation and Isotope Technology
- (i) Harish Chandra Research Institute

These facilities are safeguards-irrelevant. It is our expectation that they will play a prominent role in international cooperation.

Safeguards:

a) The United States has conveyed its commitment to the reliable supply of fuel to India. Consistent with the July 18, 2005, Joint Statement, the United States has also reaffirmed its assurance to create the necessary conditions for India to have assured and full access to fuel for its reactors. As part of its implementation of the July 18, 2005, Joint Statement the United States is committed to seeking agreement from the U.S. Congress to amend its domestic laws and to work with friends and allies to adjust the practices of the Nuclear Suppliers Group to create the necessary conditions for India to obtain full access to the international fuel market, including reliable, uninterrupted and continual access to fuel supplies from firms in several nations.

- (b) To further guard against any disruption of fuel supplies, the United States is prepared to take the following additional steps:
 - (i) The United States is willing to incorporate assurances regarding fuel supply in the bilateral U.S.-India agreement on peaceful uses of nuclear energy under Section 123 of the U.S. Atomic Energy Act, which would be submitted to the U.S. Congress.
 - (ii) The United States will join India in seeking to negotiate with the IAEA an India-specific fuel supply agreement.
 - (iii) The United States will support an Indian effort to develop a strategic reserve of nuclear fuel to guard against any disruption of supply over the lifetime of India's reactors.

- (iv) If despite these arrangements, a disruption of fuel supplies to India occurs, the United States and India would jointly convene a group of friendly supplier countries to include countries such as Russia, France and the United Kingdom to pursue such measures as would restore fuel supply to India.
- (c) In light of the above understandings with the United States, an India-specific safeguards agreement will be negotiated between India and the IAEA providing for safeguards to guard against withdrawal of safeguarded nuclear material from civilian use at any time as well as providing for corrective measures that India may take to ensure uninterrupted operation of its civilian nuclear reactors in the event of disruption of foreign fuel supplies. Taking this into account, India will place its civilian nuclear facilities under India-specific safeguards in perpetuity and negotiate an appropriate safeguards agreement to this end with the IAEA.

This plan is in conformity with the commitments made to Parliament by the Government.

Appendix 'D'

Refer to Chapter IV, Page 15

Nuclear Reactors In India And Fissile Material Production Estimates Table 1 – India's Operating Nuclear Power Reactors

Reactor	Type	<u>MWe each</u>	Start Year
Tarapur 1 & 2	BWR	150	1969
Rawatbhata 1	PHWR	90	1973
Rawatbhata 2	PHWR	187	1981
Kalpakkam 1 & 2	PHWR	155	1984-86
Narora 1 & 2	PHWR	202	1991-92
Kakrapar 1 & 2	PHWR	202	1993-95
Kaiga 1 & 2	PHWR	202	1999-2000
Rawatbhata 3 & 4	PHWR	202	1999-2000
Tarapur 4	PHWR	<u>490</u>	2005
Tarapur 3	PHWR	490	2006
Total (16)		3483	

Kalpakkam aka Madras / MAPS : Rawatbhata aka Rajasthan / RAPS

Table 2 – Nuclear Power Reactors – Under Construction

Reactor	Type	MWe each	Start Year
Kaiga 3 & 4	PHWR	202	2007
Rawatbhata 5 & 6	PHWR	202	2007, 08
Kudankulam 1 & 2	PWR	905	2007, 08
Kalpakkam P	FBR FBR	470	2010
Total (7)		2638	

(MWe – Actual power generation and not installed capacity)

Table 3 – Selected Indian Research Reactors

Reactor	Location	Start-up date	Function
Apsara	BARC	1956	Basic Research
Cirus	BARC	1960 Basic	Research and plutonium production
Dhruva	BARC	1985	- do -
Kamini	IGCAR	1996	Thorium R & D
Fast Breeder Test Reactor	IGCAR	1998	Breeder R & D

(Source for three tables – C Raja Mohan, *Impossible Allies – Nuclear India, United States and the Global Order*, pp 295-296, New Delhi: India Research Press, 2006. Tables 1 & 2 have been updated to reflect the correct status of TAPS 3, commissioned in May 2006).

Table 4 - Estimated Amounts of Uranium Required for Producing Weapons-Grade Plutonium at Various Capacity Factors in India's Research Reactors

Capacity%	Thermal Energy Output (MWD/yr)	Average Discharge Burn-up (MWD/MTU)	Fuel Req. (MTU/yr)	WGPu /yr (kg)
CIRUS Reactor Cirus (40 MW)				
50	7,300	665	11.0	6.7
50	7,300	1,000	7.3	6.4
50	7,300	1,400	5.2	6.1
70	10,220	665	15.4	9.4

70	10,220	1,000	10.2	9.0
70	10,220	1,400	7.3	8.7
Reactor Dhruva (100 MW)				
65	23,725	665	35.7	21.8
65	23,725	1,000	23.7	20.9
65	23,725	1,400	16.9	19.9
75	27,375	665	41.2	25.2
75	27,375	1,000	27.4	24.1
75	27,375	1,400	19.6	23.0

Note. Pu production is calculated at 1 kg/1000 MWD of thermal energy output multiplied by a correction factor based on burn-up level. MWD/yr - megawatt days per year, MTU/yr - metric ton of uranium per year, WGPu - weapons grade plutonium. (Source - <http://www.carnegieendowment.org>, Atoms for War? Ashley J Tellis, 2006 (page 19))

Appendix 'E'

Refers to Chapter IV Page 14

Indo-US Relations : A Historical Perspective

Early Gains

During the era of “atom for peace” and “space for development” in the early 1950s, the US actively promoted nuclear energy cooperation with India, building nuclear power reactors (Tarapur), providing heavy water for the CIRUS research reactor, and allowing Indian scientists to study at U.S. nuclear laboratories. Similarly, India’s space programme, including its early rockets and satellites, had considerable American inputs.

Cold War Era

With the deepening of the Cold War in the ensuing decades, every aspect of a nation’s activity was viewed against the great ideological division separating the planet into two heavily armed camps. India’s emergence as a powerful votary of non-alignment movement (NAM), her friendly relations with the erstwhile USSR, rejection of NPT 1968, and finally the ‘peaceful nuclear explosion’ in May 1974, was met with the strong response of the US. The Nuclear Non-Proliferation Act of 1978 imposed

tough new requirements for U.S. nuclear exports to other states. The US also created the Nuclear Suppliers Group as a direct response to India's test, halted nuclear exports of LEU for Tarapur reactor a few years later, and worked to convince other states to do the same. India stood effectively isolated from the rest of the world in the areas of nuclear commerce, advanced technology not limited to nuclear alone, and R&D. Technology denial regime brought in force since 1974 and further tightened after 1998 nuclear testing, continued unabated, seriously impeding - often throttling - India's advancement in nuclear, space, aviation, computer hardware and other hi-tech or dual-use technology. For well over two and a half decades, there was hardly any meeting ground, much less the meeting of minds between the two estranged democracies.

Winds of Change : Transformation of Relationship

In the 1990s, India-U. S. relations were particularly affected by the demise of the Soviet Union and India's resulting need to diversify its international relationships. Also significant were India's adoption of sweeping economic policy reforms beginning in 1991, a deepening bitterness between India and increasingly belligerent Pakistan over cross-border terrorism, and signs of a growing Indian concern with China as a potential long-term competitor. The end of the Cold War freed India-U.S. relations from the constraints of global bipolarity. After a series of intense interactions between Strobe Talbott, Dy. Secretary of State in the Clinton administration and Jaswant Singh (Dy. Chairman Planning Commission and later India's Foreign Minister), a marked improvement of relations began in the latter years of the Clinton administration. The US support of India's stand during Kargil operations was a clear indication of changing US views. India's swift offer of full support for U.S.-led counterterrorism operations in Afghanistan after September 2001 was widely viewed as reflective of change in India's foreign policy. The pace was accelerated after a November 2001 meeting between President Bush and Indian Prime Minister Atal Bihari Vajpayee, when the two leaders agreed to greatly expand U.S.-India cooperation on a wide range of issues, including security cooperation, joint military exercises, arms sales, counterterrorism, regional security, space and scientific collaboration, civilian nuclear safety, and broadened economic ties⁶⁶.

Strategic Partnership

Early key guiding principle of the Bush-Vajpayee agreement was to make the strategic partnership consistent with U.S. domestic laws, national security and foreign policy objectives, including compliance with international commitments. The 'Next Steps for Strategic Partnership (NSSP)', announced on 12 Jan 2004 by President George Bush, was meant to create an institutionalised framework for cooperation in the trinity of civilian nuclear, space programmes and high-technology trade. To this, "dialogue on missile defence" was also added. Progress in these areas of cooperation was predicated upon a series of "reciprocal steps" taken by the two countries. Qualitative improvement in relationship was slowly gathering momentum.

This framework was further refined to achieve "a decisively broader strategic partnership" with India, with its goal "to help India become a major world power in the 21st century". The strategic component of the package was meant to include regional security issues, expanding high-tech cooperation, export of dual-use goods and, more significantly, India's defence requirements, including defence co-production. This partnership led to emergence of two key issues - energy security and a greater role for India in a multi-polar world ⁶⁷.

The continuing dialogue, growing comfort level between the two countries and the desire to take the relationship to its logical conclusion, led to ultimately recognising inherent potentials of each other, which could be harnessed for mutual strategic benefit. Civil nuclear cooperation initiatives in 2005 marks a new beginning towards eventual realisation of this goal.

DEALING WITH CHINA IN THE COMING DECADE -ISSUES AND OPTIONS: INDIA-CHINA STRATEGIC PARTNERSHIP

By

Air Cmde Pradeep Singh

Synopsis

India and China are ancient civilizations with many commonalities : unique cultures, vast landmass, significant natural resources and huge populations. Both countries experienced colonial subjugation and both spent their initial post-liberalisation decades experimenting with planned economic systems inspired by the Soviet model of those times. Later both moved towards re-structuring and opening up of their economies to the forces of free market mechanisms.

China-India relations have run the entire gamut ranging from benign warmth in the 1950s, high tension in the 1960s and 1970s, rapprochement in the 1980s and readjustment in the 1990s. Presently, India and China are building a more substantive economic relationship and pursuing co-operation in international fora on environment, trade, human rights and economic issues. This Sino-Indian entente has the potential to redefine the world order towards a multipolar system. However, many are of the opinion that their bilateral relationship will be characterised more by competition than co-operation because neither power is comfortable with the rise of the other. Major contentious bilateral issues exist such as the border problem and China's support to Pakistan. Both countries realise the negative potential of these issues and are attempting to put the past behind and forge new relationships based on the emerging global strategic realities.

Thawing of relations between the two countries has resulted in a quadrupling of its bilateral trade. Though the bilateral trade is low in absolute terms, yet it is expected to reach \$ 25 billion by 2010. There is co-operation in energy matters between China and India with the two countries deciding to join efforts while seeking oil from Syria, Libya and Kazakhstan.

To further the co-operation between the two countries, the two governments designated 2006 as 'India-China friendship year'. India is seeking Chinese backing for its bid for a permanent seat on the United Nations Security Council and resolution of the long standing border dispute.

However, while pursuing closer ties with China, India has already entered into a “strategic partnership” with the U.S. India is aware that Washington has identified India as a counterweight to China and it is hoping to benefit from the readiness of the U.S. to provide it with support. India is convinced that it can do so without becoming dependent on or subordinate to the U.S.

China and India are on their way to becoming economic powerhouses and are asserting their global aspirations in this new century which in all likelihood will be an Asian century. The future of this Asian century will to a large extent depend upon the relationship between the two Asian giants China and India. The status of the relationship remains as complex as ever to decipher, despite some positive developments in the last few years. China has displayed remarkable consistency in its dealings with India, whereas India still needs to formulate a grand strategy based on its long-term interests both in peace and during hostilities, should it come to war. While China continues to engage India towards developing closer ties in all fields, in its strategic perceptions it continues to hold India as a competitive threat.

China and India today are in a position where both would benefit immensely by forging a bilateral strategic partnership. The security spillover would benefit entire Asia especially Central and South East Asia as well as result in obvious economic benefits for both countries. It will alter the global balance of power and shift its centre of gravity towards Asia. One of the direct benefits to India would be that the China-Pakistan strategic nexus will get diluted in time.

India should reciprocate Chinese professions of goodwill, enter into co-operation in trade and commerce and move towards strategic partnership in technological and military fields, but it should also simultaneously engage in diplomatic and strategic manoeuvres to keep China strategically hemmed-in in East Asia and Central Asia, thereby deflecting Chinese South Asian focus.

CHAPTER I

“While we must be guided by the experiences of the past, we need not be constrained by it. We must have an informed view of future possibilities and have the wisdom to prepare for all eventualities”.

Dr Manmohan Singh

(In his address at the launch of the *Indian Foreign Affairs Journal* on 15 Feb 06)

INTRODUCTION

An Overview

India and China have many commonalities; long histories, ancient civilizations, unique cultures, vast landmass, huge populations, and significant natural resources. Both countries have had their share of experience in colonial subjugation, and both spent their initial post-liberation decades experimenting with planned economic systems inspired by the anti-capitalist, Soviet model of those times. Later, both moved towards re-structuring and opening up of their economies to the forces of free market mechanisms. India-China relations have experienced profound upheavals over the past five decades, ranging from benign warmth in the 1950s and hyper-tension in the 1960s and 1970s, to rapprochement in the 1980s and readjustment in the 1990s. Presently, while major contentious bilateral issues like the border problem and China's support to Pakistan continue to evade mutually acceptable solutions, pragmatic policy analysts believe that despite divergent security perceptions and competitive interests, both countries can seize the opportunity to forge mutually beneficial bilateral trade, promote interests on issues such as human rights, counter-terrorism, a non-discriminatory trade regime and a durable strategic partnership to redefine the world order towards a multi-polar structure.

Since 1978, China has embarked on a fundamental process of reform and modernization that has resulted in an unprecedented rate of economic development. With an annual GDP growth of over 9 per cent, China is poised to become one of the world's largest economies in the next decade. It uses 40 per cent of the world's concrete and 25 per cent of the world's steel. The Chinese Government continues to pour resources into creating world class infrastructure and the world's largest army of industrialists. China has 17million university and advanced vocational students. China produces 325,000 engineers annually these days. In 2004 it spent US\$ 60 billion on research and development alone.¹

India also started an economic reform process in 1991 which opened its markets and put India on the upward trajectory. Beginning the new century on a very positive note the Indian economy has also broken its colonial and socialistic links and moved into the 8 per cent GDP growth area. Both these Asian giants have high ambitions. In the near future they both aim to do everything in their power to progress their economic growth not only to make themselves the dominant powers in Asia but also big players in the world. To continue progressing at a

similar pace in the coming decade also, both China and India need to invest heavily in all possible measures which will ensure stability not only in the two respective countries but also in the neighbouring region.

Impact of Globalization

The positive impact of globalization is another key factor dictating the interaction between India and China. Globalization and its inherent growing interconnectedness are reflected in the expanded flows of information, technology, capital, goods, services and people throughout the world. This has resulted in an overarching interaction mega trend that is substantially shaping all the other major trends in the world.

The world economy is likely to continue growing impressively. By 2020, it is projected to be about 80 per cent larger than it was in 2000, and the average per capita income will become roughly 50 per cent higher.² The greatest benefits of globalization will accrue to countries and groups that can access and adopt new technologies. India and China are well positioned to become technology leaders. Most forecasts upto the year 2020 and beyond continue to show higher annual growth for developing countries than for high income ones. Countries such as China and India will be in a position to achieve higher economic growth than Europe and Japan, whose aging work forces may inhibit their growth. Given its enormous population and assuming a reasonable degree of real currency appreciation, the dollar value of China's GNP may be the second largest in the world by 2020³. For similar reasons, the value of India's output could match that of a large European country.

Cooperation or Competition

The likely emergence of China and India as new major global players, similar to the advent of a united Germany in the 19th century and a powerful United States in the early 20th century, will transform the geopolitical landscape, with impacts potentially as dramatic as those in the previous two centuries. In the same way that commentators refer to the 1900s as the "American Century," the 21st century may be seen as the time when Asia, led by China and India, comes into its own. A combination of sustained high economic growth, expanding military capabilities, and large populations will be at the root of the expected rapid rise in the economic and political power for both countries. Because of the sheer size of China's and India's populations, which is projected by the US Census Bureau to be 1.4 billion and almost 1.3 billion respectively by 2020, their standard of living

need not approach Western levels for them to become important economic powers. Barring an abrupt reversal of the process of globalization or any major upheavals in these countries, the rise of these new powers is a virtual certainty. Yet how China and India exercise their growing power and whether they relate cooperatively or competitively to each other and to other powers in the international system are key questions.

India and China are building a more substantive economic relationship and pursuing cooperation in international fora on environment, trade, human rights, and economic issues. This developing Sino-Indian entente has led some to argue that it has the potential to radically restructure not only Asian geopolitics but that of the whole world. However, many are of the opinion that their bilateral relationship will be characterized more by competition than cooperation, because the issues that bind them are also the issues that divide them. Neither power is comfortable with the rise of the other. Each perceives the other as pursuing hegemony and entertaining imperial ambitions.

Also there is the problematic issue of the India-China border settlement. China has resolved its border problems with all its neighbours except India. Despite more than two decades of negotiations, an acceptable solution is nowhere in sight. China's active military and political support to its age old ally Pakistan is another sore area. These two issues, especially the former, also contain the potential to derail the fast growing relations. But both countries realize the negative potential of these issues and increasingly down play the requirement of an early solution of the border issue and reject the idea of a zero sum game involving Pakistan.

The contemporary scene in China-India relations is that both nations are engaged in attempting to put the past behind and forge new relationships based on the emerging global strategic realities. Trade and economic ties have grown exponentially in the last five years and the leaders of both countries have expressed determination to find solutions to the China-India boundary dispute which has spoilt their relations in the past.

Hypothesis

In the last few decades many countries have put aside bitter pasts and distrust, to forge new partnerships. After the end of World War II the US completely altered its relationship with its enemies Germany and Japan. Nearer in time, after the collapse of the erstwhile Soviet Union, USA and Europe have completely transformed their equation with Russia.

Following this same pattern and logic, it is possible that both China and India may also cement their emerging new relationship into a strategic partnership in the coming decade.

Aim

This paper studies whether there is a case for India and China entering into a strategic partnership in the coming decade to further mutual growth and progress.

Scope

The subject is examined mainly from the Indian perspective rather than a global perspective, so as to keep the focus on Indian national interests. It is examined in the time period till 2020.

Layout of the Thesis

The paper is laid out in the following manner :

- (a) Introduction
- (b) India-China Economic Engagement
- (c) India-China Security Environment
- (d) China's Foreign Policy Choices
- (e) Strategic Partnership Benefits
- (f) Conclusion

CHAPTER II

INDIA-CHINA ECONOMIC ENGAGEMENT

China's Economic Scenario Overview

China is already the second largest economy in the world after the US, accounting for close to 12% of all world economic activity.⁴ This is based on real PPP terms that take into account price differences in countries. Its GDP (in PPP terms) in 2005 is estimated to be US\$ 8.182 trillion and GDP per capita US\$ 6300.⁵ China's huge depth in low unit labour cost supply gives it an unparalleled economic advantage in labour intensive manufacturing. With average unit labour costs in manufacturing typically just 5% of that of the US, there is no competition. India is the only real competitor for China in the long term, but is at least five years behind despite more recent strides in

economic reform and export. China now exports more to Japan and the US than either of these two largest advanced economies do to each other. China (including Hong Kong) has overtaken Japan as the largest importer from the Asia region and is on course to overtake Japan's share of world trade within the next few years to reach around 6% of total; this is a fourfold increase in share of world trade since China first embarked on reform and western market opening in 1978.

The Chinese economy grew at a highly impressive rate of 9.4% per year during the period 1978-2003. Despite the 1997 Asian financial crisis and issues like global economic recession, SARs etc, China's economy continued a sizzling 9.7% growth in 2004 and 9.9% in 2005⁶. China's exports have also been growing very rapidly, averaging 16% per annum. China is now the world's fourth largest exporter after the United States, the EU and Japan. As regards FDI, China has since the early 1990s become the world's most favoured destination. By mid-2004, China had attracted a total of US\$ 535 billion in FDI. On account of its strong external balance, by mid-2004 China's total foreign exchange reserves had soared to US\$ 470 billion to become the world's second largest. Another US\$ 60.3 billion were added in 2005 and US\$ 14.25 billion in Jan to Mar 06.⁷ In terms of PPP, the Chinese economy today is already the world's second largest after the United States. Meanwhile, Beijing continues to focus on moving from being a big economy to a stronger nation. China-ASEAN free trade is already under way; other FTAs that are in the pipeline include China-Australia, China-New Zealand, China-India, China-Pakistan and China-Chile as well as recent initiatives with Iceland, Japan, Korea and Thailand. All these make China a very strong and desirous trading partner.

However, the booming domestic economy, rapid urbanization, increased manufacture and export processing are increasing the country's demand for oil and natural gas, industrial materials, foreign capital and technology. Twenty years ago, China was East Asia's largest oil exporter. Now it is the world's second largest importer; in 2004 China alone accounted for 31% of global growth in oil demand. Now that China is the workshop of the world, its hunger for electricity and industrial resources has soared. China's combined share of world's consumption of aluminium, copper, nickel and iron ore more than doubled within only ten years from 7% in 1990 to 15% in 2000; it has now reached about 20% and is likely to double again by 2010.⁸ Such requirements make it absolutely necessary for China to promote and maintain a peaceful global order which then requires following a cooperative foreign policy.

India's Economic Scenario Overview

India, with a GNP of US\$ 570.8 is already the twelfth largest economy in the world and with its sound institutional framework and its rapidly growing services sector will soon emerge as the new regional economic attraction.⁹ A comparison of the main economic parameters of India and China, as brought out by Mohan Guruswamy of Centre for Policy Alternatives, New Delhi, during his lecture at the National Defence College on 09 Mar 06 are placed at Appendix A to this paper.

Previously, the world's attention was directed mainly towards developing and securing trade relationships with China. However, this focus is already changing, shifting slowly but steadily towards India. India's economic growth has been the only one to come close and even surpass (the beginning of 2004) that of China. Since then, there has been steady growth. ESCAP had predicted growth rates in the range of 7 to 7.5% in the last two years of the 10th five-year plan (2005-07), supported by a growth rate of 4% in agricultural value added, 8% in industry and 8.5% in services.¹⁰ This by itself has been surpassed with India having achieved a GDP growth of 8.5% in 2003-2004¹¹ and an estimated growth of 8.1% in 2005-06¹². Little doubt exists that India is on track to become a very desirable trade partner for the future. With a market of over 1 billion people, the world's largest democracy is developing into an economy built on sound macroeconomic foundations. It boasts a highly educated and skilled work force, superior levels of technological advancement and information technology, scientific and medical expertise, and improving levels of managerial proficiency. The pace at which bilateral agreements of various countries with India have recently proliferated suggests that it is just a matter of time before major attention shifts to India. In the past, India has been rather reserved in terms of participating in bilateral negotiations, especially considering its market potential. But it now appears that this is fading rapidly. In the South East Asia region, India has already signed FTAs with Sri Lanka and Thailand, and is a leading party to the establishment of the SAFTA. India has signed a framework agreement with ASEAN to create a free-trade area in the next ten years and a Comprehensive Economic Cooperation Agreement called CECA with Singapore that will specifically address issues relevant to trade, investment, technology, education and tourism development. And perhaps most significantly, studies are under way to analyze the potential of an India-China FTA, with both parties set to sign a Bilateral Investment Promotion and Protection Agreement called BIPA.¹³

For many countries, especially South East Asian countries, India not only presents benefits specific to trade, but with recent tension mounting concerning the growing regional domination of China, a strong Indian economy could certainly help bring both stability and balance to Asia in general and South and South East Asia in particular. Such a scenario is also seen very positively by the other big players, especially Europe and the United States.

India is a full-fledged democracy built on sound macroeconomic fundamentals and has created an economy characterized by high growth rates, low inflation and a stable domestic currency. This, along with increasingly liberalized investment policies, has attracted substantial inflows of foreign investment in recent years. Shri Montek Singh Ahluwalia, Deputy Chairman of the Planning Commission, had announced that currently the FDI is US\$ 10 billion and is likely to double by 2010- 11.¹⁴ This, coupled with a high proportion of university educated and English speaking graduates is creating the ultimate economic partner for the next century. And, as manufacturing-sector profits eventually decline with growing commoditization, eroding the value of China's industrial dominance, India, with its sound institutional framework and its rapidly growing services sector, will soon emerge as the new regional economic attraction.

India China Energy Agreement

The question of cooperation versus competition between the two countries is a favourite topic of discussion these days. This is best indicated in the recent developments in the energy sector. In January 2006 China and India signed a slew of cooperation pacts in the hydrocarbon sector to ensure secure energy supplies for both the countries¹⁵. In the "Memorandum for Enhancing Cooperation in the Field of Oil and Natural Gas" signed by Mr Mani Shankar Aiyar, the then Indian Petroleum and Natural Gas minister, and Mr Ma Kai, director of China's National Development and Reform Commission, both sides identified key areas for partnerships. These include upstream exploration and production, refining and marketing of petroleum products and petrochemicals, research and development, conservation, and promotion of environment friendly fuels. The agreement also allows trading in oil and joint bidding in third countries that will help both nations reduce the burden on their exchequers. During his visit Mr Aiyar indicated that India looks upon China not as a strategic competitor but as a strategic partner and both China and India recognize that unbridled rivalry between them only results in the seller of the assets being benefited irrespective of which of the two countries wins the bid. Therefore, India and China needed to cooperate

in this sector and neither India nor China needs to purchase its energy security at the expense of the other. The agreement calls for the establishment of a joint committee to monitor implementation and facilitate dialogue and information sharing not only in purchasing energy but in the full spectrum of the hydrocarbon chain. Besides the memorandum, five commercial agreements were also signed between Indian and Chinese firms in the recent past.

In his public appearances while in China, Mr Aiyar repeatedly argued that China and India, both of which have a burgeoning need for oil and natural gas imports, have a common interest in seeking to lessen competition for energy supplies and in working together to discover and develop new energy supplies. Mr Aiyar observed that China and India are in a similar position in the energy sector since both have substantial coal resources but are highly dependent on imported oil and gas, thus the need for cooperation between them in bidding for oil resources in third countries.

India had been pursuing energy production and exploration projects in more than 50 countries, often in competition with Beijing. On several occasions India had lost significant bids to China, including in Angola, Kazakhstan, Ecuador and Myanmar, whereas, Chinese oil firms, landed up over paying for these assets. In August 05 China paid US\$ 4.18 billion to acquire Canadian oil company 'PetroKazakhstan' when India's ONGC had bid US\$ 3.9 billion.¹⁶ It was clear that competition for energy resources, if not checked, could enflame relations between the two rising powers and endanger their quest for further growth.

Following the MoU, State owned Chinese and Indian energy companies have already launched several joint exploration ventures, including in Russia, Iran and Sudan, with China generally taking the larger stake. Recently a further step toward Sino-Indian energy cooperation was taken when China's CNPC and India's ONGC, each country's largest state owned oil company respectively, mounted a successful US\$ 573 million joint bid to acquire Petro-Canada's 37% stake in the Al-Furat Oil and Gas fields in Syria.¹⁷

The India-China energy talks complement India's efforts to develop an Asian oil and gas grid. This grid, which is intended to ensure reliable delivery networks and "energy security" for Asia, was formally inaugurated at a conference held in New Delhi in Nov 05, which brought together ministerial representatives of the North and Central Asian energy producing countries, including Russia, Uzbekistan, Kazakhstan and Azerbaijan, and their counterparts from the principal Asian consumer nations like China, Japan, South Korea and India.

China-India Economic Engagement

Notwithstanding the cooperation in the energy sector, nothing perhaps compares to China-India bilateral trade when it comes to evaluating the nature and significance of their post - 1962 rapprochement. Starting from an extremely slow and intermittent pace with an annual turnover of only a few million dollars in the 1980s to reaching a target of over US\$ 10 billion by 2005, the bilateral trade has gradually come to occupy the centre-stage of China-India economic engagement.¹⁸ Especially since the early 1990s, bilateral trade had come to be the most visible part of the growing interactions and in the post-nuclear equation since 1998, it has come to be recognized as the backbone of China-India CBMs which is expected to create the necessary atmospherics and critical mutual trust to tackle the long-standing political problems. The pace of this engagement has been particularly shaped by the opening up of economic reforms and the consequent search for new opportunities and new partners where both India and China have tried to evolve holistic policies integrating trade to the political and diplomatic initiatives. To cite some examples of China's using trade as its diplomatic tool, China's trade boom with other problematic neighbouring countries like Japan and South Korea, have gone up respectively from US\$ 16.8 billion and US\$ 0.7 billion for 1990 to a whopping US\$ 99.6 billion and US\$ 36.2 billion for 2002, making them each other's most valued partners. For the same period by comparison, the share of China's trade with India grew only from US\$ 0.2 billion for 1990 to US\$ 5 billion for 2002, though it has increased much faster since then reaching US\$ 7.6 billion for 2003 and US\$ 13 billion for 2004.¹⁹

Even though China-India trade is proceeding satisfactorily, yet it does not compare anywhere close to China's expanding trade relations with countries of ASEAN, and a lot remains to be desired in China-India economic relationship. However, in South Asia, China's trade with India remains the only one which is most balanced. This augurs well for its continued growth in coming times. Besides, the two countries also represent the two largest and fastest growing economies and their physical proximity makes their engagement inevitable.

Future of Bilateral Trade

The most critical feature of China-India trade remains its much debated mutually competitive or complementary nature. Prima facie, in the context of China's economic engagement with South Asia, while China continues to enjoy huge trade balance vis-à-vis most other smaller states of the South Asian region, it is only China-India trade that has remained China's most balanced trade in South

Asia, thus reflecting strong fundamentals that promise continued rapid pace in mutual cooperation. Economic reforms have created stronger factors in both economies. Both also require to ensure stable economic interactions as also new dynamism in their trade relations. The similar high rate of growth today brings China and India closer together to evolve similar strategies for development and portends greater cooperation.

Trends in China-India GDP Growth Rates

Similarly, FDI has been another indicator of rapid growth, creating newer avenues for China-India trade and commerce. According to the UNCTAD annual report titled “The World Investments 2004,” India has clocked an FDI of US\$ 4.3 billion for 2003 which is a 25% increase over the preceding year. The same report also shows China’s FDI at US\$ 53.3 billion and this does not include the FDI for Hong Kong which is listed as a separate entry (second highest in Asia) at US\$ 13.6 billion for 2003.²⁰ This flourishing FDI has also created strong trends in favour of encouraging mutual investments between China and India.

In the wake of India’s nuclear tests of May 1998, China, exercising its authority as the President of the UN Security Council at that time, had actively sought and coordinated the adoption of UN Security Council Resolution 1172(UNSCR 1172) condemning the India and Pakistan Nuclear Tests.²¹ In its aftermath the Indian overall foreign trade had actually slid from US\$ 86.86 billion for 1997-98 to US\$ 81.84 billion for 1998-99. However, this general slide was not proportionally reflected in China-India bilateral trade, though China was perhaps the one most directly affected party from India’s nuclear tests. If anything, the bilateral trade had still managed to register marginal growth rate for that year. As things happened, India’s foreign trade was to soon pick up a steady momentum and cross the US\$ 100 billion mark for 2001. And China-India trade was, and has since been, one major contributor to this general increase. This perhaps is one of the strongest indicators of the soundness of bilateral trade between the two countries and its future.

In absolute terms, though, the magnitude of bilateral trade is comparatively low, with China’s trade with India accounting for only one per cent of its total foreign trade, and India’s trade with China accounting for about five per cent of its total foreign trade for 2003. However, it is the political nature of China-India bilateral trade that again makes it so significant to be measured beyond purely economic formulations of statistics and profits. Especially, the period since the

two sides signed their trade protocols in 1984 granting each other the MFN status; their mutual trade has witnessed faster growth than their individual average growth rates. During the last five years alone, China-India bilateral trade has quadrupled and the expectation to reach US\$ 25 billion by 2010 appears increasingly credible. Moreover, with the return of Hong Kong to mainland China since July 1997, and following the return of Macao in December 1999, India's trade with Hong Kong and Macao (as also India's rising trade with Taiwan and in the case of an eventual unification of Taiwan) together promise to make Greater China potentially India's largest trading partner and one of its own kind.

CHAPTER III

INDIA-CHINA SECURITY ENVIRONMENT

Seeking Great Power Status

China's desire to gain "great power" status on the world stage is reflected in its greater economic leverage over countries in the region and elsewhere, as well as its steps to strengthen its military. East Asian states are adapting to the advent of a more powerful China by forging closer economic and political ties with Beijing, potentially accommodating themselves to its preferences, particularly on sensitive issues like Taiwan. China is continuing to strengthen its military through developing and acquiring modern weapons, including advanced fighter aircraft, sophisticated submarines and increasing numbers of ballistic missiles. China will overtake Russia and others as the second largest defence spender after the United States over the next two decades and will be, by any measure, a first-rate military power.²² If China's economy takes a downward turn, regional security would weaken, resulting in heightened prospects for political instability, crime, narcotics trafficking, and illegal migration.

Like China, India is also becoming an economic magnet for the region, and its rise is impacting not only South Asia but also North, Central and West Asia, and other countries of Southeast Asia. India seeks to bolster regional cooperation both for strategic reasons and because of its desire to increase its leverage with the West, including in such organizations as the WTO. As India's economy grows, governments in Southeast Asia, that is, Malaysia, Singapore, Thailand, and others would move closer to India to help build a potential geopolitical counterweight to China. At the same time, India seeks to strengthen its ties with countries in the region without excluding China, since the Chinese-Indian bilateral trade is expected to rise rapidly from its current small base of US\$ 7.6 billion, according to Goldman Sachs and other experts.²³

China seeks to acquire and establish a favourable security environment that is conducive to continued economic growth and its military modernization. However, the key notion behind China's overall national objectives can be found in its "Comprehensive National Power" concept.²⁴ The CNP asserts that military modernization is the key in protecting China's security and unity, as well as building a prosperous society. China would like to challenge the hegemony of USA, but is a realist, and acutely aware that such a situation is many decades away. Therefore, for the time being it must continue building its CNP while nursing its chief goal of reunification of Taiwan. It is acutely aware that USA would take all measures to destabilize China, if China were to further the reunification process aggressively. Therefore, it will bide its time till it is able to challenge USA, Japan and others. Meanwhile, it continues to publicly express its desire to resume peace talks with Taiwan.²⁵ The border problem with India is an important issue, but one which can wait. Growing influence of the USA in the oil rich Central Asian Republics also needs to be checked, since it impinges directly on China's energy security concerns. Growing minority unrests in Mongolia and within some of its own provinces is also of some concern. While China has already established a strong influence in South East Asia, it must counter the same from other contenders including USA and India.

In short, China's primary strategic objectives in the international arena are driven by the following requirements:²⁶

- (a) Maintaining an external environment conducive to the pursuit of economic reform, opening to the outside world, and economic construction.
- (b) Preserving or expanding China's strategic independence and leverage in a complex multi-polar environment.
- (c) Furthering its efforts to reunify Taiwan with the nation.
- (d) Strengthening its ability to defend against external pressures or attacks, emerging from highly complex and uncertain, yet arguably less immediately threatening security environment.

Energy and Security

China and India, which lack adequate domestic energy resources, will have to ensure continued access to outside suppliers; thus, the need for energy will be a major factor in shaping their foreign and defence policies, including expanding

naval power. Experts believe China will need to boost its energy consumption by about 150 % and India will need to nearly double its consumption by 2020, to maintain a steady rate of economic growth.²⁷ Beijing's growing energy requirements are likely to prompt China to increase its activist role in the world, that is, in West Asia, Africa, Latin America, and Eurasia. In trying to maximize and diversify its energy supplies, China worries about being vulnerable to pressure from the United States, which Chinese officials see as having an aggressive energy policy that can be used against Beijing. For more than ten years, Chinese officials have openly asserted that oil production from Chinese acquired firms provides greater stability and safety than relying on direct purchases from foreign suppliers. Chinese firms are therefore directing investment in projects in the Caspian region, Russia, West Asia, Africa and South America in order to secure more reliable access to oil. India too is following a similar route.

Improving India – China Relations and the US Angle

Thawing of relations between the two countries has already resulted in co-operation on energy matters between China and India. The two countries have decided to join efforts while seeking oil from Syria, Libya and Kazakhstan.²⁸ Shortly after the 2003 US invasion of Iraq, India launched a concerted drive to repair relations with China. The first-ever Sino-Indian Strategic Dialogue was held in January 2005 to deal with common issues regarding globalization, energy security and the democratization of international relations.

In April 2005, the Chinese Premier Wen Jaibao visited India and the two countries announced a “strategic cooperation” to make advances in economic cooperation and trade issues. Both also agreed to strive for closer political initiatives and to engage in joint exploration for oil and gas in other countries. The same month the first China-India Business Cooperation Conference was held to expand the current bilateral trade of US\$ 14 billion per year. China is already India's second-largest trading partner.

To further the cooperation between the two countries, the two governments designated 2006 as “India-China friendship year”. India is also seeking Chinese backing for its bid for a permanent seat on the United Nations Security Council and resolution of the long-standing border dispute. India is also taking steps to join the Chinese and Russian led Shanghai Cooperation Organization, through which Moscow and Beijing are seeking to counter US influence in Asia, especially in Central Asia.

However, while pursuing closer ties with China, India has already entered into a “strategic partnership” with the US. India is acutely aware of the fact that Washington has identified India as a potential counter-weight to China, and it is hoping to benefit from the readiness of the US to provide it with support. India is convinced, however, that it can do so, without becoming dependent on, or subordinate to the US.

To allay Chinese fear on this account, India’s foreign secretary Mr Shyam Saran, during his visit to China had stated that China and India are too big to contain each other or be contained by any other country, and that the perception that the two countries might be seeking the containment of each other is outdated. He had said that India would be happy to work closely with China towards the progressive realisation of an East Asian Community and eventually, a larger Asian Economic Community.²⁹

China is apprehensive of United States unilateralism which impinges in various ways on China’s core interests in its contiguous regions of East Asia, South East Asia and South Asia, and West Asia and Central Asia. Additionally, NATO’s eastward expansion and United States military presence in Central Asia limits China’s options in this critical region. It also implies strategic hemming-in of China. United States new “National Security Strategy” of unilateral pre-emptive military operations and military intervention on humanitarian grounds are worrisome for China in relation to Taiwan and Tibet. With Russia finding more convergence with the United States, China is bereft of any strategic counter-weight against the United States.

On the other hand, India’s security environment today is distinguished by the fast growing India-US strategic, economic and military ties. Despite the pro-Pakistan policy, the United States has Pakistan in a strategic bind which is dissuasive of Pakistan’s confrontational stances against India. With political and economic dialogue with China on a major upswing, China as an immediate military threat also seems to be receding. This results in the Pakistan-China collusive threat being no longer quite credible.

Comparatively, the picture that emerges is that India has less to fear its security environment than China. While China’s main strategic concern is the United States and its unilateralism, India logically has no strategic concerns emanating from the United States. In fact both are engaged in evolving a strategic partnership despite the irritant of the Pakistani factor in US policies.

China-US Security Issues

As a permanent member of the United Nations Security Council, Beijing gave half-hearted support to the war against al-Qaeda and the Taliban in Afghanistan. Beijing also professes support for the long-term war on terrorism, believing that it faces its own internal Islamic separatist terrorist threat. With respect to Iraq, while Beijing supported United Nations Resolution 1441, the Chinese leadership made it clear that it did not support the use of force in Iraq; but French intransigence permitted Beijing to avoid taking a position in any subsequent vote. Over Taiwan, the United States and China disagree about the question of the island republic's sovereignty and about American arms sales under the Taiwan Relations Act; but it is fair to say that neither Beijing nor Washington wants to see the question of Taiwan's relationship to the communist government of China resolved by force. Also, neither the United States nor China wants to see a war on the Korean Peninsula.

However, there are still a number of areas of serious disagreement between China and the U.S. How the differences between Taiwan and China are to be resolved is a major area where Washington and Beijing disagree. China refuses to renounce the use of force to bring Taiwan under its control. This is the most volatile policy difference between the U.S. and China. Beijing's expansive interpretation of its own territory is a condition that can lead to conflict, as demonstrated by the confrontation over how China handled the passage through international airspace by a United States EP-3 reconnaissance aircraft in April 2001. China's insistence in its own territorial laws, that it controls airspace and the sea out to 200 miles, the Exclusive Economic Zone, is an interpretation of the Law of the Sea that the United States cannot allow to stand, otherwise the right of free passage of vessels and aircraft for free trade will be impeded. Moreover, China's expansive claims in the East and South China Sea clash with those of Japan, Indonesia, Malaysia, the Philippines, Brunei and Vietnam. China is building the type of military to back up these claims with credible force and to deny the United States the flexibility to operate its own forces in these areas.

Chinese Perceptions of India and Its Role in South Asia

Because of its big power dream and in view of the new emerging relationships between China-India, China-US and India-US, many experts now believe that in the larger context, China wants peace and stability in Asia. Therefore, the Chinese view is slowly turning to accommodate the facts that:

- (a) India deserves world power status.
- (b) India is the dominant power in South Asia. However, the Chinese would want that India's power be benignly used in relation to its smaller neighbours.
- (c) Improving India-Pakistan relations pose fewer dilemmas to China.

With respect to India's candidature as Permanent Member of the UNSC, while China is yet to take an official position, many believe that eventually India's UNSC membership may be challenged by Pakistan or Bangladesh, but unlikely by China. If all Asia-Pacific countries accept India's candidature, China is unlikely to impede it.³⁰

India–China Border Settlement : A Major Challenge

Despite more than two decades of dialogue, the India–China border issue continues to simmer without a concrete solution in sight. Some confidence building measures and exchange of maps of some sectors has been accomplished but the progress has been extremely slow. Progress has been made in terms of finalizing the text for laying down the “Parameters and Guiding Principles for the Settlement of the India-China Boundary Question”³¹ but that is where the matter rests. In contrast to the fanfare in opening up of “Nathu La” pass on 06 July 06, the last round of talks ended in Beijing on 01 July 06, once again without much progress but with promises to continue the talks.³²

Many Indian observers feel that China is dragging the talks since it is in the more commanding position. On the other hand it is also a fact that India is not really in a position to exert more pressure, therefore the only option is to continue the dialogue and the CBMs with the hope that closer economic and political ties will pave the way for better understanding of each others' view. Both sides have recognised that both would have to make substantial compromises from stated positions, and imaginative and innovative steps would be required. For example the Parliament Resolution of 14 Nov 1962 that pledged that “India will recover every inch of territory occupied by the Chinese, however long and difficult the struggle may be,” would need to be revisited by the present and future Indian Governments.

The fact is that in 1956, China built its strategic highway in Aksai Chin linking Sinkiang and Tibet, and half a century down the line it is not likely to give away such a strategic territory.³³ Even though the problem remains far from a

solution, it should also be noted that the India-China border, barring three local incidents during the last 35 years, has remained peaceful.³⁴ China and India are now devoting efforts in the direction towards building up closer ties in trade and economy with the aim that these would lead to a mutually acceptable solution in future.

Pakistan Factor in India-China Relations

Apart from the border dispute the most contentious issue for India is China's strategic relationship with Pakistan. India has always viewed the Sino-Pakistani relationship, particularly China's nuclear and missile assistance to Pakistan, as part of China's strategy to contain India's influence in South Asia. Over the years China and Pakistan have developed close ties in the political and military spheres, including significant arms transfer as well as nuclear and missile assistance. Traditionally, this assistance has been motivated by a number of considerations, the key elements being to promote a militarily capable Pakistan that would serve as a counterweight to a predominant India in the region, and Chinese military and trade access to the Arabian Sea. Chinese military help would also lessen the pressure on China to intervene on Pakistan's behalf should India and Pakistan get involved in a military conflict.

However, since the end of the Cold War, China's position has shifted from unequivocal support for Pakistan in the Kashmir dispute to the encouragement of India-Pakistan rapprochement.³⁵ The change in China-India-Pakistan relationship first became evident during President Jiang Zemin's official tour of India, Pakistan and Nepal in 1996. This was the first time such a high ranking Chinese leader had visited India and Pakistan together. During his trip President Zemin told his Pakistani hosts that they should put aside the dispute over Kashmir with India and seek a common ground with India to promote cooperation³⁶. Even though at that time the Pakistani press reacted negatively, events down the years indicate that the India-China-Pakistan relationship has ceased to be a zero sum game. Beijing now maintains that the 1972 Simla Agreement should serve as the framework for resolving the Kashmir issue and that its eventual resolution should be determined by the people of the two countries through dialogue and negotiation.³⁷

Though China's policy towards Pakistan has shifted towards neutrality to allow the improvement of India-China relations and avoid unnecessary entanglements, it is still willing to do the minimum necessary to preserve Pakistani security from a distance. Certainly China has no intentions to desert its long time

ally and indeed substantial Chinese defence assistance to Pakistan continues. On the other hand, China does not want to see its relations with Pakistan scuttle its improving relations with India. This was clearly reflected in China's neutrality in the Kargil conflict in 1999.

However, at that time, when the international community led by the US had condemned Pakistan's action of occupying Indian territory, China remained silent. This in many ways indicates that China will always find it very difficult to choose sides in an Indo-Pakistani conflict; however the larger trend, that China wishes to build on its India relationship despite its ties with Pakistan, is quite clear. Chinese Marxists say that contradictions are a permanent fact of life. Contradictions between India-China-Pakistan relationships will continue to exist, but what matters is, whether the contradictions are "antagonistic" or "non-antagonistic."³⁸

CHAPTER IV

CHINA'S FOREIGN POLICY CHOICES

China - Peaceful Rise

While India-China relations appear to be on solid ground, it is important to analyse in which direction China is heading. From the policies China has adopted, from its interaction with the world community in the socio-economic and security arena and with respect to promoting a peaceful and prosperous world order, what are the indications from China. It is necessary to analyse these aspects to see how China is likely to behave in the future in general towards the world community and towards India in particular.

China, for that matter any country, has three possible policy choices. The first policy choice is aggressive nationalism, the second is utilitarian realism and the third policy choice is cooperative internationalism. Aggressive nationalism, is about talking strong power, *real politik*, in which a rising China would play a more aggressive role in international relations. Utilitarian realism refers to the belief that presently China is not strong enough, although it is developing very fast; but it cannot afford to be very aggressive at the moment. Though power is still a basic element, the difference between the first policy, aggressive nationalism, and the second, utilitarian realism, is that time is a very important factor. The third policy choice is cooperative internationalism.

From its interaction with the international community, it is apparent that China believes that it is developing very fast, that it should become a full member

of international society, it should cooperate internationally, and that it should do what it can to maintain the international order, plus the regimes, rules and norms that go with that order. Many people believe that most big powers rise violently because it becomes a natural enemy of the existing power or its rival rising power. However, cooperative internationalism sees the whole thing differently and believes that though China has been developing very fast, it will become a peaceful and responsible member of the international society.³⁹ China's peaceful rise is evident from the policy choices it has made in the past few decades and its ongoing international behaviour.

China's Foreign Policy - Cooperative Internationalism

China has been redefining its national identity; it has been reconstructing its strategic culture and has been reconsidering its national security interests. Chinese diplomacy has undergone an important evolution over the last decade. Beijing's foreign policy reflects a more confident, less confrontational and more proactive approach towards regional and global affairs. These trends are reflected in China's increased engagement with multilateral and regional security organizations and Beijing's growing attention to non-traditional security challenges. Beijing has cooperated with the international community in fostering security in Central, South and South East Asia.⁴⁰ A nation's identity is not defined by its domestic society but by the relations between the domestic society and the international society. By this definition, it is seen that there are three types of national identities in today's world. There are status quo states, detached states, and revisionist states.⁴¹ A revisionist state's main purpose is to change the international order and the international system. A detached state is quite irrelevant; it does not care, unless its own state interests are at stake. A status quo state is in positive identification with international society and also tries to maintain the status quo or existing order. China has been moving along from the negative region up to the positive region. More or less, China is now a status quo state in the international system. It is a member of international society. Three clear indicators show how China falls into the category of status quo states.

These are:

- (a) Interdependence of China's economy with that of other nations.
- (b) Its activity in international organizations.
- (c) Cooperative strategic culture.

The percentage share of foreign trade in a country's GDP is an excellent indicator of the integration of its economy with that of the world. In 1980, China's foreign trade as a share of its GDP was only about 13%. Over the years, it has been increasing very dramatically. By the year 2002, it was 50%, and in 2004 it was over 60%. This shows a much higher degree of economic interdependence between China and international society than in the past. This is the first indicator. The second indicator comes from China's international organization memberships. China has joined almost as many international organizations as India, Japan and the United States. A third indicator illustrates how China tries to participate in multilateral international conventions. From 1949, when the People's Republic of China was founded, up to 1979, in thirty years' time, China joined thirty-four multilateral international conventions. And from 1980 to 2004, China joined two hundred and thirty seven⁴². These conventions follow international regimes, norms and rules; therefore it is an indicator of China's identification with international society.

China realizes that it can maximise its area of influence by entering the international order, increasing the level of economic foreign trade involvement in other states, increasing the amount of membership in international organizations and increasing the amount of involvement in multilateral conventions. These principles make sense from the point of view of any power which is seeking to increase its reach and influence as a result of its increasing economic and other capacities. At the same time, China wants to shape and influence the environment in ways that do not counter its rise. At this stage it would be stupid for China to push away from the international order and seek to pursue a unilateralist path again. By following a cooperative policy China is able to allay the fears of its immediate and regional neighbours, and perhaps also that of the world in general and United States and India in particular, that China is now a stabilising rather than a destabilising factor.

Chinese Communist Party

The choices which China makes and the direction in which China heads will be totally dictated by the thinking of the heavy-weights of the CCP. Over the last decade there appears to be a substantial transformation of the CCP. For China, the uncertainties and contradictions are myriad. The Communist Party is trying to change its identity to stay relevant and credible to the Chinese people, lest the fate of the East European Communist leaders befall it⁴³. After more than a century of misrule, China is now run by the best governing class in generations. Gone are

the aging commissars clinging to party rule; they have been replaced by leaders committed to moving the country forward and they include many young leaders who have been trained in western universities. In the 1980s steps were taken to abolish the traditional system of lifetime tenure and provisions were made to hand over the reins to a younger generation.⁴⁴ The credit for China's phenomenal success must go to the CCP, which by reinventing itself has retained its political legitimacy. One of CCP's main aims was to steer China resolutely towards capitalism and they have succeeded so thoroughly that in the near future China might drop the pretence that it is a communist country, especially in its dealing with foreign nations. At some point CCP may well stand for "Chinese Capitalist Party"! Though unlikely in the next decade, increasingly it appears that China would have to move towards democracy. A reform of the ownership structure is a good indicator in this direction. The share of privately owned enterprises, in percentage of GDP, in 1978 was only 1% and this had already grown to 24 % in 1996. Similarly the share of privately owned industrial enterprise in terms of gross output grew from 104700 million Yuan in 1978 to 20982000 million Yuan.⁴⁵ In fact, some analysts suggest that a more sudden or a rapid move would definitely lead to a chaotic transfer leading to a collapse of China, and therefore needs to be discouraged. Powerful nations the world over, including India and the US, need to remember these facts and act in a manner which leads to a gradual transformation of the CCP.

CHAPTER V

STRATEGIC PARTNERSHIP BENEFITS

Significance of Economy in Security

The recent policy shifts and deeper political and foreign policy reorientations in India and China are not unrelated to international changes. The end of the Cold War has brought about a paradigmatic shift in the notions of national and international security. Strategic thinkers and policy makers increasingly perceive national security and power as significantly dependent upon rapid economic growth, general prosperity and creation of techno-industrial capabilities that can sustain modern and technologically advanced military systems. Rapid economic growth in turn is dependent on successful integration with the global economy. Given this recognition, the possibilities for facilitating growth and development through international trade, investments, technology flows, and multilateral arrangements have made states look at the hard security problems through a

broader prism. Through the past decade there has been a steady decline in the number of inter-state conflicts and the principal violent conflicts engaging many nations are generally internal identity struggles, separatism, militancy, insurgencies and terrorism. Issues of governance, justice, welfare, good electoral practices, equal rights for citizens, efficient law and order mechanisms and intelligence gathering, backed by rapid economic growth and employment are now seen as vital for mitigating the bulk of conflicts. An effort to pursue good neighbourly and cooperative international strategies wherever possible, and maintaining peace and tranquillity, helps states focus on modernization and political consolidation and resolve internal problems.⁴⁶

The major powers and middle powers would continue to invest in the military for external security management and dealing with the consequences of the revolution in military affairs and other security dilemmas. Interstate conflicts such as US-Iraq war could always break out. But in general, the old confrontationist policies have given way to stress on diplomacy, coordinated multilateral efforts and better diplomatic management of interstate differences over trade, technology, investments and economic rights. All major powers are today intertwined in a thick network of trade, investment and financial ties. Large wars are not expected, except where very important sovereignty issues are involved, as in Israel-Palestine, China-Taiwan and the India-Pakistan dispute over Kashmir. The major powers want a stable and peaceful global order, given their large stakes in trade, investments, financial and information flows and secure energy supplies. These global and regional trends already have a deep impact in the India-China relationship of the present and continue to shape the content, context and trends of future bilateral relation, including security thinking and external strategies.

Benefits of Strategic Partnership

Firstly, the difference between “strategic cooperation” and “strategic partnership” needs to be understood. Strategic cooperation would imply a more proximate exchange and coordination of views by both countries to the common challenges posed in the economic, political and security spheres. “Strategic partnership” on the other hand would imply a relationship which would not only incorporate strategic cooperation but also an added emphasis on converting the strategic convergences between two nations into more meaningful defence and security cooperation, joint military training and exercises, defence production and hi-technology exchanges, and shouldering of some common security commitments. This in fact implies an evolving alliance relationship, but short of it.⁴⁷

In addition to the very obvious economic benefit which both India and China will enjoy, a strategic partnership between the two countries will also lead to large scale geo-economic, geopolitical and geo-strategic advantage such as:

- (a) Alter the global balance of power from a unilateral one to a multi-lateral one.
- (b) India and China occupy a major area of the heartland of Asia, this area will get stabilised automatically.
- (c) The degree to which both India and China try and spread their individual influence and dominance in South and South-East Asia will reduce and this region will also benefit from stabilisation.
- (d) A China-India strategic partnership could make a Russia-India-China strategic triangle a viable proposition. Presently, this triangle is unworkable because of differences in the China-India relations.
- (e) International security environment as painted by the United States depicts China as a threat to Asia-Pacific security. Strategic cooperation with the other major Asian country could help China in mitigating this image.
- (f) India's normalizing of relations with China and moving towards strategic partnership could open the way for India's enhanced economic integration with East Asia and the ASEAN region, and closer ties with the Shanghai Cooperation Organisation.
- (g) India could hope for energy security benefits from the Central Asia region in collaboration with China.
- (h) The China-Pakistan strategic nexus will get diluted with time.

The Chinese View

Strong inputs continue to come from the Chinese side to further the ongoing bonhomie. China perceives that United States unilateralism can best be neutralised by development of global multilateralism. Therefore, it is in Chinese interest to create all possible mechanisms to check USA to whatever extent possible, especially so in Asia. Multi-polarity increases China's strategic flexibility and reduces the danger of alliances aimed at China.⁴⁸ China-India partnership could provide such a forum, even though both China and India individually cannot afford to, nor wish to be seen in any form of opposition to the US. China would benefit

immensely from the very large Indian market. It can get access to the niche areas of Indian high technology such as information technology, banking etc, and can share the R & D burden in new technologies such as cleaner coal burning thermal plants etc. A partnership with India would not only provide safer passage of their trade and oil in the vulnerable Indian Ocean, but China would also get access to more port facilities in the Indian Ocean region. India would be a strong partner in world forums such as WTO for extracting the best deal for China and the other Asian countries. And most importantly China and India as prominent rising powers could help each other in integration with the world community.

Need for Indian Grand Strategy

China and India are on their way to becoming economic powerhouses and are asserting their global aspirations. Japan is gradually flexing its military muscle and the Southeast Asian economies are back in business after the setbacks of the 1997 financial crisis. Therefore, the global political architecture is undergoing a transformation with power increasingly shifting from the West to the East, giving rise to a strong belief that this new century will, in all likelihood, be an Asian century.

The future of this Asian century will to large extent depend upon the relationship between the two regional giants, China and India. According to the United States National Intelligence Council Report on emerging global trends, by 2015 the international community will have to confront the military, political and economic dimensions of the rise of China and India. The bilateral relationship between China and India will define the contours of the new international political architecture in Asia and the world at large. As of today, however, the status of the Sino-Indian relationship remains as complex as ever to decipher, despite some remarkable positive developments in the last few years. While China has displayed a remarkable consistency in its dealings with India, but somehow, India has still to display a similar long-term strategic vision in so far as its China policy is concerned. India both pre-1962 and post-1962 has not had a coordinated “Grand Strategy” towards China. India’s foreign policies and strategic formulations towards China have been reactive and exigency stimulated.

India’s grand strategy towards China should be totally based on protection of India’s long term interests, both in peacetime and war-time. Therefore, India needs to formulate a long term and realistic strategic vision of China in the 21st century. Such a strategic vision should have a predominant strategic and military assessment

as these would factor in China's grand strategy operating against India. Based on such a strategic vision, "India's Grand Strategy towards China for the 21st Century" should be worked out in detail and coordinated between the Ministries of External Affairs, Defence, Home, Finance and Commerce with lateral inputs from the Atomic Energy Commission. All three Services Headquarters of the Armed Forces should be intensively involved in this process and final conclusions vetted by them.

In Chinese formulations, India figures as a potential threat to China. China believes that the military strategic targets of India are to seek hegemony in South Asia, contain China, control the Indian Ocean and strive to become a military power in the contemporary world.⁴⁹ Therefore, while China continues to engage India towards developing closer ties in all fields, in its strategic perceptions it continues to hold India as a competitive threat.

India too needs to adopt the Chinese model in its grand strategy towards China. Therefore, while India should reciprocate Chinese professions of goodwill, enter into cooperation in trade and commerce and move towards strategic partnership in technological and military fields, but it should also simultaneously engage in diplomatic and strategic manoeuvres to keep China strategically hemmed-in in East Asia and Central Asia, thereby deflecting Chinese South Asian focus.

CHAPTER VI **CONCLUSION**

Cooperation versus Competition

With an annual GDP growth of over 9 %, China is poised to become one of the world's largest economies in the next decade. The Indian economy is also on a high growth trajectory and has moved into the 8 % GDP growth area. To continue progressing at a similar pace in the coming decade also, both China and India need to invest heavily in all measures which will ensure stability not only in the two respective countries but also in the neighbouring region.

While major contentious bilateral issues like the border problem and China's support to Pakistan continue to evade mutually acceptable solutions, pragmatic policy analysts believe that despite divergent security perceptions and competitive interests, both countries can seize the opportunity to forge mutually beneficial bilateral trade, and a durable strategic partnership to redefine the world order towards a multi-polar structure. The border problem and China's support to

Pakistan, especially the former, also contain the potential to derail the fast growing relations. But both countries realize the negative potential of these issues and increasingly down play the requirement of an early solution of the border issue and reject the idea of a zero sum game involving Pakistan.

The question of cooperation versus competition between the two countries is best indicated in the recent developments in the energy sector. In January 2006 China and India signed a number of cooperation pacts to ensure secure energy supplies for both the countries. Both China and India recognize that unbridled rivalry between them only results in purchase of their energy security at the expense of the other. Also, the increasing bilateral trade between the two countries is perhaps the best indicator of the new developing relationship. After India's nuclear tests of May 1998, India's overall trade suffered, yet the bilateral trade with China registered an increase that year. This perhaps is one of the strongest indicators of the soundness of bilateral trade between the two countries and its future.

Strategic Objectives

Presently China's primary strategic objectives are to maintain an external environment conducive to the pursuit of economic reform, expand its strategic independence and leverage in a complex multi-polar environment, and continue strengthening itself towards reunification of Taiwan in the long term. However, China is a realist and recognises that it cannot be in a position to challenge USA in the next two decades, therefore, its reunification strategies would need to be maintained status quo for the time being.

In view of the new emerging relationships between China-India, China-US, and India-US, many experts now believe that in the larger context, China wants peace and stability in Asia. Hence the Chinese view is slowly turning to accommodate the facts that India is already a dominant power in South Asia and is rapidly becoming a major world player. Therefore, India has to be engaged in a positive manner by China, even if it is at some cost to China's relationship with Pakistan and other smaller Asian and South East Asian countries.

In April 2005, the Chinese Premier Wen Jaibao visited India and the two countries announced a "strategic cooperation" to make advances in economic cooperation and trade issues. Both also agreed to strive for closer political initiatives. To further the cooperation between the two countries, the two governments also designated 2006 as "India-China friendship year".

Gains of a Strategic Partnership

In addition to the very obvious economic benefit which both India and China will enjoy, a strategic partnership between the two countries will also lead to large scale geo-economic, geopolitical and geo-strategic advantages. It will alter the global balance of power and shift its centre of gravity towards Asia. The degree to which both countries try and spread their individual influence and dominance in South and South-East Asia will reduce and this region will also benefit from stabilisation.

The international security environment perceives China as a challenger to the US and therefore possibly a future threat to US. China's Taiwan policy is also seen as a threat to South East Asia. Strategic cooperation with India would help China in mitigating this negative image.

China would benefit immensely from the very large Indian market. A partnership with India would not only provide safer passage of their trade and oil in the vulnerable Indian Ocean, but China would also get access to more port facilities in the Indian Ocean region. India would be a strong partner in world forums such as WTO for extracting the best deal for China and the other Asian countries. And most importantly China and India as prominent rising powers could help each other in integration with the world community.

For India, normalizing of relations with China and moving towards strategic cooperation could open the way for its enhanced economic integration with East Asia and the ASEAN region, and closer ties with the Shanghai Cooperation Organisation. India could hope for energy security benefits from the Central Asia region in collaboration with China. Also, the China-Pakistan strategic nexus will get diluted with time.

Strategic Partnership-A Definite Possibility

Strong inputs continue to come from the Chinese side to further the ongoing bonhomie. China perceives that United States unilateralism can best be neutralised by development of global multilateralism. Therefore, it is in Chinese interest to create all possible mechanisms to check USA to whatever extent possible, especially so in Asia. China-India partnership could provide such a forum, even though both China and India individually cannot afford to, nor wish to, be seen in any form of opposition to the US.

China seeks to acquire and establish a favourable security environment that is conducive to continued economic growth and its military modernization. China and India today have many areas of convergences extending from economics to energy and security related issues. In the sphere of international relations and politics, no proposition or development should be deemed as unthinkable. China and India today are in a position, where both could benefit immensely by forging a bilateral strategic partnership. The security spillover would benefit entire Asia, especially Central and South-East Asia. Similarly, merging of the two giant economies would also benefit the entire region economically. One of the important direct benefits to India would be the gradual shifting of the Chinese thought from Pakistan to India, thereby slowly weakening the Chinese–Pakistan relationship. Therefore, a “realist” would conclude that a China-India strategic partnership is very much a possibility. Hence, on its part the Indian Government needs to develop and expound a clear long term China policy in this direction.

While speaking at the launch of the *Indian Foreign Affairs Journal* on 15 Feb 06, the Indian Prime Minister, Dr Manmohan Singh had said “While we must be guided by the experiences of the past, we need not be constrained by it. We must have an informed view of future possibilities and have the wisdom to prepare for all eventualities.” His advice may well be the cornerstone on which the India–China “strategic partnership” could be built on.

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Appendix A

(Refers to Chapter II Page 72 Para 1)

Relevant Data Projected by Mohan Guruswamy of Centre for Policy Alternatives, New Delhi, during his lecture “Economic Reforms: How Good was our Liberalisation,” delivered at National Defence College, New Delhi on 09 Mar 06

Income Ranking (real)

India is the 12th largest economy in the world, but 159th in per capita terms

Country	Rank	GNP (\$ billion)	Per Capita Income(\$)
United States	1	11012.6	37870
Japan	2	4360.8	34180
Germany	3	2085.5	25270
United Kingdom	4	1680.1	28320
France	5	1521.6	24730
China	6	1416.8	1100
Italy	7	1243.2	21570
Canada	8	773.9	24470
Spain	9	700.5	17040
Mexico	10	637.2	6230
South Korea	11	576.4	12030
India	12	570.8	540

Source: *World Development Indicators 2005*, World Bank

Appendix A (cont'd)

Incomes in PPP terms.

- In PPP terms, India is the fourth largest economy in the world.
- However, India is 146th in per capita income terms.

Country	GNP (PPP) (\$ billion)	Per Capita Income(PPP\$)
United States	10,978	37,750
China	6,410	4,980
Japan	3,629	28,450
India	3,062	2,880

Source: *World Development Indicators 2005*, World Bank

Appendix A (cont'd)

Growth

India's average economic growth over the last 10 years (from 1993-94 to 2003-04) has been 6.23%.

- (a) This is the second fastest growth rate amongst the big 20 economies in the world.
- (b) China had a growth rate of 9.3%.

Considering Japan's growth rate is only 2.7%, we are set to move into the third place soon in PPP terms.

Gross Domestic Product(\$bn)

Year	China	India
1980	141	155
1990	355	317
2003	1417	571

World Development Indicators 2005, World Bank

Per Capita Income (\$)

Year	China	India
1980	167	228
1990	878	477
2003	1100	540

World Development Indicators 2005, World Bank

GDP Growth %

Year	China	India
1980-90	10.3	5.7
1990-2000	10.1	5.9
2000-03	9.5	6.1

World Development Indicators 2005, World Bank

NIGERIA-INDIA: PARTNERS IN ECONOMIC DEVELOPMENT

By

GROUP CAPTAIN LA HALLIRU FSS MSS DSS

Synopsis

The Nigeria-India economic, diplomatic and cultural relationship has come a long way since India first established diplomatic relations with Nigeria in 1958. Both countries although former British colonies, were at the forefront of the worldwide anti-apartheid and anti-colonial struggle. India is presently involved in 'the New Partnership for Africa's Development (NEPAD)' which is based on a shared vision and commitment by African leaders and India that they have to eradicate poverty and place their countries on the path of growth and development.

Nigeria seeks greater economic partnership with India for its national development. It requires the considerably cheaper Indian expertise in agriculture, commerce, trade, education and military hardware. India's industrial output and intermediate technology require the vibrant and petrodollar enmeshed Nigerian market which is already the largest in Africa. Strategically India needs to redouble its efforts at dominating the economic development partnership with Nigeria.

Nigeria like India has a vast rural population and agriculture is critically important. India's Green Revolution resulted in saving land and forests by improving productivity without associated ecological or social harm. Nigeria and Africa in general need to examine the secret of India's success in this context if the continent is to survive the war against hunger and poverty. India and Nigeria can co-operate in the agricultural sector whereby Nigeria can benefit by acquiring India's relatively cheap machinery and farm implements and disseminating to the local communities the latest methods and techniques of farming as a result of R&D co-operation with India.

Nigeria's trade policy is usually cemented through Bilateral and Multilateral Trade Agreements with many countries worldwide. Nigeria is India's largest trading partner in Africa with bilateral trade peaking to \$ 3 billion.

India should strategise a greater economic agenda for Nigeria with the aim of benefitting from the numerous opportunities in the Nigerian economy. At present

India is facing the critical challenge of a rapidly increasing demand for energy. Her national energy security concern can be catered for by Nigeria's vast oil and gas resources. Nigeria on the other hand, greatly needs the much valued Indian investment in its economy for her economic and developmental growth.

India and Nigeria as partners in economic development must harness all resources toward building a very strong educational base. In a world based on science and technology it is education that determines the level of prosperity, welfare and security of the people. Nigeria in her quest for economic and technological development must without further delay sign an educational co-operation memorandum with India.

Military co-operation between India and Nigeria has been an essential part of economic development of both countries but there is scope for expanding the horizon of military co-operation. Indian manufactured military hardware is considerably cheaper, more durable and best suited for operation on the African continent. India should strategise policies of economic co-operation that embed military co-operation.

CHAPTER I

INTRODUCTION

“Perception of intentions in the relationship between Africa and its development partners and friends across the globe is witnessing a symbiotic improvement. As a result hopelessness and despair are gradually yielding way for a future full of hope of economic emancipation and prosperity on the continent.”¹

-President Olusegun Obasanjo of Nigeria

Background

The Nigeria-India economic, diplomatic and cultural relationship has come a long way. India established diplomatic presence in Nigeria in 1958, even before Nigeria became independent in 1960. Both countries have been in the forefront of the worldwide anti-apartheid and anti-colonial struggle. Nigeria and India's role in the liberation of oppressed people of Africa from colonialism, racism and apartheid earned them recognition in being invited to become members of the then well-known Group of Frontline States. In the post-colonial and post-apartheid period, Nigeria with a lot of diplomatic support has been playing a leadership role in addressing Africa's intra-state conflicts which have blocked the road to economic and social development. This was when Nigeria became more confident at playing a major role in the

promotion of continental development through more intensive cooperation. Both the countries have ever since been collaborating in various international fora. Furthermore, India's Prime Minister Jawaharlal Nehru visited Nigeria in September 1962 and this excellent singular act laid a strong foundation for economic and political relations between the two countries.

Nigeria-India relations got a strong boost when President Obasonjo during a state visit in January 2000 was the Chief Guest at the Republic Day celebration and also when Prime Minister Atal Behari Vajpayee attended the Commonwealth Heads of Governments Meeting (CHOGM-2003) in Abuja, Nigeria. During all these bilateral visits many economic and technological memorandums were initiated. It is high time that the objectives of these memorandums were actualized fully for the benefits of both people.

India is presently fully involved in "The New Partnership for Africa's Development (NEPAD)," which is a pledge by African leaders based on a common vision and a firm and shared conviction, that they have a pressing duty to eradicate poverty and to place their countries, both individually and collectively, on a path of sustainable growth and development, and at the same time to participate actively in the world economy and body politics. The Programme is anchored on the determination of Africans to extricate themselves and the continent from the malaise of underdevelopment and exclusion in a globalizing world. "The poverty and backwardness of Africa stand in stark contrast to the prosperity of the developed world. The continued marginalization of Africa from the globalization process and the social exclusion of the vast majority of its peoples constitute a serious threat to global stability."²

India has all the potentials of an emerging world power; this is because of the astronomical growth of its economy and technology. Consequently, Nigeria's quest for partnership with India is for national development. The overall objective of national development is human development, the purpose of which is to promote people's choices for:

"...greater access to knowledge; better nutrition and health services; more secure livelihoods; security against crime and physical violence; political and cultural freedom; and a sense of participation in activities..."³

Justification of the Study

Strategically, India needs to double its effort at dominating the already appreciating economic development partnership with Nigeria. It is especially important now because, India's industrial output and intermediate technology require the vibrant and petrodollar enmeshed Nigerian market which is the biggest on the continent of Africa. Likewise, Nigeria now more than ever before needs the considerably cheaper Indian expertise in agriculture, commerce, trade, education and military. The aggressive application of diplomatic pressure on the bureaucrats of both Governments is highly required, if all the laudable objectives of all the economic development memorandums and treaties signed are to be achieved within an appreciative time frame. In our fast changing world of today, any country that ignores the speed of economic globalization does so at its own peril.

Aim

The aim of the study is to highlight the importance of consolidating the economic development partnership between Nigeria and India for sustainable human development. The specific objectives are :

- (a) Examine ways and means that can foster greater economic activities between the two great countries.
- (b) Determine how grassroots economic activities can be enhanced.
- (c) Evaluate the benefits of increased developmental economic ties.
- (d) Prove that India has a greater role to play not only in Nigeria but in the entire African continent.

Hypothesis

The hypothesis to be tested is that India's increased economic ties with Nigeria will play a critical role in the country's national development. Also, India needs a guaranteed market for its intermediate technology which is suitable for Africa. To test this hypothesis, certain assumptions are made:

- (a) India would like to have an institutionalized democracy in Nigeria which promotes the rule of law and freedom of speech.
- (b) Both governments of Nigeria and India have been working hard to release the economic goals contained in the numerous memorandums and treaties already signed.

- (c) That Indian companies willing to participate in the Nigerian economy will be competitive enough in any market economy.
- (d) Nigeria will aggressively seek transfer of technology with the assistance and cooperation of Indian companies' Chief Executive Officers (CEOs).

Scope of the Study

The study is limited to only four areas of economic development: agriculture, commerce, education and military. It involves comparative analysis of economic and trade indices. New methods of economic integration along the line of economic globalization strategies will be examined. Furthermore, effort at decentralisation of economic integration process in order to promote full and adequate participation of the rural populace that makes 70% of the Nigerian population will be promoted. The data reviewed are both qualitative and quantitative. The comparative data presentation would prove that a lot more can be done to enhance the economic developmental programmes between Nigeria and India.

Preview and Plan of Presentation

Policies of economic development are crucial tools in building a “sustainable democracy”, and that is the only positive means which can support people-oriented policies. A strong democratic and economically viable Nigeria is a dependable ally to India. It is hereby posited, that both Nigerian and Indian people are struggling to achieve economic emancipation, and in each other they have found a helping hand.

The study is organized into six chapters as follows:

- (a) Chapter 1: Introduction
- (b) Chapter 2: Agriculture
- (c) Chapter 3: Commerce and Trade
- (d) Chapter 4: Education
- (e) Chapter 5: Military
- (f) Chapter 6: Conclusion and Recommendations

CHAPTER II

COOPERATION IN AGRICULTURE

Definition of poverty as “the lack of, or the inability to achieve a socially acceptable standard of living.”⁴

Africa like India is a rural continent and agriculture is critically important. According to Food and Agricultural Organization (FAO), in the continent as a whole, the agricultural sector accounts for about 60 percent of the total labour force, 20 percent of total merchandise exports and 17 percent of GDP. However, due to poverty and hunger in the African continent as of 2001, about 28 million people in Africa were facing food emergencies due to droughts, floods and strife, of which some 25 million needed emergency food and agricultural assistance.

Concept of Ever-Green Revolution

The Green Revolution resulted in saving land and forests, since productivity improvement and not area expansion has been the pathway of increasing production. What land hungry, but population rich countries need is the enhancement of productivity in perpetuity, without associated ecological or social harm. The Green Revolution should become an ever-green revolution rooted in the principles of ecology, economics, social and gender equity.⁵ The Indian 1960s Green Revolution was considered a great success. Nigeria and Africa in general need to examine the secret of that success and apply it if the continent is to survive the war against hunger and poverty. Appendix ‘A’ is the history of Indian Green Revolution. There are a lot of areas of cooperation between Nigeria and India in the following agricultural economic sectors:

(a) Land Management and Water Control System

Vast part of Nigeria’s agricultural land depends on irregular and unreliable rainfall for agricultural production which is a major constraint on crop productivity. Moreover, rain fed agriculture does not permit high-yield varieties of crops to achieve their full production potential. Accordingly, Nigeria’s State Governments concerned must as a matter of urgency link up with India’s experts in soil fertility and irrigation. Cooperation in this agricultural sector will provide farmers with the capacity to raise output on a sustainable scale that will contribute to the reliability of food supplies.

(b) Improving Rural Infrastructure

Improvements in roads, storage, marketing, packaging and handling systems, and input supply networks are vital to raising the competitiveness of local production vis-à-vis imports and in export markets. Investment in these areas will stimulate the volume of production and trade, thereby assisting to generate an appropriate rate of return on needed investments. Federal, State and local governments must shoulder the responsibility of these vital economic development sectors. A careful study of India's experience in this context will provide a very useful guide to Nigerian officials tasked with this responsibility.

(c) Increasing Food Supply

Due to depressed crop, livestock, limited use of irrigation and other inputs, Nigeria is far behind in terms of farm productivity. If there is concerted cooperation with India by accessing improved technology most of which is simple and comparatively cheap, our small scale farmers can play a major role in food supplies that are much needed for "sustainable economic development". Furthermore, Indian investors in collaboration with State Governments in Nigeria can invest their resources at the grassroots level for the modernization of the agricultural sector which will provide maximum profit on their investment.

(d) Agricultural Research and Technology

Aggressive approach to achieving the much desired sustainable food production in Nigeria will require the following:

- i. Adoption of the most adequate available agricultural technology from India's R&D.
- ii. Mechanization of Nigeria's agricultural system by acquiring India's relatively cheap machinery and farm implements.
- iii. Dissemination to the local communities of the latest method and techniques of farming acquired as a result of R&D cooperation with India.
- iv. Increased investments in agriculture by Government, Companies and Individuals.
- v. Guaranteeing market for all agricultural produce that would significantly encourage farmers to produce more food and cash crops.

South-South Cooperation

During the past thirty years, parallel to the evolution of the North-South dialogue, a deliberate process to strengthen economic relations among developing countries has emerged.⁶ Consequently, economic cooperation among developing countries constitutes a cornerstone of sub-regional and global development strategies. India's investment in Nigeria's agricultural sector (which has great potential of high returns) is urgently needed now more than ever, in the spirit of South-South cooperation.

According to India's Economic Survey 2005-2006. Total food grains production in India declined from 213.5MT in 2003—04 to 204.6MT in 2004- 05. All the crops presented in (Figure 1.) can be produced in Nigeria in large commercial quantity with the assistance of India's investment.

Commercial Crops Production (Million Tons)

(a)	(b)	(c)	(d)	(e)	(f)	(g)
Crop/year	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	@2005-2006
Groundnut	6.4	7.0	4.1	8.2	7.0	5.9
Rapeseed&Mustard	4.2	5.1	3.9	6.2	8.4	
Soya bean	5.3	6.0	4.7	7.9	7.5	6.6
Other Oilseeds	2.5	2.6	2.1	3.0	3.2	2.1
Total nine oilseeds	18.4	20.7	14.8	25.3	26.1	14.6
Cotton *	9.5	10.0	8.6	13.9	17.0	15.9
Jute&Mesta**	10.6	11.7	11.3	11.2	10.5	10.1
Sugarcane	296.	297.2	287.4	237.3	232.3	257.7

* Million bales of 170 kgs. Each.

**Million bales of 180 kgs. Each. @ 4th advance estimates \$ 1st advance estimates (kharif only).

Figure 1. Source: India's Ministry of Agriculture

Agricultural Machineries

Tractors, Implements and Fertilizers. India manufactures high quality agricultural machineries with comparatively attractive cheaper prices which could revolutionize agriculture in Nigeria. The Indian manufacturing companies need

to adopt new aggressive marketing strategy in Nigeria in order to dominate this vital agricultural sector. Nigeria imports millions of dollars worth of fertilizers annually but India's market share in this area is very negligible. Again Indian companies need to formulate a formidable strategy to capture a sizable part of the chemicals market in Nigeria.

Manpower Development

The legendary Indian expertise in agricultural development is highly required in Nigeria's quest for green-revolution. Therefore, Nigeria needs to formulate a comprehensive training package that will bring large number of students to study in Indian agricultural institutions, while Indian agriculture experts should be sent to Nigeria to implement new R&D findings in the rural areas with active participation of rural farmers.

Bio-Farming

Conventional food production technologies are highly energy intensive and lead to the problems of soil and food contamination with agro-chemicals, ground water depletion and gradual decline in soil productivity. As a result, farm profitability has declined considerably. This has also resulted in irreversible losses of certain natural resources like soil due to erosion and depletion in ground water. R&D in India has produced a remarkable progress in bio-farming which resulted in astonishing food increase per acre. Nigerian scientists must cooperate with their Indian counterparts in R&D in order to maximize the benefits of bio-farming. Similarly, Indian companies that specialized in bio-farming must explore the possibilities of establishing business in Nigeria the largest market on the continent of Africa.

Forestry and Wildlife

India's long-term strategy for forestry development reflects three major objectives: to reduce soil erosion and flooding; to supply the growing needs of the domestic wood products industries; and to supply the needs of the rural population for fuelwood, fodder, small timber, and miscellaneous forest produce. To achieve these objectives, the National Commission on Agriculture in 1976 recommended the reorganization of state forestry departments and advocated the concept of social forestry. The commission itself worked on the first two objectives, emphasizing traditional forestry and wildlife activities; in pursuit of the third objective, the commission recommended the establishment of a new kind of unit

to develop community forests. Following the leads of Gujarat and Uttar Pradesh, a number of other states also established community-based forestry agencies that emphasized programmes on farm forestry, timber management, extension forestry, reforestation of degraded forests, and use of forests for recreational purposes. Such socially responsible forestry was encouraged by state community forestry agencies.⁷ In Nigeria today, desertification and the ever increasing deforestation is graduating into ecological disaster despite the billions of Naira the Government has been pumping in ecological funds for decades all over the country. A clear case of mismanagement and lack of commitment from the various agencies charged with the responsibility of ecological management must be responsible for these monumental failures. Therefore, the Federal Government of Nigeria must act fast by collaborating with Indian government agencies of forestry and wildlife in saving our precarious ecosystems from further destruction.

CHAPTER III

COMMERCE AND TRADE

Classical International Trade theory was concerned with trade among nations in final commodities, mostly goods, which are largely reproducible in unlimited amounts. The critical assumption was of immobility across nations of the three agents/ factors of production of land, labour and capital. Land consists of the heterogeneous agricultural, mineral and metallic resources. Labour includes both ordinary and skilled/trained/expert labour. Capital embodying within itself technology consists of produced means of production, both fixed and circulating⁸. Therefore, India's globalized economy coupled with its technology of processing agricultural, mineral and metallic resources must play a greater role in the economic development of Africa. Also, India's highly skilled manpower and investors should be heavily involved in manufacturing and the oil sectors of the Nigerian bubbling economy.

External Trade Policy

Nigeria's trade policy is an extension of Nigeria's foreign policy that is usually cemented through 'Bilateral and Multilateral Trade Agreements' with many countries worldwide. Nigeria is signatory to multilateral agreements such as United Nations Conference on Trade and Development (UNCTAD) and World Trade Organization (WTO). The government has set modalities and guidelines to entice individuals and companies to service machinery and equipment through counter-

trade arrangements. Also it has in place buy-back schemes on medium and long term basis from overseas suppliers. At this juncture it is imperative to urge the Government of India to encourage companies and investors to take full advantage of opportunities offered by the economic climate condition in Nigeria.

A few years ago, Nigeria with just over \$1.1 billion per annum, was India's fifth largest trading partner in Africa, ranking after South Africa, Egypt and Kenya. Today, with India's increased import of Nigeria's sweet crude oil and the ever increasing business opportunities as a result of the economic reform programmes of the Federal Government, Nigeria has moved to number one position. Bilateral trade in the last three years is over US \$3 billion.⁹ The Bilateral Trade Statistics in (Figure 2) speak volumes, in trade and commerce activities between our two countries.

	2002-03		2003-04		2004-05	
	US \$(mn)	Ind Rs(mn)	US \$(mn)	IndRs(mn)	US \$(mn)	Ind Rs(mn)
Indian exports to Nigeria	49.08	217334	565.49	259851	607.27	275339
Indian imports from Nigeria	78.13	1193780	75.64	1134510	+47.71	+21633
	*2389.0		*2393			
Total Trade	291621	1411114			+654.98	+296972
*Oil Imports, excludes software exports						
+Excludes oil imports						

Figure 2: Bilateral Trade Statistics

Nigeria is undoubtedly Africa's largest producer of oil. Appendix 'B' shows the African countries oil production statistics from 1993-2003. Evidently, Nigeria is one of the main sources of crude oil for India. In August 2000, a term contract was signed between Indian Oil Corporation (IOC) and the Nigerian National Petroleum Corporation (NNPC) for the import of crude. This contract was renewed in August 2002. Nigeria is one of the few producers of the sweet varieties needed by Indian oil refineries and therefore the demand for Nigerian crude is expected to remain substantial in the near future. India currently imports around 15 million tones of crude from Nigeria.¹⁰ See Figure 3.

Year	Quantity (mmt)	Value (in US\$ million)
1999-2000	15.450	2597.7
2000-2001	12.570	2140.4
2001-2002	11.320	2001.9
2002-2003	11.578	2389.0
2003-2004	11.074	2393.0
2004-2005	15.081	—

Figure3. India's Oil Imports from Nigeria

Chinese Challenge

As India enters Africa in search of oil equity; it is increasingly facing the Chinese challenge. India's Oil and Natural Gas Corporation Videsh Limited (OVL) is going neck to neck with Chinese oil companies in Africa. In the battle for the control of equity oil in Africa, the Chinese have already out bid OVL twice in Sudan and Angola. With an eye on the African oil potential, China is going in for aggressive diplomacy in the African continent. China's engagement in Africa is believed to be fueled by its rising domestic oil consumption. It is believed that by 2025, China will be the largest consumer of energy overtaking the US, followed by India in the third position. Throughout the 1990s, China continued to strengthen its relations with individual African countries in all spheres of economy, politics and the military¹¹.

Traditionally, India has been considered a truly great African ally throughout the freedom struggle period of the 1960s, the Non-Aligned Movement and in the ever promising South-South cooperation context. Political observers often wonder why India, the great African ally should be lagging behind China in the economic market of Africa. Some explanations offered were that China being

communist does business by fiat while India being a democracy must conduct business by act of parliament, thus had to contend with numerous bureaucratic obstacles. All these notwithstanding, the Indian government, companies and businessmen must forge ahead by strategizing their economic policies in Africa with the sole aim of maximizing economic benefits that are very much anticipated.

Indian Companies Performance in Nigeria

Globalization is the process by which events, decisions and activities in one part of the world have significant consequences for other parts of the globe. It represents closer integration of the world economy resulting from increase in trade, investment, finance and multi-country production networks. It extends beyond economic interdependence to include dilution of time and space dimensions as a result of spread of information technology¹². It is heartwarming to note that India's astronomical economic growth and advanced technology has placed Indian companies and investors on the global stage. They are very much sought after in Nigeria¹³, and are doing very well in some of the following:

- (a) Agriculture and irrigation
- (b) Information Technology
- (c) Recycling of waste paper and plastic
- (d) Handmade paper industry
- (e) Small scale industries
- (f) Food processing
- (g) Machinery and equipments
- (h) Healthcare & pharmaceuticals
- (i) Road & construction equipments

Nigeria's Untapped Mineral Riches

There are tremendous opportunities for investments in the solid mineral sector of the Nigerian economy. Prospecting licenses for investors (both local and foreign) to participate in the exploitation of the vast mineral resources in Nigeria is granted by the Federal Ministry of Solid Minerals Development. Identified minerals in large commercial quantities includes :

- (a) Coal
- (b) Gold
- (c) Gypsum

- (d) Iron-ore
- (e) Gemstones
- (f) Talc
- (g) Lead/Zinc
- (h) Bentonite and Baryte
- (i) Bitumen
- (j) Rock Salt
- (k) Kaolin

Incentives

A comprehensive incentives package granted by the Federal Government of Nigeria to investors includes :

- (a) Investors are entitled to between three to five years tax holiday.
- (b) Investors are entitled to deferred royalty payment depending on the strategic nature of the project as well as the volume of investment involved.
- (c) Investors are entitled to possible capitalization of expenditure on exploitation and surveys.
- (d) Investments in the solid minerals sector most of which are located in rural areas have the high potential of attracting infrastructures such as roads and electricity to their locations to facilitate production evacuation etc.
- (e) Provision also exists for 100% foreign ownership of mining concerns ¹⁴ .

Why India Should Invest in Nigeria

At present, India is facing the critical challenge of a rapidly increasing demand for energy. With over a billion people, a fifth of the world population, India ranks sixth in the world in terms of energy demands. Its economy is projected to grow 8-9 per cent over the next two decades, and this will certainly lead to a substantial increase in demand for oil¹⁵. A recent study indicates that India's energy consumption will increase at the rate of 5 per cent every year up to 2010-11. However, this is a conservative estimate and real consumption is likely to grow at a much faster pace¹⁶.

Oil & Gas sector dominates the Nigerian economy and is responsible for 80% to 90% of the foreign exchange earnings. Nigeria's effort to diversify and optimize earnings from the sector offers Indian investors golden opportunities to

participate and maximize profit on their investments. *Oil and Gas Journal* (1/1/05) estimates Nigeria's proven oil reserves at 35.2 billion barrels. The Nigerian government plans to expand its proven reserves to 40 billion barrels by 2010. The majority of reserves are found along the country's coastal Niger River Delta and at least 200 other fields contain undisclosed reserves. Nigeria's main export crude blends are Bonny Light and Forcados. Approximately 65 per cent of Nigerian crude oil production is light and sweet (low sulfur content) which is most preferred the world over¹⁷.

India's quest for energy, according to its national energy security concern can be substantially catered for by Nigeria's vast oil and gas resources. India must without further delay or any bureaucratic obstacles invest more heavily in the oil and gas sector of the Nigerian economy in the interest of its national energy security concerns. Nigeria on the other hand greatly needs the much valued Indian investment in its economy for her anticipated national economic and developmental growth as a result of the enhanced globalised economic fraternity between our two great nations.

Joint Ventures

Lasting trade ties cannot be established without going beyond the realm of imports and exports. It has to be forged and fostered in a cooperative spirit by being partners in progress and sharing the experience of development. The establishment of joint ventures or collaborative enterprises is of crucial importance in this regard. India has already made a good beginning and several joint venture projects are in operation in Nigeria. Some have already achieved a good degree of success to the mutual advantage of the countries concerned as well as India¹⁸.

India's experience and expertise in several fields of modern technology with its proven ability in the management of industry have today made the country highly eligible to participate in prestigious joint venture projects abroad. India is both capable and willing to share its knowledge with other developing countries and assisting them in furthering own process of development.¹⁹ On a rough reckoning, it has been found that while many projects have not done well and, in fact, been abandoned, quite a few Indian joint ventures set up in Kenya, Nigeria and Mauritius have given a good account of themselves. They have created sizable employment, both direct and indirect, generated income for the local people, developed local resources including manpower resources, brought about savings in imports and

added to the foreign exchange earnings of the host country²⁰. The Government of India is hereby strongly urged to facilitate more joint ventures in Nigeria which will ultimately provide jobs for teeming millions of Nigerians that will make good investment returns to the Indian investors. Moreover, India's economic support for the economic development of Nigeria will in this context, improve the quality of life of ordinary Nigerians which could help institutionalized democracy in Nigeria. Either way it is a win-win situation for both countries.

Conducive Climate for Investment

Since the start of the 21st century there has been an emphasis on economic reforms in Africa, which make regional economies more attractive to foreign investors. Nigeria for the past ten years has been pursuing a policy of trade liberalization, making the environment for business less rigid and friendlier to foreign investors. It is also pursuing vigorously a privatization programme which allows private ownership of previously government owned operations of many companies. As a result, many opportunities for global business operators have been created in Nigeria, the second largest economy in the continent after South Africa. Indian business investors and major companies must take up the challenge by moving into the prevailing conducive climate for investment in Nigeria.

The international press portrayed Nigeria negatively; from the mid 1980s through the 90s; this was the reason why foreign investors were slow in taking advantage of opportunities in the country. The various economic reforms put in place and the rehabilitation of infrastructure in the country are producing positive results. Furthermore, during a visit to Nigeria in December 2004, IMF executive, Anne Krueger, observed that, "Prudent management of (Nigeria's) significant oil windfall has helped to stabilize the economy and to begin to address the major macroeconomic imbalances. Inflation has begun to fall, the exchange rate is more stable, and there has been significant buildup of foreign reserves".²¹ The patriotic call for India and Nigeria to double their effort as partners in economic development couldn't have come at a better time.

Calabar Export Processing Zone (CEPZ)

This is the premier Export Processing Zone (EPZ) in Nigeria, the giant of Africa. It is located in the Cross River State. The administration of CEPZ, first of its kind in Nigeria, is vested in the Nigeria Export Processing Zone Authority (NEPZA). Nigeria's EPZ has one of the most attractive incentives for investors in the world. The CEPZ provides the necessary enabling environment for the setting-

up, development, expansion and growth of export-oriented manufacturing industries in the non-oil sector of the Nigerian economy. The EPZ boasts of its own independent supply of utilities, such as uninterrupted power and water supply, modern and efficient telecommunications to support the public utilities. Other facilities include standard pre-built factories, serviced plots and warehouses. Calabar itself has good road link with other parts of the country and is located on the Trans-African Highway. There is also a modern seaport and an international airport, which is well patronized by the major local airlines with connecting flights²².

Nigeria like India was a former British colony and therefore an English speaking country. Nigeria has a pool of skilled and trainable manpower with significant industrial experience. Such manpower is available at very competitive rates, which rank among the lowest in the world. India needs to capitalize on these economic essentials, which are the CEPZ and the skilled manpower by investing heavily in this non-oil economic sector of Nigeria. This becomes more attractive because of the following :

(a) Incentives in EPZ

- i. one-stop approvals by the EPZ administration and its supporting agencies to handle almost all phases of operation in the Zone.
- ii. Exemption from all levies, rates, customs duties and taxes (Federal, States and Local Government).
- iii. Repatriation of foreign capital investment in EPZs at any time (with capital appreciation on investment).
- iv. No import or export licenses required.
- v. Land for factory space is provided rent-free.

(b) Industries Permitted Within The Zone

- i. Electrical and electronic products
- ii. Textile products
- iii. Garment production
- iv. Wood products and handicrafts
- v. Petroleum products
- vi. Pharmaceutical products and many other manufactured products

(c) **Investment Procedure**

- i. Inquiries and obtaining Investment application G form.
- ii. Inspection of built-up factory space and serviced industrial plots.
- iii. Submission of investment application form.
- iv. Processing of application form.
- v. Where application is approved, apply for company registration.

(d) **Import Regulations**

Importers and exporters to Nigeria are advised to take notice of the necessary guidelines. Information on basic import/export regulations can be obtained from pre-shipment inspector agent's office, foreign branches and affiliates of Nigerian banks and Nigerian diplomatic missions²³.

India the largest democracy on the planet has what it takes to participate fully and dominate the entire economic opportunities offered at the CEPZ in Nigeria. Furthermore, India should make the EPZ its manufacturing center for the rest of Africa in its effort of expanding its economic horizon worldwide. This is because Indian expatriates and medium industries are most suitable for the CEPZ.

India and Nigeria's Economic Reforms

Nigeria is obviously the largest market in sub-Saharan Africa with a manpower base of varying skill levels that ensure efficient and effective management of investment within the country. India needs to examine the statement which states that: economic outlook in Nigeria is promising with a huge potential for growth. Nigeria operates a mixed economy, which accommodates individuals, small businesses as well as corporate organizations and government agencies, to invest in almost all ranges of economic activities. Additionally, the government of Nigeria has introduced many measures to encourage investments, productivity and economic growth. India should recognize that the effects of these can be seen in the growth now occurring in the productive sectors, the reduction of the debt burden and the stabilized exchange rate of the Naira. The current and ongoing privatization drive is also a measure taken by the government of Nigeria to disengage itself from private-sector oriented activities, which then leaves the government in the role of facilitator and ensures concentration on the provision of incentives, policy and infrastructure necessary to enhance the development of the private

sector's role as an engine of economic growth.²⁴ These are verifiable facts which Indian business communities should be encouraged by the Indian Government to see the reason why investment in Nigeria will truly enable them to reap the benefits of economic reforms abundantly.

It is equally important to note that Nigeria has an industrial policy focused on the following areas :

- (a) Generation of productive employment
- (b) Increased productivity
- (c) Increased export of locally manufactured goods
- (d) Geographical dispersal of industries
- (e) Improved technological skills and capability available in the country
- (f) Increased local content of industrial output by looking inward for supply of basic and intermediate inputs
- (g) Attract direct foreign investment
- (h) Increased private sector participation

Consequently, the Government of Nigeria has demonstrated the will to implement the market-oriented reforms urged by the IMF, such as to modernize the banking system, to curb inflation by blocking excessive wage demands. As a result, the latest statistics on Nigeria's economy show that the country is experiencing a strong and healthy growth. Furthermore, for the first time in decades, the non-oil sectors are growing significantly faster than the oil sector. Apparently, the successful and credible economic reforms of the government have re-established confidence in Nigeria as a foreign investment location. Accordingly, the latest review of the Nigerian economy by the International Monetary Fund (IMF), suggests that Africa's most populous country is currently experiencing a major economic recovery. This was when the IMF mission presented its conclusions on macroeconomic trends in Nigeria during 2004 and 2005 at Abuja²⁵.

Expectedly, Nigeria and India as partners in economic development need to do more in all areas of economic and technological cooperation in order to overcome the numerous challenges posed by the globalization of the world economy. Historical facts must not be forgotten, because Mahatma Gandhi of blessed memory, the father of modern India, who defeated the British colonial

masters of India with his *ahimsa* (non-violent struggle), started his political crusade in Africa. He foresaw the necessity of cooperation between India and Africa when he decidedly positioned India to help Africa in the fight against colonialism and apartheid during the freedom struggle period. Consequently, all post-independence Indian leaderships have always assisted Africa in all human developmental programmes. Now the struggle is for economic emancipation and the need for greater cooperation which can never be overemphasized. India must use all her wisdom by strategizing a greater economic agenda for Nigeria with the sole aim of exploiting the numerous opportunities in the Nigerian economy.

CHAPTER IV

COOPERATION IN EDUCATION

Education, more education, education made perfect, is the only panacea for our country's ills and evils. With more of real education, we can easily raise the general level of intelligence of its teeming millions; create in its future generations, habit of clear and deep thinking and of appreciating new values, and turn the acquisitive impulse of its people from its present direction to the direction of truth. It is only in such circumstances that our countrymen would understand their surroundings better and make up their minds to come in line with the other advanced countries of the world in matters special, industrial and economic, and put an end to their senseless quarrels over trifles, and take to pursuit of ideals that will bring them happiness²⁶. Educational reform is an ongoing process in Nigeria, but the pursuit of "real education ideals" will surely bring it closer to the giant step taken by India that catapult it to the enviable position which confers on it recognition and respect worldwide in its monumental technological growth. Nigeria needs to study India's reformed educational system with the sole aim of achieving similar goals.

India and Nigeria as partners in economic development must harness all resources toward building a very strong educational base to match that of India, this becomes necessary because "the highest expression in the life of a nation must be its intellectual eminence and its power of enriching the world by advancing the frontiers of knowledge. When a nation has lost this power, when it merely receives and has nothing to give, then its healthy life is over and it sinks into a degenerate existence which is purely parasitic".²⁷ Nigeria must also take into cognizance, the fact that a change in the style of teaching activity is the sine qua non for achieving the transition from a traditional form of learning, in which a substantial section of the pupils were condemned to failure, to a participatory, formative and rounded

learning process²⁸. Appendix 'C' explains the traditional learning process/formative and rounded learning process. Nigeria, therefore, needs to seek greater cooperation with Government of India's Ministry of Education as it currently does not appear in the List of countries that have signed memorandum of Educational Exchange Programme (EEP) with Government of India See Figure 4.

**LIST OF COUNTRIES WITH WHICH INDIA HAS SIGNED
EEPs/MOU FOR COOPERATION IN THE FIELD OF EDUCATION**

	NAME OF THE COUNTRY	EEP SIGNED ON	DATE OF VALIDITY
1	ARMENIA	03.10.2002	01.10.2008
2	AUSTRALIA	23.10.2003	22.10.2008
3	CHINA	23.06.2003	22.06.2006
4	GUYANA	25.08.2003	24.08.2008
5	HUNGARY	03.11.2003	02.11.2008
6	ISRAEL	09.09.2003	08.09.2008
7	MEXICO	09.07.2002	08.07.2007
8	MONGOLIA	09.07.2002	08.07.2007
9	MYANMAR	02.11.2003	Not Specified
10	TANZANIA	27.04.2003	26.04.2008
11	SYRIA	15.11.2003	14.11.2008
12	UZBEKISTAN	05.04.2005	04.04.2010
13	NEW ZEALAND	10.04.2005	18.04.2010
14	THAILAND	03.06.2005	02.06.2010
15	SRI LANKA	10.06.2005	Signed copy of EEP has not been received so far.

Source: Government of India/Ministry of Education Figure 4.

In a world based on science and technology, it is education that determines the level of prosperity, welfare and the security of the people.....²⁹. Nigeria in her quest for economic and technologic development must without further delay sign an educational cooperation memorandum with India so as to promote developments in the following areas :

- (a) **Science & Technology Cooperation.** The collaborations in selected areas of mutual interest with India's centers of excellence, like the Indian Institute

of Science (IISc) Bangalore could be tasked with development and implementation of R&D programmes in Nigerian Universities. Mutual areas such as, Asymmetric synthesis, Organo-metallic and Green chemistry would be of great importance to Nigeria's scientists. Other mutual areas of interest would be identified by both countries' Science Commissions. In addition, joint collaborative projects with substantial funding will enable the much desired technology transfer in most desirable areas.

(b) Infrastructure Development

Sophisticated analytical instruments are vital for pursuing research in many areas of modern science and technology. These vital instruments are lacking in Nigeria's centers of excellence. Nonetheless, Nigerian scientists need to have access to such instruments to enable them to pursue R&D activities requiring such facilities in order to keep pace with developments taking place globally.

(c) Manpower Development

Nigerian Science Commission needs to focus on schemes that facilitate encouraging, supporting and nurturing Science Students and Young Scientists in a coordinated manner. The Nigerian Science Commission in collaboration with the Indian Science Commission should for instance focus on broad subject areas, namely, Physical Sciences, Chemical Sciences, Mathematical Sciences, Life Sciences, Engineering Sciences and Earth & Atmospheric Sciences.

(d) Establishment of Centers for Excellence

Through Educational Entrepreneurship Development, the Nigeria University Commission (NUC) has granted permission to many private individuals and organizations licenses to establish universities and colleges of education all over Nigeria. One interesting example is that of ABTI-AMERICAN UNIVERSITY (AAUN) a new university in northeast Nigeria based in Yola. The institution enrolled its first class of 200 students in 2005. The Institution Authority was proud to announce that; "AAUN is the first American-style University in sub-Saharan Africa. Our mission is to offer a world-class, American style education to students who do not wish to spend four years studying in the United States." Also, "AAUN is intended to be the first world-class university in West Africa and will be one of the premier universities on the continent"³⁰.

Nigeria, a massive African nation, is organised into 36 states and a federal capital territory in Abuja. Courtesy of the oil boom years of the 1970s, tertiary education was expanded to reach every subregion of Nigeria. The Federal Government and the State Governments were previously the only bodies licensed to operate universities in Nigeria. Recently, licenses have also been granted to individuals, corporate bodies and religious bodies to establish private universities in Nigeria. The NUC is the major accreditation body that enforces uniform standard and sets admissions capacity of every University in Nigeria. Nigeria with its population of over 140 million people and with only sixty nine universities and colleges of education still requires more educational institutions in order to achieve the millineum educational goals. Appendix ‘D’ shows the list of Nigerian universities and colleges of education.

Nigeria is in dire need of educational centers of excellence if it is to achieve the desired goals of educational standard required in the ever increasing global educational competition. India must assist Nigeria in this all important area of economic development sector. This could only be possible when Nigeria endeavours to sign the all important EEP memorandum with the Government of India of which it is yet to do so. India with its track record of educational prowess in all fields of education will then be required to encourage some of the top ten universities in India (if not all) to establish collaboration with NUC centers of excellence in Nigeria. A closer look at the list of top ten Indian universities with the type of courses offered, detailed in Appendix ‘E’ will convince the doubting Thomases that India’s centers of educational excellence could match if not exceed the challenges posed by the authorities of AAUN in the West African standard of education. It is equally understandable that Nigerian students that could not finance or afford four years stay in India could achieve their ambitions of obtaining world class education in Nigeria from India’s centers of excellence in Nigeria. What more could anybody ask from an educational memorandum between Nigeria and India? Africans have a saying that “A word of elders is the word of wisdom”.

CHAPTER V

MILITARY COOPERATION

A Perspective on Grand Strategy

The word strategy is derived from the Greek word “Strategeos” meaning General. Though the word strategy is now universally used, it was, however, in olden days intimately related to Generalship and war. Even Carl Von Clausewitz in his treatise on war defines strategy as “The employment of the battle as the means towards the attainment of the object of the war”. So strategy has to do

with nothing but war. Strategy is thus employment of battle to gain the ends of war. Strategy, therefore, gives out the aim, purpose and broad framework of the intended war³¹. Grand strategy is the strategy of a nation to safeguard its national security interests. It is spelt out by the apex political body i.e. the Government. It can be defined as the art and science of developing and using political, economic, diplomatic, psychological and military means both during peace and war, to safeguard national security interests.³²

Components of Grand Strategy

There are basically two major components of grand strategy dealing with national security interests. One component addresses the combat potential of a nation to go to war based on the perceived and analyzed threat. The other component addresses instruments of national power other than military through which national objectives can be achieved³³. Some of these are :

(a) Diplomacy

At times an emerging threat can be checked and stalled through effective diplomatic strategy. India brought its diplomatic might to bear at the last World Trade Organization (WTO) summit in Brazil. This was when Developing Nations at the summit felt economically cheated by the Developed Nations tactics of agricultural subsidies to their local farmers. While arm twisting developing nations to not provide subsidies to their poor local farmers, what an irony? India's diplomatic strategy at the summit saved the day by stalemating the outcome of the summit in favour of the Developing Nations.

(b) Economic Strength

The ability to wage war, as well as to influence events in the world without using military power depends to a large extent upon a nation's economic wealth. Nigeria in Africa particularly, the sub-region of West Africa, depends entirely on the Nigerian economy. This is because Nigeria has the most developed economy in Africa second only to South Africa, courtesy of large oil deposits and highly trained manpower in the country. Nigeria under the umbrella of the Economic Community of West Africa (ECOWAS) single handedly financed the peace keeping efforts in Liberia and Sierra Leone during the 1990s war period. Also, Nigeria single handedly restored democracy in Sierra Leone by bringing back President Tijjan Kabba to power in 1997 who was the democratically elected President that was earlier deposed during a coup by his military officers. Nigeria at one point

or the other has used its financial and, or military power to bring peace and stability in almost all the countries of Africa. Nigeria is able to influence events in Africa because of its economic strength.

- (c) **Technological Base.** Harvard scholar Paul Kennedy in the *Rise and Fall of Great Powers* (1989) expressed the view that the productive and technological base is the foundation of national power. Growth and development of technology is directly related to economic growth of a nation. Higher economic growth provides higher revenue for investment in R&D. Red Army Marshal Zhu De supplements this by his statement, “The kind of war to fight depends on what type of arms we have”. The type of arms depends on the type of technology that a nation invests in³⁴.
- (d) **Social Growth and Development.** To have a military that is modern and advanced requires a nation of people who are highly educated and able to absorb and use technologies to their advantage. Technological and economic growth is directly interlinked with social growth. They all complement each other. Sound educational base provides nations with the competitive edge over their rivals³⁵.

India and Nigeria are partners in economic development in the real sense, taking into consideration all the components of grand strategy. Diplomatically, India and Nigeria have been working together in all international organizations be it United Nations, South-South Cooperation and Non-Aligned Movement. During the Independence struggle period (most of which were military struggles) in Africa, India and Nigeria have played a significant role by waxing their diplomatic muscle to crush the imperialist powers in Africa. Also during the terribly inhumane regimes of apartheid in South Africa, Namibia and Zimbabwe which were supported by conscienceless Western imperialist powers that India and Nigeria were conferred with the status of frontline states, an honour well deserved because of their relentless efforts at dismantling the Apartheid system in Africa.

Military cooperation between India and Nigeria has been an essential part of economic development of both countries. Both Indian and Nigerian Governments should expand the horizon of military cooperation which would impact positively on the economic development of both countries. There are numerous economic military cooperation areas, but the following require immediate attention:

- (a) **Nigerian Army (NA)** The principal role of the army is to safeguard the territorial integrity of Nigeria against external threats. Furthermore, the NA has also been entrusted with the protection of the country against internal

security threats. Currently, internal security threats in Nigeria are very real. This is as a result of the emergence of various tribal militias and religious intolerance among the two major religions of Islam/Christianity which very often disrupt economic activities resulting in the loss of millions, sometimes billions of dollars. Consequently, the NA is spread thin all over the country in order to contain this reoccurring security threat. Additionally, the NA is currently heavily involved in 8 different peace keeping and peace enforcement missions in Africa. Undoubtedly, all the NA equipment most of which is obsolete is in dire need of overhaul or outright replacement if the NA is to perform optimally in all the overwhelming operations it is undertaking. Indian manufacturers of military hardware have been producing various world class military equipment which is operationally suitable for Africa. Indian manufactured military equipment is favourably cheaper and more durable compared to others. The Nigerian Government needs to consider the option of purchasing Indian military hardware in large quantity in order to properly equip the NA so that it can carry out its responsibilities adequately.

(b) **Nigerian Navy (NN)**. The NN's primary task is the defence of Nigeria's vast coastal areas and its richly endowed Exclusive Economic Zone (EEZ). The NN has done creditably well in carrying out this important task. However, the recent increase in oil bunkering, outright theft of crude oil and sabotage against oil installations is overstressing the limited naval warfare assets. The Nigerian EEZ is vast, coupled with the presence of offshore oil, gas fields and large traffic of Merchant vessels; the NN works round the clock to achieve optimum results in the defence of Nigeria's biggest economic sector. The Indian Government should assist Nigeria with a special strategic economic programme aimed at modernization of the entire NN fleet. This joint strategic economic programme of modernizing the NN will definitely boost the morale and enhance its capacity to secure Nigeria's EEZ, thus, saving millions of dollars daily.

(c) **Nigerian Air Force (NAF)**. The NAF's primary role is the defence of Nigeria's Air Space and to render assistance to civil authority in disaster management and other related national or international assignments. The tactical doctrine of the NAF has always been determined by three factors: its equipment, the adversary's equipment and lessons learnt from other operations.

In line with its twin roles of providing tactical support to the other services and conducting air operations at both tactical and strategic levels, the NAF has an ambitious modernization programme that is tailored toward updating its inventory of aircraft with state-of-the-art platforms, equipment and retiring its obsolete fleet so as to create a force structure best suited for its roles. Consequently, as a result of the favourable economic cooperation between Nigeria and India, Hindustan Aeronautics Limited (HAL) should formulate a strategy that would make it a formidable partner in the NAF modernization programme. HAL products are very competitive in the international market and are also best suited for operation in the African climate. Therefore, the Indian Government should propose the sale of two Squadrons of the Advance Light Helicopters (ALH)-DHRUV and two Squadrons of the Light Combat Aircraft (LCA)-TEJAS to the Nigerian Government. Conversely, the Nigerian Government should negotiate the sale of NAF's entire fleet of JAGUAR aircraft (that are relatively new but are grounded due to lack of spare parts) to the Indian Government which produces spares under license and operates a large fleet of the aircraft.

(d) **Training.** The training of NA, NN and NAF personnel in Indian Military Institutions has a long victorious history of success. This is because of the consistent outstanding performance of Nigerian military personnel in India. This training success story should be taken to a higher level by encouraging the exchange of specialized expatriates for Army, Navy and Air Force between both countries; this will enhance professionalism in the defence of democracy.

Concept of Military and Economic Cooperation

The security of post- Cold War Europe demands a broader systemic definition of the relationship between the economic and military dimensions of security; it requires that the economic dimension be treated as an integral part of the overall security system rather than as an adjunct to the military dimension of security at the national level. The concern embedded in this conceptualization of economic security is that the international economic system be constructed in such a manner that it creates a stable and secure environment, supporting not only the political and military sectors of interstate relations but the economic sectors as well.³⁶ India as an economic power should strategise policies of economic cooperation that embedded military cooperation while dealing with African allies particularly Nigeria, It is hoped that the strategised policies will promote the institutionalization of democracy which will protect the political, economic and military sectors in Nigeria.

CHAPTER VI

CONCLUSION AND RECOMMENDATIONS

The Nigeria-India economic, diplomatic and cultural relationship has come a long way. Both countries, although former British colonies, were at the forefront of the world-wide anti-apartheid and anti-colonial struggle. Both countries shared a common vision and a firm conviction that they have a pressing duty to eradicate poverty and to place their countries, individually and collectively, on the path of sustainable growth and development by actively participating in global economy and body politics.

Nigeria's quest for greater economic partnership with India is for national development. India needs to strategically double its effort at exploiting the already appreciating Nigerian economy. Likewise, Nigeria requires the considerably cheaper Indian expertise in agriculture, commerce, trade, education and military hardware. Nigeria's quest for economic development in partnership with India can be achieved through the numerous memorandums of understanding and treaties already signed by both Governments.

Nigeria like India has a vast rural population and agriculture is critically important. India's Green Revolution resulted in saving land and forests, since productivity and not area expansion has been the pathway of increasing production. What land hungry, but population rich countries need is the enhancement of productivity in land without associated ecological or social harm. Therefore, the African green revolution like that of India should become an ever-green revolution rooted in the principles of ecology, economics, social and gender equity. Nigeria and Africa in general need to examine the secret of India's success in this context if the continent is to survive the war against hunger and poverty.

Nigeria's trade policy is an extension of her foreign policy that is usually cemented through Bilateral and Multilateral Trade Agreements with many countries worldwide. It is heart warming to state that a few years ago; Nigeria was India's 5th largest trading partner in Africa, ranking after South Africa, Egypt and Kenya. But today, Nigeria has moved to number one position. This is because bilateral trade last year alone peaked to US \$3billion, the largest on the continent of Africa.

Nigeria is the largest oil producer in Africa and the tenth largest in the world, averaging 2.5 million barrels per day (bbi/d) in 2005. The Nigerian government has two major funding arrangements for oil production in the country-joint venture

(JV) and production sharing contract (PSC) arrangement. Production from JVs accounts for approximately 95% of the country's crude oil production. Indian Oil Companies are big enough to participate in this lucrative business.

India should without further delay encourage the Indian big time investors and major manufacturing companies to establish their presence in CEPZ in Nigeria. This is because of the world class facilities that are second to none and the favourable economic reports of the IMF which is a result of the transparent economic reforms embarked upon by the Government of Nigeria.

India and Nigeria as partners in economic development must harness all resources toward building a very strong educational base to match that of India. This has become necessary because “the highest expression in the life of a nation must be its intellectual eminence and its power of enriching the world by advancing the frontiers of knowledge. When a nation has lost this power, it sinks into a degenerate existence which is purely parasitic”.

Grand strategy is the strategy of a nation to safeguard its national security interests. It is spelt out by the apex political body i. e. the Government. It can be defined as the art and the science of developing and using political, economic, diplomatic, psychological and military means both during peace and war, to safeguard national security interests. India as an economic power should strategise policies of economic cooperation that embedded military cooperation while dealing with African allies particularly Nigeria because of the usual huge financial commitment of military cooperation. It is hoped that the strategised policies will promote the institutionalization of democracy which will protect the political, economic sectors and enhance the military's capabilities in Nigeria.

Findings

The general and specific findings of this study on Nigeria- India Partners in Economic Development reveal that:

- (a) Policies of economic development are crucial tools in building a “sustainable democracy”, and that is the only positive means which can support people-oriented policies. Hence, a strong democratic Nigeria is a dependable ally to India.
- (b) There are a lot of areas of agricultural cooperation between Nigeria and India, particularly in land management and water control system,

improvement of rural infrastructure, increase in food supply and agricultural research and technology.

- (c) India's highly skilled manpower and globalised economy coupled with its technology of processing agricultural and mineral resources must play a greater role in the economic development of Nigeria.
- (d) India the great African ally is lagging behind China in the exploitation of economic activities in Africa.
- (e) Lasting trade ties cannot be established without going beyond the realm of imports and exports. It has to be forged and fostered in a cooperative spirit and by being partners in economic development through sharing experience of development in nation building.
- (f) Nigeria's quest for educational cooperation with India can become a reality only when she signs the memorandum of Educational Exchange Programme with Government of India.
- (g) In a world based on science and technology, it is education that determines the level of prosperity, welfare and security of the people.
- (h) India and Nigeria need to work harder as partners in economic development in the real sense, taking into consideration all the components of grand strategy.
- (i) Indian manufactured military hardware is favourably cheaper, more durable and best suited for operation on the African continent.
- (j) It is hoped that the strategised policies between our two great countries will bring prosperity to our people and help promote the institutionalization of democracy in Nigeria.

Recommendation

It is recommended that:

- (a) India needs to double its effort at dominating the already appreciating economic development partnership with Nigeria. It is especially important now because India's industrial outputs and intermediate technologies are best suited for Nigeria's vibrant market which is the biggest on the continent of Africa. This will also upset balance of payment which favours Nigeria constantly.

- (b) Rain fed agriculture does not permit high-yield varieties of crops to achieve their full production potential. Accordingly, Nigeria's state Governments concerned must as a matter of urgency link up with India's experts in soil fertility and irrigation. Because cooperation in the agricultural sector will enhance local farmers capacity to raise output on a sustainable scale that will contribute to the reliability of food supplies.
- (c) The Nigerian Government must improve rural infrastructure by investing in more rural roads, storage facilities and marketing strategy.
- (d) Mechanization of agriculture system in Nigeria could be dramatically improved by acquiring large quantity of India's relatively cheap machinery and farm implements.
- (e) It is vitally important to disseminate to the local communities the latest method and techniques of farming acquired from India through cooperation in R&D.
- (f) Government of India should encourage companies and investors to take full advantage of opportunities offered by the economic climate condition in Nigeria.
- (g) India's energy security concern can be substantially catered for by Nigeria's vast oil and gas resources. India will therefore need to invest more in Nigeria's oil and gas economic sector.
- (h) Nigeria must without further delay sign EEP with Government of India.
- (i) India is strongly urged to establish more manufacturing companies in CEPZ in Nigeria.
- (j) India is hereby requested to prompt some of the top ten universities in India (if not all of them) to establish collaboration with NUC centers of excellence in Nigeria.
- (k) Indian Defence Industries should establish Joint Ventures with Nigerian Defence Industries for the main purpose of meeting the Nigerian Armed Forces Defence Requirements and Technology Transfer in manufacturing of military hardware.

The hypothesis which stated that "India's increased economic ties with Nigeria will play a critical role in the country's national development," has been proven in a very logical sequence. The onerous task of proving this

hypothesis was achieved through factual comparative data analysis of economic and trade indices. Transparently, the data presented throughout this thesis are both qualitative and quantitative.

CONCLUSION

In conclusion, it is important to understand that the relationship between sustainable development and environment is really one of complementarity and inter-dependence. Thus, economic growth, poverty alleviation, proper management of natural resources and ecological protection are all mutually inter-dependent facets of the ultimate goal of development. The new paradigm of development has led to economic dimension becoming a major recognizable element in our development programmes.

There is consensus that globalization is driven and dominated by economics and related cooperation such as the economic fraternity between India and Nigeria. Interestingly, the IMF defines globalization as ‘the growing economic interdependence of countries worldwide through increasing volume and variety of cross-border transactions in goods and services, free international capital flows, and more rapid and widespread diffusion of technology. The Nigeria-India Partnership in Economic Development concept goes much deeper than the ordinary as sought after by this thesis.

The good people of India and Nigeria have been doing business for a long time and Indian companies are flourishing in Nigeria. It is therefore prudent to state that the implementation of all the recommendations from this thesis will bring enormous benefits to both Indians and Nigerians.

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Appendix 'A'

Refers to Chapter II, Page 108

Green Revolution

The introduction of high-yielding varieties of Indian seeds after 1965 and the increased use of fertilizers and irrigation are known collectively as the Indian Green

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Revolution, which provided the increase in production needed to make India self-sufficient in food grains. The program was started with the help of the United States-based Rockefeller Foundation and was based on high-yielding seeds; wheat produced the best results. Production of coarse grains—the staple diet of the poor—and pulses—the main source of protein—lagged behind, resulting in reduced per capita availability.

The total area under the high-yielding-varieties program was a negligible 1.9 million hectares in FY 1960. Since then growth has been spectacular, increasing to nearly 15.4 million hectares by FY 1970, 43.1 million hectares by FY 1980, and 63.9 million hectares by FY 1990. The rate of growth decreased significantly in the late 1980s, however, as additional suitable land was not available.

The major benefits of the Green Revolution in India were experienced mainly in northern and northwestern India between 1965 and the early 1980s; the program resulted in a substantial increase in the production of food grains, mainly wheat and rice. Food grain yields continued to increase throughout the 1980s, but the dramatic changes in the years between 1965 and 1980 were not duplicated. By FY 1980, almost 75 percent of the total cropped area under wheat was sown with high-yielding varieties. For rice the comparable figure was 45 percent. In the 1980s, the area under high-yielding varieties continued to increase, but the rate of growth overall was slower. The eighth plan aimed at making high-yielding varieties available to the whole country and developing more productive strains of other crops.

The Indian Green Revolution created wide regional and interstate disparities. The plan was implemented only in areas with assured supplies of water and the means to control it, large inputs of fertilizers, and adequate farm credit. These inputs were easily available in at least parts of the states of Punjab, Haryana, and western Uttar Pradesh; thus yields increased most in these states. In other states, such as Andhra Pradesh and Tamil Nadu in areas where these inputs were not assured, the results were limited or negligible, leading to considerable variation in crop yields within these states. The Green Revolution in India also increased income disparities : higher income growth and reduced incidence of poverty were found in the states where yields increased the most and lower income growth and little change in the incidence of poverty in other states.

1995 data : green revolution India

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Appendix 'B'

Refers to Chapter III, Page 114

African Oil Production by country, 1993-2003 (thousand barrels/day)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Angola	504	554	633	716	741	731	745	746	742	905	885
Benin	3	2	2	2	1	1	1	1	1	-	-
Cameroon	130	115	106	110	124	105	95	88	80	72	68
Chad	-	-	-	-	-	-	-	-	-	-	40
Congo Brazzaville	185	185	180	200	225	265	293	275	271	259	243
Congo (DRC)	258	25	28	30	28	26	24	25	24	23	22
Equatorial Guinea	5	5	7	17	60	83	100	113	181	237	249
Gabon	305	337	356	365	364	337	340	327	301	295	240
Ghana	-	6	6	7	5	5	6	6	6	6	6
Ivory Coast	-	-	6	16	14	10	10	7	5	10	20
Nigeria	1985	1988	1998	2138	2303	2163	2028	2104	2199	2013	2185
Senegal	^	^	^	^	^	^	^	^	n/a	n/a	n/a
South Africa	8	9	9	8	15	15	32	32	23	20	16
Sudan	2	2	2	5	9	12	63	174	211	233	255

^ Less than 0.5

Source : *Oil and Gas Journal* (2004) *Strategic Analyses* / Jul-Sep 2005.

Appendix 'C'

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Traditional learning process	Formative Learning and rounded Learning process
Learning under pressure (rapid pace)	Differentiated and intensive learning
Imposed learning	Participatory learning, corresponding to the pupil's interests
Learning process that is frustrating for a sizeable proportion of the class	Learning process beneficial to all
Learning oriented towards examinations and competitions	Learning oriented towards achievable goals and performances
Learning focused on the assimilation of knowledge	Learning centered on the application of knowledge and the shaping of attitudes

Source : The Contents of Education; S. Rassekh & G. Vaideanu. p.194.

Appendix 'D'

Refers to Chapter IV, Page 125

List of Nigerian Universities

1. Abia State University, Uturu
2. Anambra State University formerly Anambra State University Of Science And Technology, Uli
3. Ajayi Crowther University, Oyo
4. Babcock University Ilishan-Remo
5. Bell University of Technology Badagry, Lagos
6. Bowen University, Iwo
7. Cetep University, Lagos
8. Caritas University, Enugu

9. City University, Ibadan
10. Covenant University, Ota
11. Crawford University Oye, Ekiti
12. Crescent University Abeokuta, Ogun State
13. Cross River State University of Technology Ekpo-Abasi, Calabar
14. Federal University of Technology Akure
15. Joseph Ayo Babalola University Ikeji-Arakeji
16. Ladoke Akintola University of Technology Ogbomoso
17. Lagos State University
18. Obafemi Awolowo University Ile Ife
19. Ebonyi State University, Abakaliki.
20. Ogun State University
21. Ondo State University
22. Pan Africa University Lekki
23. Lagos (Federal Government)
24. Redeemer University Ede
25. The Federal Polytechnic Idah, Kogi State
26. The Polytechnic Ibadan, Oyo State
27. University of Agriculture, Abeokuta
28. University of Ado Ekiti Ado, Ekiti
29. University of Ibadan, Ibadan
30. University of Horin, Horin
31. University of Lagos, Akoka
32. Wesley University, Ondo
33. University of Nigeria, Nsukka
34. University of Benin, Benin City

35. Ahmadu Bello University, Zaria
36. Bayero University, Kano
37. University of Calabar, Calabar
38. University of Horin
39. University of Maiduguri
40. University of Jos
41. Usman Dan Fodio University, Sokoto
42. University of Port-Harcourt Choba, Port Harcourt
43. University of Abuja
44. Nnamdi Azikiwe University, Awka
45. University of Uyo, Uyo
46. Abubakar Tafawa Balewa University, Bauchi
47. Federal University of Technology, Owerri
48. Federal University of Technology Minnaweb: www.futminna.org
49. Federal University of Technology, Yola
50. Nigerian Defence Academy, Kaduna
51. Micheal Okpara Federal University of Agriculture, Umudika
52. Federal University of Agriculture, Makurdi
53. Rivers State University of Science and Technology, Port Harcourt
54. Imo State University, Owerri
55. Olabisi Onanbanjo University Ago-lwoye
56. Abia State University, Uturu
57. Kogi State University, Ayangba
58. Enugu State University Of Science And Technology, Enugu
59. Ambrose Alli University
60. Kano State University of Technology
61. Adamawa State University

62. Niger Delta University, Wilberforce Island, Bayelsa State
63. Nasarawa State University, Keffi
64. Igbinedion University, Okada
65. Madonna University, Okija
66. Pan-African University, Lagos
67. Benson Idahosa University, Benin-City
68. ABTI University, Yola
69. Igbinedion University Okada, Edo State

Source : Nigerian University Commission-2005

Appendix 'E'

Refers to Chapter IV, Page 125

Best Universities in India, University College Degree Courses

Anna University	Courses:
 <p>Anna University This is one of the premier institutions in South India. It is located in Chennai (Madras) and was established on 4 September 1978 as a unitary type of University. It offers higher education in Engineering, Technology and allied Sciences relevant to the current and projected needs of the society. Besides promoting research and disseminating knowledge gained therefrom, it fosters cooperation between the academic and industrial communities. School Information Page</p>	<p>Civil Engineering, Water Resources, Environmental Studies, Remote Sensing, Mechanical Engineering, Manufacturing Engineering CAD/CAM, Mining Engineering, Management Studies, Electrical Engineering, Electronics, Computer Science, Chemical Eng, Textile Technology.</p>

2. Jaypee University of Information Technology		Courses :
 <p>Jaypee University of Information Technology Located in Wahnaghat Solan, Himachal Pradesh, India (20 kms from Shimla). A State Government University</p> <p>thoroughly recognized by U.G.C & AIU. Our university is associated with University of California Berkeley, U.S.A.</p> <p>School Information Page</p>	<p>B.Tech - Computer Science, Engineering Information Technology, Electronics & Communication, BioInformatics, Biotechnology, Chemical Engineering, Civil Infrastructure.</p>	
 <p>Pondicherry University Pondicherry University was established in October 1985 and is a Central University fully supported by the University Grants Commission. Pondicherry University has been accredited by the National Assessment and Accreditation Council - NAAC (An Autonomous Institution of the University Grants Commission) with FOUR STAR level in 1999-2000 for a period of 5 Years. Pondicherry University has a unique Choice-Based Credit System (CBCS) with Modular/ Unitised courses which break rigidity. Under this system it allows choosing of subjects combination suitable to student's ambition, ability and career plan, permits accumulating credits faster and obtaining PG degree in less than 2 years and continuous evaluation and follow-up programmes take care of individual need. Bachelor Degree, Diploma, Certificate</p>	<p>Schools include; Mathematics & Computer Science, Ecology & Environmental Sciences, Management, Performing Arts, International Studies. Departments include; Biological Sciences, Biotechnology, Chemistry, Commerce, Earth Sciences, Economics, English French, Hindi, History, Physical Education, Physics, Political Science, Sanskrit, Sociology & more...</p>	

& Training/Coaching Programmes, Post Graduate Diploma courses and more. School Information Page	
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4. Rai University	Courses :
 <p>Rai University Rai University has its roots in business and industry with a fifty-year track record of innovation in fields such as information technology, telecommunication, manufacturing and real estate. Our pursuit of world-class education that began two decades ago can now be seen as having come full circle with our present mission and objectives. With over 3,30,000 sq. ft. of building space, spread over its eleven campuses across the country the University offers a wide variety of programs from the pure and conventional to the more modern and career-oriented qualifications. The University has spread its educational arms across the nation with campuses in New Delhi, Mumbai, Kolkatta, Bangalore, Gurgaon, Kosi, Luckow, Behror, Hyderabad, Pune, Bhopal, Pathankot and Dehradun. Rai University provides tuition support to the students registered with University of London External Program for various courses where the lead colleges are London School of Economics, Goldsmiths, Kings and Birkbeck. Rai University offers Edexcel awarded Higher National Diploms (HND) and Higher National Certificates (HNC) in various subject areas as part of its Graduate Professional Diploma Honors and Graduate Professional Diploma, respectively.</p> <p>School Information Page</p>	<p>346 courses in 29 colleges all over India; Business Economics Management (BBA, MSA, BSc (Hons), MSc), Media Film Television, Liberal Arts Social Sciences, Engineering Computing Biotech & Agriculture Fashion Design, Fine Arts, Hospitality Tourism, Insurance, Healthcare, Design & Architecture, Vedic Sciences & Arts, Law, Junior Qualifications.</p>

5. Acharya Nagarjuna	Courses :
<p>Acharya Nagarjuna University Acharya Nagarjuna University is situated between the cities of Vijayawada and Guntur in Andhra Pradesh on the Calcutta and Chennai National Highway (NH-5). Its campus is spread over an area of 293 acres. Besides the campus college, it has two university postgraduate centres - one each at Nuzvid postgraduate centres - one each at Dt.). Its affiliational jurisdiction extends over the three districts of Krishna, Guntur and Prakasam of Andhra Pradesh. It is UGS recognized universty, established in 1976 with a NAAC rating of B++. Degree Programmes include Master of Arts, Master of Business Administration, Master of Commerce, Master of Science, Master of Legal Laws.</p> <p>School Information Page</p>	<p>MA in Economics; MBA; MCom; MA in History; MA Sociology; MA Political Science; MA in Telugu; MSc in Botany, MSc in Zoology, MSc in Physics, Chemistry, Micro Biology, Mathematics; MA in English, MLL.</p>

6. Osmania University	Courses :
<p>Osmania University Osmania University, established in 1918, is the seventh oldest in India, the third oldest in south India and the first to be established in the erstwhile princely state of Hyderabad. Throughout its existence of over eight decades, it has existence of over eight sustained an integrated development of all faculties. It is a multi-faculty and multidisciplinary university and has significantly contributed to the academic and economic development of not only the region but also of the country.</p> <p>School Information Page</p>	<p>Offering rich and varied courses in the fields of Humanities, Arts, Sciences, Social Sciences, Law, Engineering, Technology, Commerce and Buisness Management Information Technology and Oriental Languages.</p>

7. Tezpur University		Courses :
<p>Tezpur University Tezpur University is located in Assam, India and follows a semester system. The academic year starts from 1st August. Each academic programme is so designed as to provide enough flexibility in the choice of courses that the students would like to take. Besides the Elective lists. Proficiency Course - All the Students admitted to Tezpur University in programmes other than PhD, are required to take compulsorily one of the courses from a group of General Proficiency Courses. This includes Remedial English and courses of general nature offered by various departments from time to time. All the students admitted will be given a test on Proficiency in English. Students whose performance in the test is not satisfactory will have to compulsorily take the course in Remedial English.</p> <p>School Information Page</p>		<p>MA, MSc, M. Tech, MCA, MBA, Cultural Studies, Physics, Mathematics, Polymer Science, Computer, Electronics Design Technology, Energy, Processing Technology Seismology, Information Technology, Business Management and more. Ph.D degree is also offered in almost all the subjects.</p>
8. Makhanlal Chaturvedi National University of Journalism		Courses :
 <p>Makhanlal Chaturvedi National University of Journalism Makhanlal Chaturvedi Reshtriya Patrakarita Vishwavidyalaya, Bhopal, was set up by Act Number 15 of 1990 of the Legislative Assembly of Madhya Pradesh. The University is named after Makhanlal Chaturvedi, a renowned Freedom Fighter, Poet and Journalist. The University Grants Commission (UGC), India, has recognized this University as a statutory university. The University is a member of the Association of Commonwealth Universities (ACU), London and the Association of Indian Universities (AIU).</p>		<p>BA (Journalism) MA (Journalism) BSc (IT) MSC (IT) BCA DCA PG DCA MSC (CS) and other Media Courses.</p>

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