

# PEOPLE, PROGRESS, PARTNERSHIP



THE TRANSFORMATION  
OF U.S.-INDIA  
RELATIONS

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*During his March 2004 visit to New Delhi, U.S. Secretary of State Colin L. Powell met with Mrs. Sonia Gandhi.*

AP PHOTO/RAJENDRAN

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# INTRODUCTION

COLIN L. POWELL

D

uring the past few years, we have seen a real change – a fundamental transformation – in relations between the United States and India, the world’s oldest and largest democracies. Thanks to the leadership of President Bush and Prime Minister Vajpayee, relations between our two countries have never been better. We are confident that under new Prime Minister Manmohan Singh’s leadership, the relationship will be strengthened. This very positive on-going transformation has its roots in our common values and interests as democratic societies committed to political freedom, tolerance, representative government and the fight against terrorism.

The United States recognizes the vitality and importance of India to American interests, and we are fundamentally redefining every dimension of our bilateral relationship. As former Prime Minister Vajpayee said, India and the United States are "natural allies." India’s emergence as a rising world power and its development into a mature market economy are significant to the region and the world. As the largest country in South Asia, India has a vital role to play in helping to secure a stable, peaceful and prosperous Asia.

The following pages provide a vivid and human account of the positive shift in cooperation between the United States and India across a broad range of areas, from promoting greater global stability and security, to improving standards of living and quality of life. Today we are conducting intensive and valuable diplomatic exchanges on economic policy, trade and investment, combating proliferation of weapons of mass destruction, strengthening regional security and the global war on terrorism. We are cooperating closely to limit global climate change and preserve the environment and energy resources. President Bush and former Prime Minister Vajpayee announced our commitment to strengthen cooperation in civilian space, civilian nuclear and high technology exchanges and expand our dialogue on missile defense as India moves to improve its export controls and nonproliferation policies. We are partnering on advances that will improve the way we fight disease and improve the quality of our food supply. Together we have opened new levels of cooperation on law enforcement and intelligence sharing. And, importantly, we have continued to



*U.S. Secretary of State Powell says a real change is visible in U.S.-India relations*

REUTERS/STEFAN ZAKLIN

pursue avenues for increasing people-to-people contact. One striking example of the tremendous growth in direct contact between our two great nations is that today India has more men and women studying in the United States than any other country in the world.

The U.S. relationship with India is based on mutual respect and the belief that a secure and prosperous world is a goal worth pursuing together. The United States is committed to intensifying its partnerships with India to meet this objective. This deepened relationship of equals will require attention and hard work. Both countries have demonstrated their willingness to move forward and work together to overcome any difficulties on the road ahead. U.S.-India relations are better today than at any time in the past, and both of our Governments are determined to keep it that way.

It is with great pleasure that Ambassador David Mulford and the U.S. Embassy in New Delhi and Consulates in Calcutta, Chennai and Mumbai present this publication in tribute to the new U.S.-India relationship and to our closer association with one of the world’s richest cultures.



## OVERVIEW A SHARED VISION

*“Well before he took office, President George W. Bush set the goal of improving relations with India: a nation of over a billion people, a dynamic, multi-ethnic democracy; ancestral home of over one-and-a-half million Americans; a critical presence in Asia; a nation of enormous achievement and promise. When Prime Minister A.B. Vajpayee first met President Bush in November 2001, he embraced the objective of transforming our bilateral relationship calling the United States and India ‘natural allies.’ Prime Minister Vajpayee was right. Both our nations seek to stretch the bounds of human knowledge and seize the opportunities of a 21st century world. And both of us recognize that our cooperation can greatly benefit both of our nations and the international community.”*

— Colin L. Powell, U.S. Secretary of State, March 2004

When India blasted its way out of nuclear ambiguity in May of 1998, it would have taken more than an optimist to predict that in a matter of a few years, the chain reaction from the Pokhran tests would reach critical mass with the United States and India signing a landmark agreement to work together in the fields of civilian nuclear technology, space, high-tech trade and missile defense.

The 2004 agreement on promoting high technology commerce between the U.S. and India, appropriately called the “Next Steps in Strategic Partnership (NSSP),” will spur cooperation on the “quartet” issues of civilian nuclear energy, civilian space programs, high technology trade and dialogue on missile defense. But most





*Secretary of State Colin L. Powell interacting with university students in New Delhi during a TV dialogue*

importantly, it puts the U.S.-India relationship on the strategic level and signifies the extent to which the two nations have traveled together. Even a few years ago, India was denied access to U.S. high technology, and it took both countries a couple of years of complex negotiations to open up a sector that has far-reaching implications for the new international order.

The transformation of relations between the U.S. and India is a story of two estranged democracies becoming two engaged nations, working together to carve out new opportunities in the world, based on common values and common interests. U.S. Ambassador to India David C. Mulford has said: "Over the past two years we have witnessed the beginning of a transformation that will open opportunities for our two countries that would have been unimaginable a few years ago. We have taken important steps forward to bridge previous mistrust and lay the foundation for what I believe will be a crucial partnership for the 21st century." He calls on the need to build the strategic partnership into a truly comprehensive alliance that spurs all sectors of both societies. And former External Affairs Minister Yashwant Sinha has said: "The vision of the two largest democracies, placed in different situations, but linked by strong bilateral ties, bringing diverse perspectives to address their increasingly common challenges, represents an exciting possibility in global affairs."

A guiding document in the U.S.-India transformation is the 2002 National Security Strategy of the U.S., which staked out the path for future cooperation: "The United States has undertaken a transformation in its bilateral relationship with India based on a conviction that U.S. interests require a strong relationship with India. We are the two largest democracies, committed to political freedom protected by representative government. India is moving toward greater

economic freedom as well. We have a common interest in the free flow of commerce, including through the vital sea lanes of the Indian Ocean. Finally, we share an interest in fighting terrorism and in creating a strategically stable Asia."

The 1998 nuclear tests pushed U.S.-India relations to a low point, and strong political and economic imperatives were needed to pull out of it. These were provided in the nine rounds of talks between former Indian Foreign Minister Jaswant Singh and former U.S. Deputy Secretary of State Strobe Talbott. Not only did they make the Indian Government more sensitive to the proliferation concerns of the U.S., conversely, they gave the Indian Government an opportunity to explain to the U.S. several key aspects of its unwritten strategic doctrine and its security concerns. The singular importance those year-long talks had for the future of U.S.-India relations was groundbreaking to say the least. After almost half a century of talking "at" each other, India and the U.S. grew accustomed to talking "to" each other. As Talbott said, "We're getting better at disagreeing without being disagreeable." It was the longest spell of high-level dialogue that the two countries had engaged in in their history.

The consequent understanding led to the first softening of the U.S. sanctions that had tightened against India following the tests. However, the Singh-Talbott talks floundered on one simple issue: India hesitated to sign the Comprehensive Test Ban Treaty (CTBT) after the CTBT ratification was voted

NARENDRA BISHT/INDIA TODAY



*Dr. Manmohan Singh, the architect of India's economic reforms, is the country's new Prime Minister*

down by the U.S. Senate in October 1999. The U.S., too, pulled back from freeing up high-technology exports to India.

Nevertheless, the visit of the then U.S. President Bill Clinton to India in March 2000 was a watershed in U.S.-India relations. Addressing a rare joint session of the Indian Parliament, Clinton talked about the lessons India teaches the world: "The first is about democracy. There are still those who deny that democracy is a universal aspiration; who say it only works for people of a certain culture, or a certain degree of economic development. India has been proving them wrong for 52 years now... a second lesson India teaches is about diversity... under trying circumstances you have shown the world how to live with differences ... that tolerance and mutual respect are in many ways the keys to our common survival."

The process of transforming U.S.-India relations was speeded up under the Bush Administration. The new U.S. President decided early on in his tenure to "get the big relationships right" and counted India among them. The

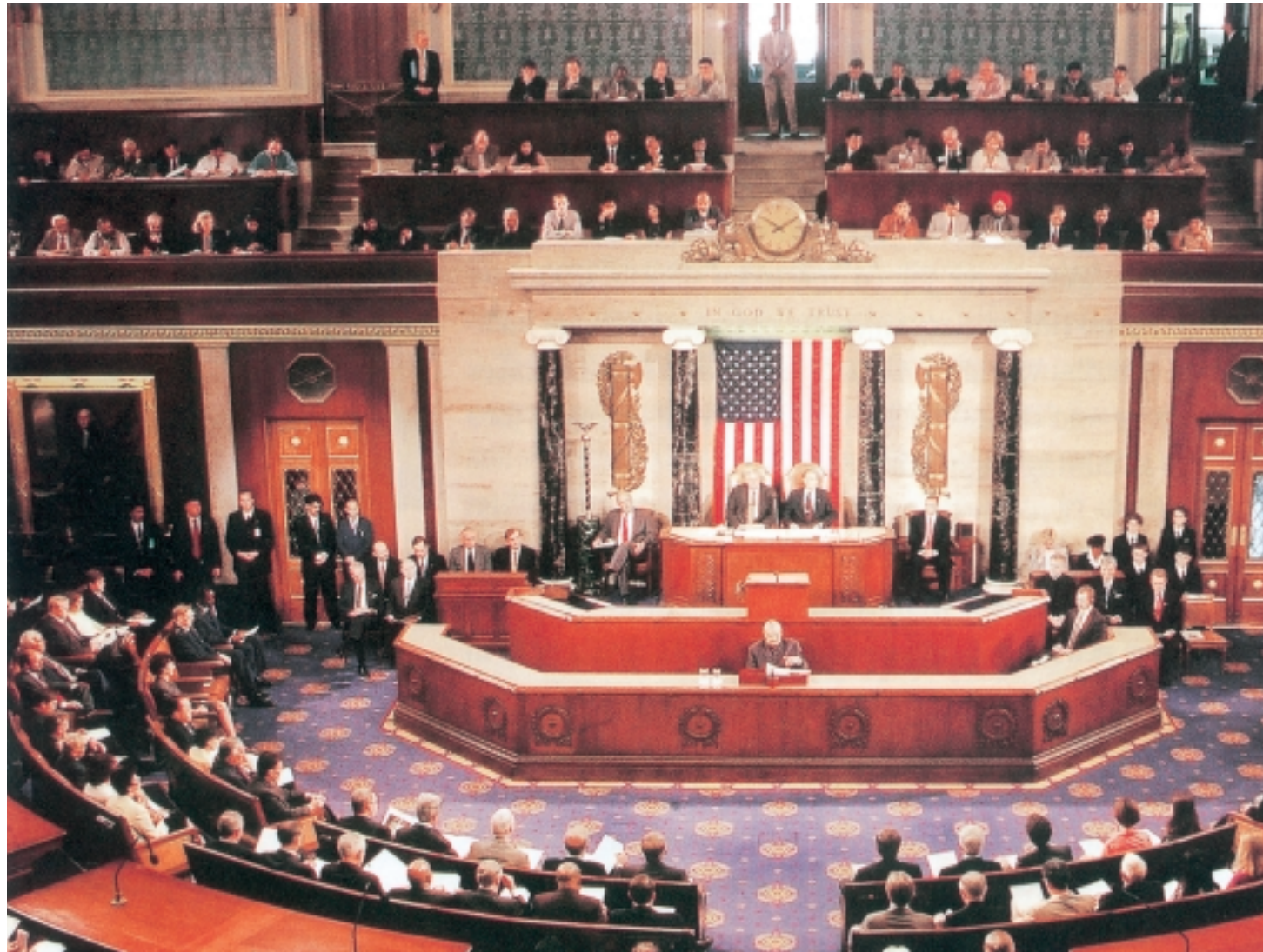


appreciation of the salience of India in the larger strategic picture of the new world was premised on several new realities. The Cold War was over. The growth of the Indian economy and its increasing importance in the new global knowledge-based economy also brought it closer to the United States. And India's strategic importance in the maintenance of Asian stability was clear to the Bush Administration from the start.

The Bush Administration embarked on an ambitious review of decades-old American policy to integrate India into its strategic doctrine. Soon it was evident that American and Indian leaders were thinking along similar lines and building a new partnership based on a shared commitment to freedom, prosperity and security.

The first signs were encouraging. The U.S. Government promised to lift sanctions on India without reference to the CTBT or any other nuclear benchmarks except an underlying assurance of tighter export controls. India, too, took the bit between its teeth when it announced an endorsement of Bush's national missile defense program unveiled on May 1, 2001. One of the first visitors to India from the new administration was Deputy Secretary of State Richard Armitage. His visit and a successful trip by then Foreign Minister Jaswant Singh to Washington helped to kick off a "feel-good" factor in the U.S.-India relationship, a factor that was strengthened after the September 11, 2001 terrorist attacks against the U.S.

While the U.S.-India relationship has acquired a life of its own, even during the ebb of official relations there have been strong people-to-people contacts between the two countries. The American Dream enthused many Indians, and today there are perhaps more than two million Indians in the U.S.—the second largest group of legal immigrants after Mexico. Indian students overtook Chinese to be the largest group of foreign students in the U.S., and the Indian Caucus in the U.S. Congress is the largest group of U.S. lawmakers friendly to any country.



*Prime Minister A.B. Vajpayee addressing the joint session of the U.S. Congress in September 2000*

JOHN WICART

With the Indian economy opening up, U.S. companies have established profitable linkages with India, Inc., and bilateral trade is progressing. However, there remain issues of market access and tariff barriers in India, which are gradually being addressed.

Technology and services have clearly been the drivers of the economic relationship, and many U.S. companies have taken advantage of India's huge pool of skilled brainpower. Even as Silicon Valley start-ups and American IT companies are being powered by expatriate Indians in India, the offshore business model is giving rise to political debate over a complex, multi-layered relationship spanning business process outsourcing that includes call centers, high-end software and product development for American companies.

U.S. officials have noted that the U.S. market remains much more open to Indian firms and their products than the Indian market is to U.S. trade and investment. And market access issues still need to be addressed. "While we are India's largest trading partners, our bilateral trade remains far below what it could be," said U.S. Assistant Secretary of State Christina Rocca, and added that "improving that situation is one of our primary objectives."

By the turn of the century, the U.S. and India were collaborating closely on a gamut of issues, including global security, the Persian Gulf, international terrorism, HIV-AIDS, counter-terrorism, cyber-security, environment and climate change, energy and WMD proliferation. Meanwhile, McDonald's has become India's favorite "Indian" fast-food chain and Seattle has put together a cricket team. Hindi films are being set in the U.S. and increasing people-to-people contact is becoming a barometer for improving ties. A typical example, the man symbolizing the new dynamic, is Chitresh Das, who teaches the Indian kathak dance form at San Francisco State University and has established the largest kathak institution in North America. But the transformation has affected other aspects of the relationship as well—with the United States Agency for International Development (USAID) working with the Indian Government to improve



the ambient quality of the Taj Trapezium Zone in Agra and the U.S. Embassy giving small grants to NGOs to jumpstart projects that then acquire a life of their own.

“The range and frequency of the India-U.S. dialogue has increased considerably in recent times. But most significantly, it is the atmosphere of our dialogue that has changed. We now address each other with the confidence and candor of friends. This dialogue, based on respect and equality, is successful precisely because we have recognized that there is no fundamental conflict of interest between us,” said Prime Minister Vajpayee.

The transformation of relations between the U.S. and India straddles several sectors. For instance in the area of law enforcement, a new level has been achieved after the events of 9/11. This entailed not only increased information sharing, but also a growing convergence of views on terrorism.

Former External Affairs Minister Sinha enunciated the areas of cooperation when he said, “We have, for the first time, entered into substantive defense cooperation. Our armed forces have established contact, and there are regular exercises and exchanges of growing complexity. Our common concerns on terrorism, transnational crime and cyber crime have led us to establish ties in these areas as well.” Even in the field of aid, relations have taken a new turn, as USAID is now more involved in sharing technologies and building sustainable capacities rather than in the old-fashioned method of giving development assistance.

And this has been most clear in the frequency of high level visits between the two nations. Over the past six years, cabinet-level and senior military officials have traveled back and forth halfway across the globe while tourists, scholars and business people have rapidly filled up the flights in and out of India.

The September 11, 2001 attacks spurred the new understanding between India and the U.S. to the next level. Soon after the attacks, India, which lost some 250 people of Indian origin in the carnage, promised unconditional help to the U.S. Government in the war on terrorism, even the use of Indian military facilities. During Operation Enduring Freedom in Afghanistan, the Indian Navy took up the important mission of escorting and protecting high value shipping through the Strait



*U.S. Ambassador to India David C. Mulford speaks at CII*

SIPRA DAS



REUTERS/LARRY DOWNING

*The vision of global peace and prosperity shared by President George W. Bush and Prime Minister A.B. Vajpayee led to the strategic partnership between the U.S. and India*

of Malacca. This invaluable contribution freed U.S. ships to refocus on other global commitments in the war on terrorism. Moreover, by allowing transiting U.S. Naval ships to use Indian ports for rest and refuelling, India gave the U.S. Navy the logistical flexibility required to conduct its trans-oceanic operations. Allowing over-flight for U.S. Air Force aircraft was another force-enabler contribution by the Indian Government that saved operational planners countless hours.

As the global war on terrorism got under way, it became even more important for an intensive military relationship to develop between the U.S. and India, with the goal of maintaining stability in Asia as the driver. Since 2002, the two militaries have been in ever-closer contact with exercises, exchanges, joint doctrines and procedures and the U.S. emerging as a major defense supplier to India, something that could only be imagined a few years ago. Acknowledging India's terrorist challenges from across its border, the U.S. has also offered to sell sophisticated border management systems while intelligence sharing has reaped benefits in counter-terrorism efforts of both countries. The fact that America's war on terrorism was closely intertwined with India's became

## 1998



- India conducts five nuclear tests at Pokhran.
- Pakistan nuclear tests.
- U.S. imposes sanctions on India in accordance with the Glenn Amendment.
- First strategic U.S.-India dialogue between Jaswant Singh and Strobe Talbott.

## 1999

- Strategic dialogue continues.
- India formulates a draft nuclear doctrine.
- A.B. Vajpayee's NDA government comes to power.
- Indo-Pak conflict over Kargil. Forces withdraw following Prime Minister Nawaz Sharif's visit to Washington.

## 2000

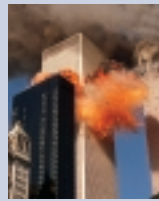


- India and U.S. decide to set up joint working group on counter-terrorism.
- U.S. President Bill Clinton visits India.
- India and U.S. set up Science and Technology Forum.
- Vajpayee visits Washington, addresses joint session of Congress. Signs agreements to cooperate on arms control, terrorism and AIDS.

## 2001



- President Bush takes office.
- President Bush announces Robert D. Blackwill as U.S. Ambassador to India.
- Jaswant Singh is the first Indian leader to meet the Bush Administration leaders.
- India says Bush's missile defense proposals are "significant and far-reaching."
- Deputy Secretary of State Richard Armitage visits India to talk missile defense.
- National Security Advisor Brajesh Mishra visits Washington. Frequency of high-level visits on the rise.



- 9/11 terrorist attacks on World Trade Center in New York and the Pentagon.
- Vajpayee says, "I have assured President Bush that we stand ready to cooperate in the investigations into this crime and to strengthen our partnership in leading international efforts to ensure that terrorism never succeeds again."

## 2002

- U.S. and India engage in unprecedented joint military cooperation.
- U.S. contracts to supply 12 AN-TPQ/37 Firefinder counter battery radars to the Indian Army.
- U.S. actively engaged in helping to reduce tensions in South Asia.
- NRC Chairman Richard Meserve visits India to discuss civil nuclear cooperation.

## 2003



- U.S. and India start new India-U.S. Global Issues Forum.
- Launch of High Technology Cooperation Group.
- In Kashmir, Vajpayee extends "hand of friendship" to Pakistan.
- CJCS General Myers visits India.
- Deputy Secretary of State Armitage and Assistant Secretary of State for South Asia Rocca visit South Asia in an effort to further ease tensions and help foster bilateral dialogue between India and Pakistan. Also, Indian National Security Advisor Mishra meets senior U.S. officials in Washington to discuss security issues.

## 2004

- U.S. State Department welcomes announcement that Indian and Pakistani leaders will launch a composite dialogue.
- Prime Minister Vajpayee and President Bush announce the Next Steps in Strategic Partnership.



- New U.S. Ambassador Dr. David Mulford assumes office in New Delhi.
- Senior U.S. officials, including Secretary of State Powell, Secretary of Health and Human Services Thompson and U.S. Trade Representative Zoellick, visit India.
- Indian voters elect Congress Party coalition and Dr. Manmohan Singh takes office as Prime Minister. U.S. officials congratulate the Congress Party and express their desire to continue building a strong bilateral relationship.

clear when the U.S., not only banned terrorist groups like the Lashkar-e-Toiba, but also India's underworld mafia leader Dawood Ibrahim.

But just as 9/11 transformed U.S.-India relations so, too, did it bring into focus the need for a halt in the flow of cross-border terrorism emanating from Pakistan. During 2002, when India and Pakistan were spiraling toward conflict, the U.S. was actively engaged in defusing the crisis. Both Secretary of State Colin Powell and his deputy, Richard Armitage, carried the clear message to Islamabad and New Delhi that the United States wanted to see a permanent end to crossborder terrorist infiltration targeting India. The U.S. Government also stressed that as India and Pakistan work to resolve their differences, the United States will remain a steadfast friend and supporter of the peacemakers on both sides, and will continue to build strong bilateral ties with each country in its own right.

The U.S. Government welcomed wholeheartedly the subsequent warming of relations between India and Pakistan. "The U.S. has been working very hard to turn our parallel improvement of relations with India and Pakistan into what Secretary Powell has called a 'triangle of conflict resolution.' We do not impose ourselves as a mediator, instead, we try to use the trust we have established with both sides to urge them towards conciliation by peaceful means," said Rocca.

U.S. State Department Spokesman Richard Boucher said in January 2004, "We're pleased that the parties came out with a roadmap for future discussions, and we are pleased that they're committed to increasing their engagement."

The transformation of U.S.-India relations is work in progress, and though tremendous strides have been made thus far, the momentum and quality of this bilateral relationship need constant nurturing. It will take more progress on issues such as economic relations, high-tech and other trade and both countries' commitment to minimizing protectionist tendencies for political gain that will determine the pace and scope of the relationship.

Ultimately, the phrase "natural allies" refers squarely to the fundamental principles of the United States and India: large and functioning democracies committed to political and economic freedom.

Looking at where the relationship can go, Secretary Powell has concluded: "A thriving, peaceful, democratic India is taking its place on the world stage, and the United States looks forward to acting in close partnership with her. In the years ahead I see the U.S.-Indian relationship becoming as rich and vibrant as a 'Bollywood' blockbuster. To be sure, there will be twists and turns of plots and some challenges for the characters to overcome, but I have no doubt there will be a happily-ever-after result for India, for the U.S. and the world community."



## ECONOMIC RELATIONS A FAIR TRADE

In 1991, the dramatic “first generation” economic reforms introduced in India led to a far-reaching transformation in how India was perceived by Americans and American businesses. As the country began moving away from a closed, statist economy to an open, market-oriented one, U.S. interest in India increased, particularly in the information technology (IT) and service sectors. Today, the U.S. is India’s most important trading partner. According to the American Chamber of Commerce, about 1,000 American companies are doing business in India, a 14-fold increase over 1991.

Clearly, the U.S.-India relationship has found a new and dynamic area of partnership. “There is now a greater recognition of the large intellectual talent pool in India. I no longer have to ‘sell’ India,” says Scott R. Bayman, President and CEO, GE India. As the head of one of the fastest growing U.S. conglomerates in India, Bayman should know. GE India has grown rapidly during the 1990s and has 31 businesses with annual Indian sales of Rs 4,600 crore (\$1 billion). But it is also true that the balance of trade remains heavily in India’s favor and that U.S. investment and exports to India have been relatively flat. Clearly, more market opportunities for American goods and services are the missing piece in the transformed economic relationship. The growing bilateral economic ties need no statistical proof. Visible on electronic billboards and in TV ads, in glitzy malls and mom-and-pop grocery stores, at multiplexes and on roadside boards, American brands have become household names. Today, McDonald’s menu and Domino’s pizzas compete with traditional Indian food outlets. Nike and Reebok are

working hard to change the way Indians walk and work out. And Hollywood, the ultimate U.S. export, now includes India in the world premieres of its blockbuster movies. The U.S. is now the largest cumulative investor in India, both in foreign direct investment and portfolio investment. “The deepening of economic cooperation between the two countries is a result of the realization, on both sides, of the true value of each others’ markets,” says Henrique H. Ubrig, President, South Asia, DuPont.

Despite its slow pace, the second generation of economic reforms promises to further strengthen economic ties. In 2002-03, India’s Parliament passed more than 35 bills focused on banking sector reforms, bankruptcy laws and equity market regulation. While a Competition Bill seeks to redefine monopoly, the Money Laundering Bill and Consumer Protection Bill aim at making life easier for ethical

About  
1,000 U.S.  
companies  
are doing  
business in  
India.



*U.S. companies flourish in a liberalized India*

AMIT GUPTA / REUTERS





VIKAS NARULA

U.S. Ambassador David C. Mulford (right) and Aditya Vij, President, General Motors India, open a rally celebrating Chevy's successful return to India

businesses, as well as the consumer. The success of this generation of economic reforms is of great interest to U.S. business representatives, who view the removal of investment caps, lowering of tariffs, elimination of restrictions on retailing and over regulation in many sectors of the economy as a prerequisite to sustained increases in trade, investment and growth of U.S.-India economic relations.

Undoubtedly, the iconic symbol of India's changing character has been its growing prowess and credentials in the IT industry, which has given the relationship a decisive edge. GE's John F. Welch Technology Center in Bangalore is fast becoming a global center for technology enhancement and testing. Similarly, Lucent's pioneering work in third-generation wireless technology has been done entirely in India. The Intel India Development Center was set up in 1999 with 10 employees. Today it has more than 1,000 engineers. The software engineering institute at Carnegie Mellon University gives its top quality ranking to only 48 software companies in the world; nearly two-thirds are based in India.

Over the past five years, the average annual growth rate of India's total export in services has been a strong 21.5%. Outsourcing paced by software and software-enabled services exports, which grew at an average rate of 40%, and the spread of new high-end U.S. research facilities in India, have only hastened the pace. Says Pramod Bhasin, head, GE Capital Services, "India has become critical for giving us the competitive edge in the world market." With many Fortune 500

companies opting for a back-office center in India, the service sector is the fastest growing component of India's GDP.

Meanwhile, an increasing number of U.S. financial companies are arriving in India in the form of portfolio investors, venture capital funds and banks. Today, Citibank is the largest clearing bank in India and the largest issuer of credit cards. Similarly, American Express, which started the trend of outsourcing back-office work from India, has registered robust growth and currently has some 3,000 employees in India.

Economic reform has also begun to open up the insurance sector, which was closed to foreign investment until recently. Today at least five large American insurance companies are operating in India through joint ventures. During this period, Principal Financial Group, the top pension provider in North America, has already signed at least 400,000 customers and has approximately \$700 million invested in India. The company has a full-fledged mutual fund business, another area that was made accessible to the private sector in the mid-1990s. Now that the pension sector has also been opened to private players, the company will begin selling its pension plans by mid-2004. Says Sanjay Sachdev, Country Manager, Principal Financial Group: "The changing attitude of the government toward facilitating business has helped American companies."

## DUPONT

# TEFLON-COATED FUTURE

**LISTED AS ONE OF THE BEST EMPLOYERS IN THE COUNTRY, DUPONT'S WIDE RANGE OF PRODUCTS ARE TOUCHING THE LIVES OF MILLIONS OF INDIANS**

DuPont has experienced quiet but steady growth in India. The company has grown from a liaison office in India 1974 to a wholly-owned subsidiary in 1994. Today the company employs 600 people, has six manufacturing facilities at three locations and a revenue of nearly Rs 1,000 crore (\$ 215 million) in India and has met a compounded annual growth rate of 15% over the last five years. The company's 2005 mission is to achieve Rs 1,500 crore (\$ 325 million) in sales in the country, as announced by Charles O. Holliday Jr., Chairman and CEO, DuPont, during his visit to the country last year. The company was listed among the best employers in India in a ranking done by human resource firm Hewitt Associates in 2003.

DuPont's product range in India is a reflection of its global portfolio. Its high resistance engineering polymers are used by Indian Railways, its advanced fibers are used to make bullet-resistant jackets, its industrial polymers are being tested on road in the extreme conditions of Jammu and Kashmir. And, of course, its Teflon®-coated non-stick cookware is

### One of the six DuPont plants in India



Photo courtesy E.I. DuPont India Private Limited

permeating Indian homes. DuPont also has a range of insecticides, herbicides, agricultural and nutrition products. "DuPont is focusing on emerging economies to drive our worldwide growth and India is key to this plan," says Henrique H. Ubrig, President-South Asia, DuPont. The company is now exploring a potential R&D presence in India. Biotechnology is an area where the company sees a lot of opportunity. DuPont also plans to do patent searching and patent drafting for its inventions and discoveries and is exploring collaborations with large Indian universities and scientific institutions in these areas.

The future looks even brighter. "Future growth for DuPont globally lies in Asia Pacific which is seeing double digit growth. This is where the action is," says Ubrig. The company, which recently rolled out Safety consultancy services in India, sees the agriculture, food and nutrition businesses, along with engineering and industrial polymers and automotive coatings, as the engines to power growth.

## THE WORD

**"Democratic governments create the conditions that empower business and individuals to seize the initiative."**

—U.S. Ambassador David Mulford in Mumbai, April 2004



SUPPORT-A-SCHOOL PROGRAM  
**LESSONS IN PROGRESS**

**U.S. BUSINESSES GEAR UP TO GIVE DEPRIVED SECTIONS A SLICE OF THE IT AGE. AS COMPANIES SPONSOR SCHOOLS, THE DIGITAL DIVIDE IS SLOWLY BRIDGED.**



NARENDRA BISHT/INDIA TODAY

*U.S. companies with a social conscience open up a new world for children of Govindpuri in Delhi (above) and Filmnagar*

It is a rainy Wednesday in Hyderabad. The continuous downpour has created havoc and schools have been closed. But at the Filmnagar slum school, many students have braved the rains to reach the institution. Away from leaking roofs in the dilapidated huts where they reside, the cemented school is a safe haven. But that's just one reason why children flock to Filmnagar school. Good teachers, a hot lunch, drinking water and clean toilets are more powerful incentives. This dramatic change has been powered by a corporate sponsor, the Indian subsidiary of the U.S.-based Portalplayer Pvt. Ltd.

Portalplayer is one of the eight American firms that participate in Naandi Foundation's Support-Our-School (SOS) program where companies sponsor schools. Says J.A. Choudhary, Managing Director, Portalplayer, "We are a knowledge-based industry, and we focus on education-related issues to help bridge the divide in our society." The SOS project, which began with 10 schools in Hyderabad, will soon spread to 882 schools.

U.S. companies with a social commitment are acting as catalysts of social change. At the Govindpuri slum in Delhi, Intel has set up its first youth center in Asia in association with Katha, a local NGO. It is trying to bridge the digital divide, teaching IT programs and languages to deprived children. With computers and web cams, it brings them a slice of the 21st century. Intel India received recognition from the Department of State in 2003 for its good corporate citizenship, active community involvement and exceptional employment practices, traits that embody the finest traditions of American corporate public service.

Additionally, the U.S. has played a strategic role in strengthening regulatory institutions in India. As part of a Rs 667 crore (\$145 million) USAID program in India, the Financial Institutions Reform and Expansion (FIRE) project has helped establish India's first securities depository, the National Securities Depository Ltd., and has accelerated the process of raising the country's capital markets to global standards of efficiency. It also helped the Association of Mutual Funds of India standardize reporting on the performance of mutual funds and aided the Securities and Exchange Board of India (SEBI), India's market regulator, to put together a framework for the introduction of futures and options markets.

In keeping with the increasingly globalized economy, this has been a two-way exchange. Indian companies are doing business and raising capital in U.S. equity markets. There are at least 10 Indian firms currently listed on the New York Stock Exchange (NYSE) and Nasdaq. The client list of Infosys Technologies, one of India's top IT and software services providers, includes Boeing, Cisco and Dell. Satyam Computer Services has 280 global clients, including 81 Fortune 500 companies. Recently, it signed a partnership deal with Yahoo! to provide a portal with e-mail solutions and is developing a new Internet search engine called SearchPad.

In comparison, the manufacturing sector and the consumer market have



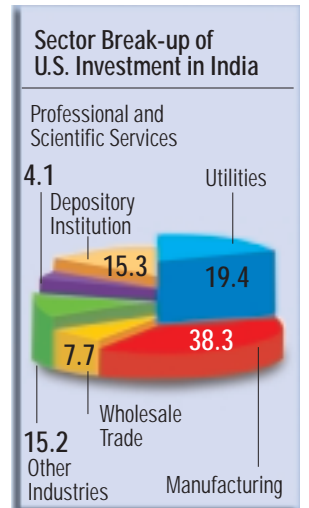
AJIT KUMAR/A.P. PHOTO

moved at a slower pace, though the growth has increased recently. McDonald's, for example, served its first burger in India on October 13, 1996 in Delhi. By 2003, there were 40 McDonald's outlets in India, and the company had sold 4.5 crore (45 million) chicken and vegetarian burgers. The U.S. food chain attracts 150,000 Indian customers daily. Sensitive to local culture, India is the only country in the world where McDonald's does not serve beef products.

By adapting to the Indian market, a large number of American companies, particularly food chains and consumer goods firms like McDonald's, Dominos, Pizza Hut, Pepsi, Coca-Cola, Reebok, Nike, Amway and Avon, have established a major presence in India. Says Rajiv Bakshi, Chairman, PepsiCo India Holdings Pvt. Ltd.: "Pepsi's experience in India has been very, very positive. India is one of the three emerging markets we are betting big on." Cumulative investment in Pepsi's India operations, including agribusiness, is estimated at Rs 4,500 crore (\$1 billion).

DuPont's experience has been equally encouraging. What began as a liaison office in 1974, has grown into a wholly-owned subsidiary of

*McDonald's has become a household name among Indian youth*



Source: U.S. Census Bureau



the parent firm with an average annual growth rate of 15%. DuPont markets a wide range of products across various market segments, including nutrition, healthcare and construction. The Rs 1,000 crore (\$215 million) Indian subsidiary has six manufacturing facilities in three locations in India. It employs about 600 people and creates indirect employment for another 2,500.

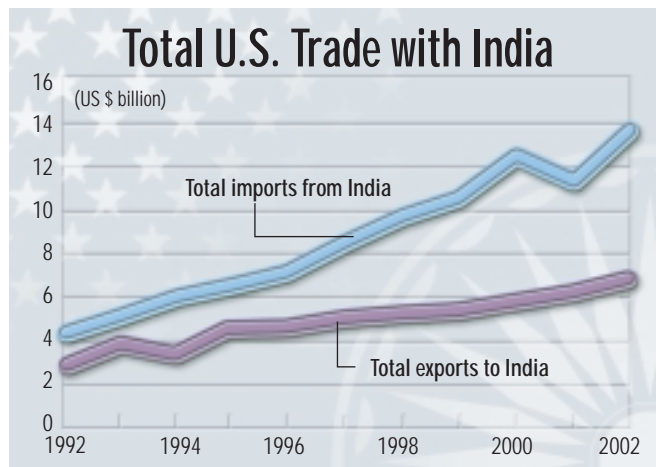
This is in sharp contrast to the early 1990s when prospects for such expansion were negligible. The Indian market has experienced a dramatic change since then. The domestic market is expanding rapidly as income levels rise, attitudes change and lifestyles become more cosmopolitan. India is now one of the fastest growing markets in the world for consumer products like computers, telecom equipment, mobile phones and color televisions. Between 1991 and 2001, the market size for personal computers (PCs) and peripherals jumped 13.5 times from Rs 719 crore (\$156 million)

to Rs 9,684 crore (\$2.1 billion). It is this change that is pushing a large number of American firms to explore India as a manufacturing base. Five years ago, India was not even a blip on Wal-Mart's radar screen. Today it sources products worth Rs 1,840 crore (\$400 million) and some estimate this may hit Rs 4,600 crore (\$1 billion) in the next three to four years. Says P. Jagannath, General Manager, Wal-Mart: "Today we are heavily dependent on China. India looks like a good option."

Keeping pace with growing commercial ties, official-level exchanges between India and the U.S. have also grown. Since September 2001, over 100 high-level official U.S. visitors, including several cabinet members, have come to India. Many have focused on economic and business issues. In-person meetings and video conferences between government officials in New Delhi and Washington to identify and resolve market access issues and other commercial problems and to develop strong institutional linkages have become routine. "We are talking more than ever before and discussions are happening at the highest level," says Amit Mitra, Secretary-General, Federation of Indian Chambers of Commerce and Industry (FICCI).



USTR Robert Zoellick (right), with the then CII President Sanjeev Goenka



SIPRA DAS/INDIA TODAY

AMWAY

## WAY AHEAD

**A LIBERAL BUSINESS ENVIRONMENT AND AN UNDERSTANDING OF THE INDIAN MARKET HAS HELPED THIS U.S. FIRM SPREAD ITS NETWORK**

It took William S. Pinckney, Managing Director and CEO, Amway India, three years to get approval from the Indian Government to begin direct selling his products. Amway markets mostly personal care and household items but import restrictions, high duties and a manufacturing policy reserved only for small-scale industries had made the business environment extremely unfriendly. Undeterred, Pinckney and his team persevered.

Their patience has paid off. Today India is among Amway's top 10 fastest growing markets. Five years since it started business operations here, the company has 350 employees and 350,000 distributors spread over 48 offices and 97 warehouses across the country. "In the next three years, India will be among our top five markets," says an upbeat Pinckney.

As a rule, Amway products are developed by 450 scientists at its R&D center in the U.S. and are manufactured at the state-



of-the-art facility to maintain quality standards. In India, they faced a new situation. "We were asked to manufacture our products here and that, too, as a small-scale industry," says Pinckney. But in hindsight it worked to the company's advantage, helping it adapt to the needs and demands of the Indian market.

The changed business environment in India is the icing, duties have come down and there is a liberal Foreign Investment Promotion Board, which is willing to listen. "You feel more welcome here today than ever before. The shift is remarkable, though the perception abroad has not changed much. You need to get here to see the difference," he says.

In November 2001, U.S. President George W. Bush and Indian Prime Minister A.B. Vajpayee revived a bilateral economic dialogue, which was regarded as one of the most ambitious and substantive channels for engagement on economic issues. It focuses on strengthening official interaction between the two countries in four broad areas of trade: environment, finance, energy and commerce.

The U.S.-India relationship has moved beyond a preoccupation with India as a nuclear-proliferation problem and a bilateral relationship always viewed through the India-Pakistan prism. This change in outlook was kick-started during U.S. President Bill Clinton's visit to India in 2000. With President Bush, ties are only getting stronger. Bilateral trade, less than Rs 36,800 crore (\$8 billion) in 1994, jumped to over Rs 82,800 crore (\$18 billion) in 2003. U.S. exports to India, which remained flat for a long period, increased by 19% in 2003 when they crossed Rs 18,400 crore (\$4 billion) for the first time. In 2003, U.S. exports to India increased on a year-on-year basis by over 18% to Rs 20,240 crore (\$4.4 billion) while U.S. imports from India rose by 11% to over Rs 59,800 crore (\$13 billion). U.S. direct investment, too, has increased to a record high of Rs 16,560 crore (\$3.6 billion). U.S. Deputy Secretary of Commerce Samuel W. Bodman was quick to acknowledge

THE WORD

**"It is my view that, in the long run, what will define the U.S.-India relationship is its economic dimension."**

—Al Larson, U.S. Under Secretary of State for Economic, Business and Agricultural Affairs, March 15, 2004





*The Indian economy is no longer supply-led but consumer-driven*

#### U.S. BUSINESS COMPLAINTS

- Excessive Indian Government interference
- High tariffs and excessive indirect taxes
- Differential tax rates for foreign companies
- Restrictions on foreign investment
- Substandard infrastructure
- Questions about "sanctity of contract"
- Weak protection of intellectual property

the change when he came to New Delhi in early 2003 stating, "A year ago I lamented the low levels of U.S. exports and FDI into India. This year I can report some good news."

The events of 9/11 also gave U.S.-India economic ties an additional sense of urgency. "An India with a strong, vibrant and open economy will be better able to exert its influence in Asia and throughout the world and will be more effective in advancing our shared objectives of promoting peace and stability in Asia and combating terrorism," said Kenneth Juster, U.S. Under Secretary for Commerce. External factors are only a partial explanation for the growing economic ties between the two countries. Ever since India made a shift toward creating a more hospitable environment for foreign investment and imports, there has been a growing acceptance by India's leaders of the vital importance of a full engagement with the world economy.

India's efforts to open its economy are progressing slowly but steadily and are welcomed by both the U.S. Government and business. India eliminated quantitative restrictions on a large number of products in 2000, opening new doors for American manufacturers. The response has been overwhelming. When the U.S. Embassy organized a trade mission of Indian buyers for agricultural equipment to visit American suppliers, the initial goal was to recruit a 12-member delegation. When the mission left in May 2002, it was 36 strong, with 10 on the waiting list.

However, many issues remain to be resolved, including the protection of intellectual property rights. At present India's patent laws recognize only process patents, not product patents, thus enabling local firms to produce copied versions of drugs. But the Government of India says this will change. Under WTO obligations, India will have to overhaul its patent laws by 2005. When that happens, multinational companies will have a better basis to tap India as a low-cost manufacturing base.

The continuing trade imbalance between the U.S. and India remains to be fully addressed. As noted, the U.S. had a \$8.7 billion deficit in 2003, an increase of 7% over 2002, as imports from India have more than doubled since 1995. U.S. Government and industry attribute this to continuing high tariffs, taxes and regulatory restrictions in the Indian market. While by comparison, the U.S. market is open to Indian exporters. "These multiple, onion-like barriers discourage potential exporters," says Jon M. Huntsman Jr., Deputy United States Trade Representative.

U.S. investors have long complained about India's restrictive policies on FDI caps, high tariff walls and non-tariff barriers. A "second wave" of reforms, including labor reforms, would help India become more competitive and will encourage more U.S. trade. This area of U.S.-India economic interaction will be an essential element in the transforming relationship.

#### FORD

### THE POWER DRIVE

**WITH SALES FLATTENING IN EUROPE AND AMERICA, FORD IS LOOKING TO THE GROWING INDIAN MARKET.**

These are exciting times for the automobile industry in India. Ford India, which entered the country in 1995, sold around 43,000 units of cars in 2003, including 24,000 units of exports, and domestic sales are up by 24% from a year ago. Does that spark interest in the boardroom of a global automotive leader which generated revenues worth Rs 747,960 crore (\$162.6 billion) and sold 6.9 million vehicles in 2002? "Sure it does," says David Friedman, President and Managing Director, Ford India. "India is one of the fastest growing auto markets," he says.

Yes, the numbers aren't that big. India sells only 700,000 cars a year, a small amount compared to the U.S. market, where the sales figures touch 18 million. But seasoned multinational companies like Ford Motor are looking to the future. With sales growth flattening in Europe and the U.S., Asia holds the key. "China and India will play a major role," says Friedman. India is already a competitive manufacturing facility of Ford Motor in terms of productivity and costs. The company, which has invested Rs 1,700 crore (\$369.5 million) in its manufacturing facility in Chennai, expects to break even soon.

SHOME BASU



*The Indian car market bustles with new models*

India is more than just a market for Ford. The export potential of its Indian business, spanning cars and auto components, looks equally promising. Ford Motor Company will buy auto components from India this year and will increase that figure gradually. "Auto majors worldwide face a challenge to reduce costs. India is a good option," says Friedman. That apart, Ford set up its IT arm to design and develop engineering and information applications for its international operations, leveraging India's IT expertise. Ford has also established a business center to service the accounting requirements of its global operations. Of late, Ford is also using India as a testing ground for products that are to be launched globally, such as the Ford Mondeo.



*The High-Tech City in  
Hyderabad that houses several  
leading U.S. IT firms*



## TECHNOLOGY FAST FORWARD

T

Technology is an area of cooperation that promises to bring the U.S. and India together in ways never imagined. Some sensitivities remain but these are being handled with a new-found maturity and understanding. Barely eight years ago, information technology (IT) in India was an arcane science except in a few wired outposts. Over the last few years, however, it has become an icon of India's new global image and has helped accelerate U.S.-India cooperation in the high technology sector.

From the time when American companies looked for Indian techies to support low-value data entry or quick fixes for Y2K issues, the relationship between the two countries in the technology arena has been radically transformed. Even as Silicon Valley start-ups and American IT companies are increasingly being powered by expatriate Indians, in India the offshore business model is giving rise to a heated public debate in both countries and a very complex, multi-layered relationship that spans software development and business process outsourcing (BPO), including call centers, high-end software and product development for American companies.

The issue came up during Secretary of State Colin Powell's visit to Delhi in March 2004. "Outsourcing," he said, "is just a fact of life in this 21st century, global economic environment in which we live. We outsource to India. India, in some instances, outsources back to the United States when Indian businessmen ask for American lawyers or accountants or others to provide a service for Indian businesses."

But cooperation in technology is much more than outsourcing. The

## ELECTRIC GROWTH

### IBM OFFERS END-TO-END IT SOLUTIONS FOR ALL BUSINESS NEEDS

In 1977, given the then government nationalization drive, IBM was asked to leave India. For the company, business in India ceased almost immediately, but its interest in India continued. "From a distance, we always kept an eye on the country and its economy," says Abraham Thomas, Managing Director, IBM India. When liberalization offered IBM the opportunity to re-enter the country, it did not let its past experience get in the way. IBM re-entered India as a joint venture with the Tata Group in 1992 and later formed an independent company.

Today the company has a strong presence in India, with its offices in 12 cities. It is the only IT company in the country which offers end-to-end IT solutions helping customers with business transformation, changing the way they operate, reducing costs; serving their customers better, reducing risks and improving their competitiveness.

India is both an important market and an important research and

*India is an important market, says Thomas*



global delivery center for the Big Blue with over 9,000 employees. Its global delivery centers at Bangalore, Pune, Gurgaon and Calcutta, deliver "best-of-breed" technology solutions and its India Software Labs in Bangalore and Pune

focus on design, development and implementation of solutions, to IBM customers worldwide. The company also has a plant in Pondicherry that manufactures desktops and low and mid-range servers.

IBM is committed to India and its IT industry. The company has a partnering relationship with a number of educational institutions, including the IITs at Delhi, Kanpur and Chennai. It has also launched a strategic initiative, with over 100 universities to help create a software skills pool to support its customers in India. Its research lab, built in association with IIT Delhi, focuses on areas critical to expanding India's technology infrastructure, including electronic commerce, supply chain management and distribution, cellular and mobile telephone systems and distance learning. Says Thomas, "India is going to be one of our most important operations worldwide, both in terms of a growing domestic market and the way its strengths could be leveraged for our global operations."

recently issued agreement between the two countries, the Next Steps in Strategic Partnership ("Next Steps"), lays out a roadmap for expanding and deepening U.S.-India cooperation in a range of high technology areas. Kenneth Juster, U.S. Under Secretary of Commerce, visited India in late 2003 to hold discussions on trade issues related to dual-use goods and technologies, export controls and trade facilitation under the umbrella of the High Technology Cooperation Group. Historically, trade in sectors like nuclear energy, space, missile defense and technology transfers between the two countries has been highly restricted. Following the Next Steps agreement announced jointly by President George W. Bush and Prime Minister Atal Bihari Vajpayee in January 2004, cooperation in the "quartet" areas of civilian nuclear energy, civilian space programs, high technology trade and missile defense is set to increase. According to the two leaders, "Cooperation in these areas will deepen the ties of commerce and friendship between our two nations, and will increase stability in Asia and beyond."

For its part, India will remove systemic barriers to U.S. imports and put in place adequate controls on the export of sensitive goods and technologies to prevent unwanted proliferation. The easing of restrictions came after successful bilateral discussions to allay American fears about Indian nonproliferation controls and the growing Indian desire to gain access to dual-use technology from the U.S.

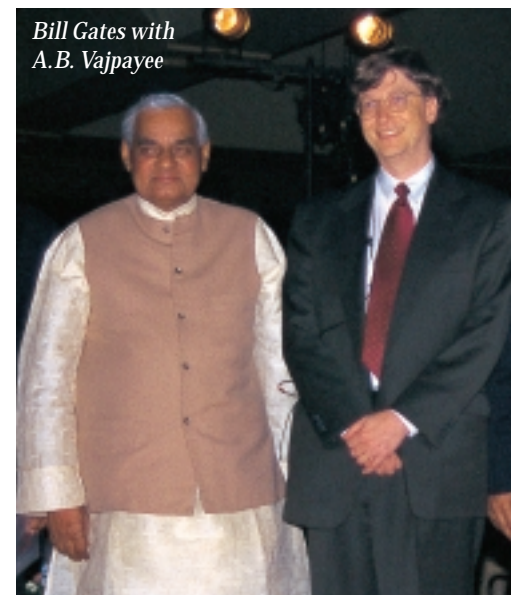
The agreement has given the bilateral high-tech train the green light. The two governments set up the High Technology Cooperation Group (HTCG) in November 2002 to push the discussions forward. Says Juster, "The 21st century will be the age of information and knowledge and we have to put in place the building blocks for greater knowledge-based trade between our two countries."

The new-found confidence in high technology exchange will ride on the robust and expanding base of existing technology-enabled partnerships between the two countries. India's IT software and services exports have been growing steadily, from Rs 8,280 crore (\$1.8 billion) in 1997-98 to around Rs 46,000 crore (\$10 billion) in 2002-03. North America remains India's largest market, accounting for over 60-65% of IT exports, a number that has tripled over the last four years.

This growth has come on the back of two crucial trends. Earlier, most Indian IT companies undertook software development on-site, primarily working at the client's office in the United States. However, with the rapid improvement of international connectivity, the development of telecom

infrastructure in India and a sharp drop in telecom tariffs, many of these companies have moved a small part of their businesses offshore (out of the company's actual back office), mainly to India.

Taking advantage of the low cost, high-quality benefit of locating development centers and back office operations in India, many Fortune 500 companies either have a presence in India or are exploring one. Not surprisingly multinational corporations (MNCs), mostly American-owned, have a 27% share in India's total IT exports. In the fast growing BPO sector, popularly referred to as IT-enabled services, the share of multinationals in exports from India is as high as 45%. Says Kiran Karnik, President, Nasscom, "First through call centers, then sophisticated development work, American companies have helped the Indian IT



SHARAD SAXENA

industry grow and get global recognition."

The presence and contribution of American companies in India's dynamic IT sector cannot be underestimated. Take Hewlett-Packard (HP), for instance. The company started its India operations in 1989, selling products and developing software. Today, having taken over Compaq's India operations in 2002, it is the largest MNC employer in India's IT sector with over 10,000 employees. With a presence in 120 cities and 16 offices, the company has a powerful footprint in India, with a hardware manufacturing unit, research lab, and software BPO operations serving its global businesses. The company's BPO unit here handles transaction processing for debit and credit card records, vendor payments, freight management and order processing for its global businesses. Says Neelam Dhawan, Vice President, Enterprise Business Group, Hewlett-Packard India, "India has become critical for HP globally."



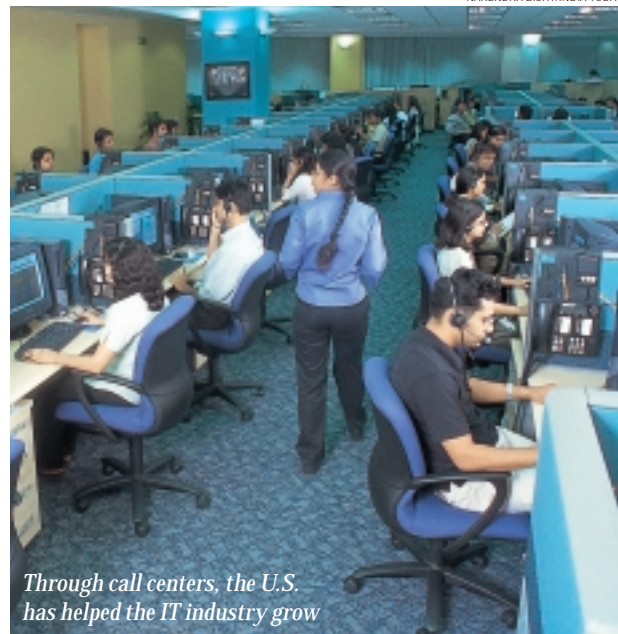
With new trust  
and confidence,  
U.S.-India  
technological  
ties seem  
headed only  
one way—  
upward.

It is a similar story at Microsoft India. Even as Chairman Bill Gates publicly acknowledged the role of Indians, saying "20% of engineers at Microsoft are Indians," the company is ramping up its India operations. Having earmarked Rs 2,000 crore (\$435 million) in three years (its largest investment outside the U.S. excluding manufacturing activities) for boosting education, partnerships, innovation and localization in India, Microsoft is expanding its software development work in its Hyderabad office and providing support for its products and services on a global basis from Bangalore.

While IT majors like HP, Intel, IBM and Oracle are at the forefront of this growing U.S.-India high technology relationship, American companies from other sectors have also joined in significant numbers. Banks such as American Express and Citibank, financial services companies such as Lehman Brothers, and auto majors like Ford and General Motors are shifting some of their back office work to India. Meanwhile, existing American companies are using technology to escalate the scale of their operations in India. For example, the Rs 5,980 crore (\$1.3-billion) Convergys Corp, the largest call center company in the U.S., which set up shop in India in 2001, already has close to 5,000 employees in India.

Advances in Internet technology and America's growing comfort level with India have inspired U.S. companies to invest in the broad

NARENDRA BISHT/INDIA TODAY



Through call centers, the U.S. has helped the IT industry grow

spectrum of BPO. Cognizant Technology Solutions started operations in India in 1994 and today has 12 development centers with close to 8,000 employees. Indian professionals manage the interactive websites of companies such as Lehman Brothers and Boeing. Apple Computer's iconic iPod was largely developed in Hyderabad. Today, the 900 engineers at Texas Instrument's Bangalore-based chip design center boast 225 patents, and the company does more than 20% of its global R&D work out of India. Intel's Bangalore campus is leading worldwide research for the company's 32-bit microprocessors for server and wireless chips. While Wall Street sleeps, Indian analysts digest the latest financial position

ORACLE

## EXPANDING SPHERE OF DEVELOPMENT

FROM A HUMBLE BEGINNING, ORACLE'S INDIA UNIT HAS BECOME THE COMPANY'S MOST IMPORTANT R&D HUB OUTSIDE AMERICA, WITH A PRESENCE IN 28 STATES AND PRODUCTS IN 11 LANGUAGES.

VIVAN MEHRA



Dasgupta heads one of the largest MNCs in India

with record delivery time and impressive results, India has emerged as the company's most important R&D hub outside the U.S. Engineers at Oracle's India Development Center work on all four Oracle product families—database, application server, collaboration suite and Oracle E-Business suite. With their counterparts on the other side of the globe, American and Indian development teams work on joint projects round-the-clock, taking advantage of the 13fi hours time difference between California and India in order to pass development, support and consulting projects between teams overnight. Indian development teams belong to the same organization as their U.S. counterparts and have as much input into product design and direction as

When Shekhar Dasgupta joined Oracle India in 1992, the company had three employees and operated out of a small satellite office in Delhi. Eleven years later, the company has become one of the largest MNCs in the country, with more than 5,000 employees and offices and development centers in Gurgaon, Bangalore, Hyderabad, Mumbai, Chennai and Calcutta. In terms of revenue, India is Oracle's fifth largest market in Asia, up from tenth two years ago. India accounts for Oracle's largest research and development investment outside the U.S. and more than 80% of Oracle employees in India work at Oracle's India Development Center. "I know we have just scratched the tip of the iceberg," says Dasgupta, Managing Director, Oracle India. The company's Indian operations are expanding rapidly. Oracle expects to increase its employee count to 6,000 soon and, in anticipation, is building new offices in Calcutta and Mumbai and expanding its Hyderabad facility.

Oracle was among the first multinationals to establish core software development operations in Bangalore in 1994 to support its global product development strategy and address local market needs. Its India Development Center began work on a project basis for different divisions of the company. But

developers at the company's headquarters in Redwood, California. "We have always believed in India and its excellent talent pool," says Dasgupta.

In addition to providing software development for the entire Oracle product family for Indian and global markets, Oracle India has become host to a number of other functions critical to Oracle's operations as a global company. Through the six facilities of Oracle India, headquartered out of Gurgaon, the company offers sales, marketing, consulting, education and support to local customers. Additionally, the company hosts a number of global operations that make it possible for the company to conduct round-the-clock operations. Besides, the Global Support Center in India is one of four such centers in the world catering to Oracle customers.

India has also been a good market. It is Oracle's fifth largest and one of the fastest growing markets in Asia, in terms of revenue. With presence in 28 states and offering products in 11 Indian languages, the company today has a customer base of 6,200. "There are enough opportunities and advantages that India offers for us to keep growing," says Dasgupta.



## APPLE'S iPod

# PORTAL PLAYER

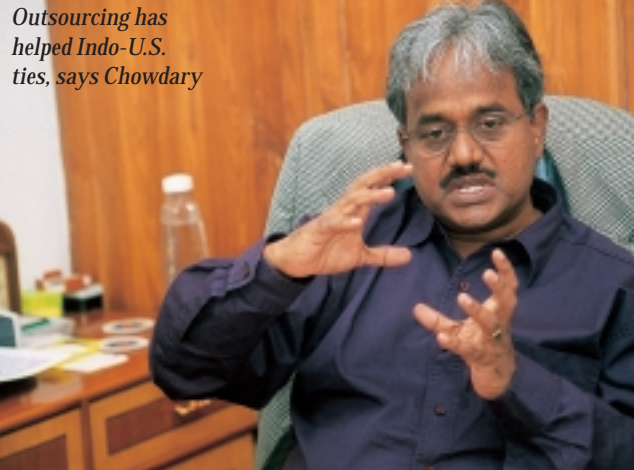
**PINEXE SYSTEMS HAS THE DISTINCTION OF DEVELOPING APPLE'S AUDIO JUKEBOX FROM SCRATCH AND IS NOW WORKING ON A SIMILAR PRODUCT WITH VIDEO FEATURES.**

Along the winding hilly terrain, amid elegant buildings, J.A. Chowdary is out in the greens getting some fresh air. At times, such mid-work breaks can turn into a full-fledged cricket match on a pitch just outside the Pinexe Systems India office in Hyderabad. "Such breaks are important for our boys to think and work outside the box. It boosts their creative juices," says Chowdary, Managing Director, Pinexe Systems.

It definitely does. Apple's famous iPod, a hand-held digital music jukebox that was the hottest Christmas gift in 2002, was designed and engineered here. The product was developed from scratch at the Hyderabad center by a team of 80 engineers in a record time of one and half years with an investment of Rs. 9.2 crore (\$2 million). That is half the development time and one-fifth of the cost it would have taken anywhere else in the world. Interestingly, iPod was designed in Hyderabad, marketed from Cupertino, California and is manufactured in Taiwan.

A. PRABHAKAR RAO

*Outsourcing has helped Indo-U.S. ties, says Chowdary*



Having developed Apple's portable audio jukebox, which has 70% global market share, the India center is now giving the finishing touches to a similar product with video features. For Chowdary, Apple's iPod marks a journey from one extreme to another. In 1994, when he took an IT delegation to Las Vegas as director of Hyderabad's Technology Park, response from American MNCs was one of absolute indifference. But today, things have come full circle. Pinexe Systems was established to capitalize on the outsourcing trend to India. Says Chowdary, "Such outsourcing moves have provided tremendous synergy and have given new meaning to U.S.-India ties."

of U.S. companies and file reports in time for the next trading day. General Electric (GE) and American Express' Indian staff authorize payments for their international vendors and help their companies assess the credit risk of their customers worldwide for loans and mortgage approvals.

New Internet and communication technologies permit U.S. companies to leverage capacity, cost and productivity opportunities in India. Outsourcing has become a fact of life in this 21st century, global economic environment. A vast pool of English-speaking, technically qualified labor, coupled with lower production costs are helping spur this growth.

GE offers an excellent example. It started seriously looking at the Indian market during the 1990s and pioneered the software-sourcing model here. In 2002, with 22,000 employees in India, revenues and orders exceeded Rs 4,600 crore (\$1 billion). Its John F. Welch Technology Center in Bangalore, which employs 1,800 engineers, does fundamental research for most of GE's 13 divisions. Engineers here have filed for 95 patents in the U.S. since its inception in 2000. Says Pramod Bhasin, President & CEO, GECapital International Services, "We are in India not as much because of the costs but for the huge intellect base that India has."

Adobe's development center, which started in 1998 in Noida, has become a critical hub for the company's global R&D efforts. Contributing up to 18% of the parent company's engineering



PRAKASH SINGH/AFP PHOTO

*(From left) FICCI Director-General Amit Mitra, former Indian Foreign Secretary Kanwal Sibal and U.S. Under Secretary of Commerce for Industry and Security Kenneth Juster*

needs, the division has successfully developed such path-breaking Adobe products as Page Maker 7, Acrobat Reader for hand-held devices, Photo Deluxe and Album Starter. It is little wonder that the company's Indian unit is currently in an expansion mode. "Corporate America has started recognizing India's strengths and talent base," says Naresh Gupta, Managing Director, Adobe Systems India.

India is also emerging as a market for companies retailing personal computers (PCs), servers and routers, albeit at a slower pace. PC penetration in India may have been a mere 9 per 1,000 people in 2002-03, far below the global average of 30 per 1,000, but India's huge population makes up for that in terms of market size. Sales of PCs in the Indian market are touching 2 million units every year. American companies like HP-Compaq, Dell and IBM are today among the leading players in India's desktop market. In fact with the growth in the market, IBM has doubled the capacity at its plant in Pondicherry.

India's lowering of import tariffs has helped. From a high of 22% in 1996 import tariffs have come down to 15% today and, by 2005, all customs tariffs on computers and devices are scheduled to be removed. Retailers are gearing up for the future, with industry estimates putting computer penetration in India at 70 per 1,000 by 2010.

Another factor driving growth is that the telecom infrastructure today in India has reached international standards and is one of the cheapest in the world. The entry of private players into telecom, long dominated by the public sector, has brought dramatic changes and competition continues to drive down prices. International long distance tariffs, for instance, have dropped by over 60% in the last two years.

## SECRETARY POWELL ON OUTSOURCING



"Outsourcing is a natural effect of the global economic system and the rise of the Internet and broadband communications. You're not going to eliminate outsourcing. But at the same time when you outsource jobs it becomes a political issue in anybody's country. People without jobs are a political issue, so what we have to do is make sure that as we participate in outsourcing . . . not only with India, but we outsource jobs to other countries, as well. . . we have to make sure that we are at the same time creating jobs for Americans who may have been affected by outsourcing. And that's why in our discussions today with our Indian colleagues, we made the point that we also want to see greater openness to Indian markets, not as a quid pro quo to outsourcing, but just to open up markets in all directions so that when we can do something better than someone else, then that job ought to be sourced back to the United States. There's a lot of insourcing that takes place when Indian companies have the need for services that they can only find in an American law firm, in an American accounting firm, in which case it goes back to the United States."

—Secretary of State Colin Powell speaking to Indian students in New Delhi on NDTV, March 2004

While it is easy to speak of bits, broadband and computers, people are really at the heart of the growing relationship in technology between the two countries. The Indian-American community in the U.S. has doubled in the past ten years and is now over two million strong. India recently passed China to become the second largest country for legal migration to the U.S. With the total number of Indian students now almost 75,000, for the second straight year (ending in September 2003) India is the number one source of foreign students for American colleges and universities. And a large majority of these students come to study engineering and information technology.

While Indian-Americans form a mere 0.6% of the population, it is the fastest growing and wealthiest minority group. The estimated annual income of Indians in Silicon Valley alone is \$60 billion. Says Dilip Chenoy, Deputy Director-General, CII, "They helped India get on to America's radar screen."

To a large extent, the presence of well-placed Indian-Americans has pushed the countries to explore opportunities for technology exchange. For instance, Oracle became one of the first companies to set up its development center in India, largely because it had Indian-Americans in key senior positions. Similarly, when Adobe decided to set up its India center, Naresh Gupta initiated and sold the idea to the company's top management in the U.S.

Not everything is rosy, though. While infrastructure bottlenecks, including power supply, have been a perpetual problem in India, piracy and data privacy issues are also concerns for American companies. Adobe reckons that the company gets only 10% revenue from its total sales in India. The remaining 90% is lost to piracy. According to a recent U.S. study, the Seventh Annual BSA Global Software Piracy Study 2002, the piracy rate in India was an astonishing 70% in 2002. The U.S. Government is working hard with Indian authorities to strengthen the protection of intellectual property rights (IPR) and ensure India establishes mechanisms to ensure data exclusivity for businesses.

Despite such concerns, the encouraging sign is that U.S. IT companies, while extremely focused and profit-driven, have expanded corporate responsibility into areas of social concern. On his trip to India in 2003, Bill Gates committed Rs 460 crore (\$100 million) to fighting HIV/AIDS in India. Microsoft has launched Project Shiksha, committed to computer literacy for the less fortunate and will work with the Uttaranchal and Kerala Governments in the initial round. The company



will set up an academic laboratory in each state, and the project aims to support 80,000 schoolteachers and 3.5 million students over the next five years.

Similarly at Govindpuri slum in Delhi, Intel, the world's largest chipmaker, has set up its first youth center in Asia in association with an NGO Katha. In a country known for its technical prowess, the youth center hopes to bridge the digital divide by teaching IT programs and languages to disadvantaged children. It is equipped with 24 PCs with Internet connection, web cameras and Intel microscopes. There is even a filmmaking room equipped with handycams for children.

Technology will shape human lives in the future. The same holds true for the U.S.-India relationship. With America as the biggest consumer of technology and India as an increasingly important resource base, the two countries share natural synergies. The future growth of the U.S.-India partnership in technology will require continued opening up of Indian markets to ensure more balanced trade between the two countries. As Under Secretary of State for Economic, Business and Agricultural Affairs, Alan P. Larson said on a visit to India in March 2004, "In the future, we want to build confidence for additional strategic trade to include discussions on controlled dual-use goods and technologies. This in turn will open the door for more high technology exports from the U.S. to India."

Expanding trade and investment in the high-tech area can act as a catalyst to trade in other areas. As the technology sector demonstrates its large potential for U.S.-India economic ties, other areas, such as manufacturing, agriculture, retail and food processing, will flourish as regulatory restrictions are eased. With new-found political and commercial trust and confidence, bilateral technological ties seem headed only one way—upward.



## DEFENSE RELATIONS

# SHARED STRATEGIC FUTURE

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he key word in the ever-expanding lexicon of the U.S.-India defense relationship is “inter-operability.” While it signifies the mutual desire of both countries to work more closely in the sphere of military cooperation, it also portrays a future in which the two countries share strategic doctrines and operations in order to tackle the challenges of a new century.

It was India’s swift response to the September 11, 2001 terrorist attacks on the U.S. and its unconditional support for the War on Terrorism that galvanized the change in U.S.-India military relations. However, the first steps had been taken months earlier, when India endorsed the National Missile Defense program unveiled by the Bush Administration in May 2001. The removal of sanctions against India in September 2001 helped the U.S. and India to identify mutually overlapping national security goals and give a new impetus to military ties.

The aim of the burgeoning bilateral defense ties is to develop capabilities and confidence, jointly confront multilateral security issues, such as the protection of energy supplies and sea lanes, conduct peacekeeping and combat terrorism. The military establishments of both countries have much to gain from strengthening this relationship. Clearly, the development of inter-operable procedures, communications and doctrines is only possible through familiarization, understanding and confidence building, focusing on areas of mutual interest and enhancing the professional development of personnel.

Consequently, fast-paced developments in military-to-military (“mil-to-mil”) relations have been the most visible aspect of the process of transforming the bilateral relationship. This is evident from the growing frequency of bilateral exercises, seminars, personnel exchanges, high-level and unit visits, officer and unit exchanges, as well as military technology sales and cooperation. The U.S. aim in giving this relationship a new thrust was clear when Admiral Dennis Blair (former Commander of the U.S.



TSGT. KEITH BROWN

Pacific Command) declared, “We believe that a robust U.S.-India defense relationship, of a kind that is unprecedented in our bilateral history, can play an important part in contributing to peace, security and freedom in Asia. We will develop our relationship with India on the basis of India’s emergence as a rising global power.”

Although the bedrock of the U.S.-India defense relationship is the Agreed Minute of Defense Relations of 1995, the scope of the relationship has gone way beyond what was envisaged at that time. Since then, the two militaries have started the serious business of working together, forging links in different aspects of military operations and doctrine. The objective is simple. The more the two countries exercise together, the

*U.S.-India military relations have reached a new high, with all three wings of the military engaging in joint exercises and programs*



## JOINT EXERCISES

### DEFENSE TIES GREW BY LEAPS AND BOUNDS

**FEBRUARY 2001:** Vice-Admiral Metzger, Commander of the U.S. 7th Fleet and guided missile cruiser *USS Cowpens*, represented the U.S. at India's first international fleet review in Mumbai.



**OCTOBER 2001:** Launch of Operation Enduring Freedom in Afghanistan, which saw U.S. aircraft and ships being regularly refueled in India.

**NOVEMBER 2001-2003:** Fourteen U.S. Navy ships visited India, including two Aircraft Carrier Distinguished Days.

**APRIL AND SEPTEMBER 2002:** *INS Sukanya* and *INS Sharda* took over from the *USS Cowpens* to conduct patrols and escort U.S. ships through the Malacca Straits in support of Operation Enduring Freedom.

**MAY 2002:** U.S. and Indian Special Operations Forces conducted Balance Iroquois in Agra. Aimed at exchanging mutual expertise in special operations and airborne assault in day and nighttime conditions.

**SEPTEMBER 2002:** U.S. Army Alaska's 1st battalion 501st Parachute Infantry Regiment welcomed 80 soldiers from India's 50th Independent Parachute Brigade flying to Alaska in an IAF IL-76 to "Geronimo Thrust," first-ever live firing exercise.

greater their understanding of each other's systems and methodologies and the easier it will be for them to work together in real situations should and when the need arises. Apart from the professional development of personnel, the joint operations help mutual understanding of doctrines that, over the longer term, will help both armies work together for common strategic goals.

Another key element of the engagement process is the IMET (International Military Education and Training) program in which the U.S. sends Indian military personnel to U.S. military training courses. A barometer for the new and improved ties, the budget for this program climbed to Rs 4.6 crore (\$1 million) in 2002, allowing 37 Indian officers to attend training courses at military facilities in the U.S. In 2004, the budget is expected to increase to Rs 5.5 crore (\$1.2 million). In addition, Indian and American officers participated in a record number of 53

COURTESY: PACOM



A U.S. specialist with an Indian paratrooper

military-related conferences in the period 2002-2003.

All three military services are engaging in ever broadening military exercises, many of which have ever-increasing joint inter-service aspects. During exercises in Agra in 2002, Indian and American Special Forces paratroopers jumped from Indian and U.S. Air Force aircraft to learn about each other's formation flying techniques and to coordinate

dropping ground support cargo.

It was in the searing heat of a May Day in Agra that the IAF and USAF set out on a journey of inter-operability. USAF Airman First Class Mitul Patel from the 353rd Special Operations Group was deployed from the U.S. air base in Kadena, Okinawa, to Indian Air Force Station in Agra, to take part in the largest-ever combined/joint airborne exercise between the U.S. and India. This 23-year-old, Gujarat-born Indian American crew chief was responsible for launching MC-130s in the exercise with the IAF.

Meanwhile, during Operation Enduring Freedom in April 2002, Indian Navy ships *Sharda* and *Sukanya* relieved *USS Cowpens* to escort ships in the Straits of Malacca and protect them against terrorist attacks



COURTESY: PACOM

and pirates on the high seas. *USS Cowpens'* Commanding Officer, Captain Paul S. Holmes, said that working with the Indian Navy rekindled a friendship. Just 14 months earlier, in February 2001, the *USS Cowpens* had represented the U.S. in the International Fleet Review in Mumbai. While there, *Cowpens* delivered Rs 36 lakh (\$80,000) worth of relief supplies for Gujarat, which had recently been devastated by an earthquake. As Captain Holmes summed up, "During an interview at the end of the Fleet Review, I was asked what would come of U.S.-India relations as a result of the Fleet Review. I said we would have to wait and see what would develop from the seeds of friendship that we had planted. Who could have foreseen that 14 months later an Indian Navy ship would relieve a U.S. Navy ship in a real world operation, and that the U.S. Navy ship would be the *Cowpens*."

In the past couple of years, both navies have conducted several joint search and rescue exercises as well as the "Malabar" exercise in the Arabian Sea, both of which are now an annual activity. The operations involve ships and helicopters of both countries intercepting suspicious vessels, using anti-submarine warfare and completing complicated flying operations. Testing mettle and capabilities, these exercises give a

Special Forces joint training sessions under way in Agra in 2003

India's  
response to the  
9/11 attacks  
galvanized the  
change in  
military ties.



window into how each navy operates. In the first exercise in October 2002, the Indian Navy's western fleet fielded the Delhi-class destroyer *INS Delhi*, Godavari-class frigate *INS Gomati* and Shishumar-class submarine *INS Shankul* and tanker *Aditya* against the U.S. Navy's *USS Chancellorsville*, a Ticonderoga-class guided missile cruiser, and *USS Paul F. Foster*, a Spruance-class destroyer. In addition, maritime reconnaissance aircraft of both navies took part in this, the largest-ever U.S.-India military exercise, held in 2002 and again in 2003.

In February 2004, for the first time since 1963, fighter aircraft joined the fray. Eight F-15C aircraft from the 19th Fighter Squadron, Elmendorf Air Force Base, Alaska flew to Indian Air Force Station, Gwalior, to participate in a dissimilar air combat training (DACT) exercise. The Indian Air Force fielded Jaguars, MiG 21 Bison, Mirage 2000s and Su-30 K aircraft. In another first, India will make the largest strategic deployment of its combat aircraft outside its territory in the summer of 2004, when it will participate in the multinational Cope Thunder 2004 in Alaska.

Special Forces operations are often the stuff of classified information, but they also showcase the cutting edge of inter-operability, especially as both armies gear up to tackle terrorists and guerrilla and clandestine warfare. Over the past few years, joint exercises in this area have included heliborne operations, counter-terrorism training, mountain warfare, close-quarter combat and jungle warfare.

COL. STEVEN SBOTO



An Indian soldier with a U.S. officer in Phainuam village in Mizoram, where they worked on four construction projects to improve the lives of local villagers

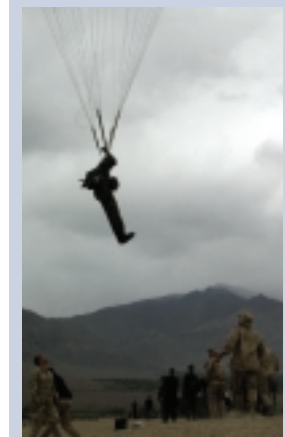
Hyderabad, flies home after his two years in India, he will possess a wealth of experiences that he received from the Indian Air Force, and the Indian Air Force will have a much deeper appreciation of the USAF. His Indian counterpart in the U.S., Flight Lieutenant P.A. Shah, stationed with the 1st Flying Training Squadron at Columbus Air Force Base, Mississippi, will have similar stories from his three years in the U.S.

Indian and U.S. army civil affairs personnel also collaborated in community relations projects in Phainuam village in Mizoram during JCET Balance Iroquois 2003. The combined forces converted a hill footpath into a motorable road, leveled a soccer field, graded a community center park and



Balance Iroquois 2003 in progress

COURTESY: PACOM



develop a baseline for inter-operability. USAF personnel aboard IL-76 and AN-32 observed Indian Air Force flight procedures and Indian Army paratroopers and heavy equipment being air dropped. Indian Air Force and Army personnel observed American procedures in such areas as use of drag parachutes and preparing drop zones. The Indian Air Force and Army learned to conduct airdrop operations from C-130 Hercules tactical airlift aircraft.

The new age of combat, many believe, will require greater skills in special operations, as has been demonstrated in both Afghanistan and Iraq. The ball was set rolling with three Special Forces exercises in the past year, two in India and one in Guam.

Exchange of personnel adds a human element to the military relationship. When Captain Jason Brightman, USAF, an exchange flight instructor at the Indian Air Force Academy just outside of

built an open sports field adjoining an elementary school and bonded with the local community.

The exchanges have gone all the way to the top. All three Indian service chiefs visited the U.S. in 2002, with Chief of the Air Staff, Air Chief Marshal S. Krishnaswamy attending the Global Air Chiefs' Conference in Washington D.C. in October 2003. Chairman of the Joint Chiefs of Staff General Myers visited India in July 2003 and the U.S. Army Chief visited in early 2003, while the Commander Pacific Command has visited India three times in the past few years. The Chief of Naval Operations visited India in October 2003 and Chief of Staff Air Force is scheduled to visit India sometime in 2004. Indian Chief of Army Staff General N.C. Vij visited the U.S. in March 2004.

Another cornerstone of inter-operability is achieving a level of compatibility of equipment that enables one country to "talk" to another. The more the two countries exercise together, the greater the rationale to provide India with compatible equipment, communications and technologies. The Indian military establishment's desire to buy U.S. equipment through the FMS (foreign military sales) route and the U.S.'s willingness to sell state-of-the-art equipment to India are a happy convergence. Among the many motivations for supporting the U.S. sale of defense technology and equipment to India is the improving inter-operability between the two countries' forces. The new defense

## JOINT EXERCISES

**SEP-OCT 2002:** Naval exercise Malabar, covering surface, sub-surface and air warfare over the Arabian Sea. Indian Navy's western fleet fielded the Delhi class destroyer comprising *INS Delhi*, Godavari-class frigate *INS Gomati* and Shishumar-class submarine *INS Shankul* and tanker *Aditya*, with the *USS Chancellorsville*, a Ticonderoga-class guided missile cruiser and *USS Paul F. Foster*, Spruance-class destroyer.

**OCTOBER 2002:** Cope India-02, an air mobility exercise to



## JOINT EXERCISES

**SEPTEMBER 2003:** U.S. and Indian special operations forces conducted a three-week joint exercise in high-altitude warfare in Leh.

**OCTOBER 2003:** Malabar, a complex exercise off the Kerala coast involving aircraft warships, submarines and P-3

COURTESY: PACOM



Orions. Exercise in new disciplines such as interception of suspect vessels.

**FEBRUARY 2004:** For the first time since 1963, 8 F-15C fighter aircraft from the 19th Fighter Squadron, Elmendorf Air Force Base, Alaska, and Indian Air Force Jaguar, MiG 21BISON, Mirage 2000, Su-30 K aircraft conducted dissimilar air combat training (DACT) with both air forces playing offensive and defensive roles in Cope India 2004 at IAF Station Gwalior.

**MARCH 2004:** U.S. and Indian soldiers held joint training exercises in Mizoram, at the Counter Insurgency Jungle Warfare Center (CIJW).

relationship also means that the past political disconnect that hampered American defense sales to India is a thing of the past. With the lifting of sanctions, only those major defense items on India's wish list valued over Rs 63 crore (\$14 million) require Congressional notice, putting India in the same category as key U.S. allies such as Japan and South Korea.

In 2002, the U.S. agreed to sell 12 AN-TPQ/37 Firefinder counter battery radars to the Indian Army. Two interim radars arrived in July 2003 and have been deployed in India. They are part of a Rs 855 crore (\$190 million) sales agreement under FMS. The mobile radar system uses a combination of radar techniques and computer functions to detect and accurately locate artillery and rocket weapons to permit rapid engagement with counter-fire. Operator and crew training for Indian Army personnel on these radar systems started in California in early 2003.



*Monitoring a joint training session*

COURTESY: PACOM

The second major deal under negotiation is for the P-3 Orion naval reconnaissance plane. This maritime aircraft is crucial for boosting the long-range surveillance capabilities of the Indian Navy. U.S. officials describe it as a "3C-plus" (i.e., the version that would be sold to India would be equipped with the latest avionics, including sensors and computerized command and control and weapons systems). Officials describe it as "a maritime patrol aircraft with offensive capability." India will also buy into the deep submersible rescue vessel system. Meanwhile, GE-404 engines for the Light Combat Aircraft (LCA) have already made their way to India.

The U.S. has indicated its willingness to make Perry-class frigates available to the Indian Navy, as well as Sea Hawk helicopters. India will buy Rs 202 crore (\$29 million) worth of Special Operating Forces-unique equipment to enhance the counter-terrorism capabilities of its special forces. They may also purchase chemical and biological protection equipment. Indian special forces have tested much of this equipment during joint exercises and it stands to reason that joint operations will necessitate India possessing compatible equipment and technology.



*Indian military personnel view the demonstration of a hand-held, U.S. GPS system*

COURTESY: PACOM

Border management is a key area of concern for India's national security and India is interested in accessing complete border management systems. An Indian team visited the Sandia Laboratories in New Mexico to explore sensor systems used by the U.S. along the border with Mexico. The Indian Army is considering sending experts to Sandia, even as the U.S. is willing to sell customized sensors to address the different needs on India's Eastern and Western borders.

An important aspect of the defense relationship is what is known as its "spigot" (on-again-off-again) quality, which has led to Indian fears of the reliability of the U.S. as a defense partner both in cooperation and sales. To assuage this, U.S. Defense Undersecretary Douglas J. Feith maintains that the U.S. will not use defense relations to mark disagreements with allies such as India, "In a multidimensional relationship, with a deeply rooted appreciation of common strategic interests, it will be less likely that such sales will be a tool for dealing with differences." Former U.S. Ambassador to India Robert Blackwill put it more forcefully, "The U.S. will be a reliable provider of defense commodities to India because a strengthened, capable and effective Indian military is in America's national interest."

With the establishment of India's Integrated Defense Staff (IDS), the U.S. Joint Staff office has been sharing valuable information to assist the IDS in developing an Office of Net Assessment and an Indian national defense university. There have been two rounds of joint staff talks which have led to exchanges of ideas and planned visits of IDS personnel to U.S. institutions in order to cooperate on tri-service

## JOINT DEFENSE COOPERATION

**2002-2003:** Three SOF exercises held in the JCET (joint combined exercise training) Iroquois series. Two exercises held in India and one in Guam. Other exercises include:

- Pacific Area Special Operations Conference (Feb 2003)
  - Small Unit Tactics, Para Drops (May 2002)
  - Close Quarter Combat (May 2002) Fort Lewis, Washington
  - Live Fire exercises (April 2003) India
  - Counter-terrorism (May 2003) India
  - Platoon exercise (June 2003) Guam
  - Close quarter combat (August 2003) Fort Lewis, Washington
- MAY-JULY 2003:** U.S. Military Academy exchange with IMA.

**JUNE 2003:** Army High Altitude medical subject matter expert exchange in Kashmir.

**AUGUST 2003:** Army Intelligence subject matter expert exchange in Goa. U.S. and Indian defense intelligence agencies met in 2002-03 and included an intelligence exchange conference in Washington D.C. in July 2003. The chief of India's new DIA traveled to the U.S. on counterpart visits to understand the workings of military intelligence at the national level.

Pacific Air Forces safety, security forces, medical officers, and logistics experts have begun a relationship with the IAF to help the latter improve readiness and safety programs.

USAF restarted its instructor pilot exchange program participation in India.

institutions and military planning. This is a crucial aspect of U.S.-India inter-operability, since U.S. forces mostly function under joint command, the most recent example being the U.S. action in Iraq. The Indian IDS has also been in dialogue with PACOM's Joint Inter-Agency Coordination Group for Combating Terrorism. Central to the transformation of this relationship is the ability to enable the three Indian services to achieve a compatible degree of jointness. The U.S. has proposed defense planning exchanges to assist the IDS in working out joint strategies from budgets and acquisitions, to command and control issues. This is the future of defense planning, where individual services are subsumed into an interdisciplinary system. Thus, a new relationship is being made between the Pentagon's key think tank, Office of Net Assessment and its Indian counterpart in order to bring together the defense research communities of both countries.

Similarly, a bilateral dialogue on a missile defense system is under way between the U.S. and India. Indian experts participated in a missile

*Joint exercises set the basis for cooperation*



PRAKASH SINGH / AFP PHOTO

defense exercise in Colorado in June 2002. Indian defense officials have traveled to the U.S. over the past two years to talk specifically about future involvement in missile defense programs. A missile defense workshop was conducted early in 2004 in New Delhi and India has been invited to attend the multilateral BMD conferences in Kyoto and Berlin and to observe the U.S. Roving Sands exercise in 2004.

Peacekeeping is an area where the Indian experience has many valuable lessons, as

India is a veteran of numerous peacekeeping exercises under the United Nations. "Shantipath," a joint U.S.-Indian Army peacekeeping exercise, driven by the latest computer war-gaming simulation, was held at the United Services Institution in New Delhi in early 2003. It involved many regional countries and was the largest such exercise ever in South Asia. It has set the stage for future cooperation in this area, as the world moves rapidly toward multilateral peacekeeping or



*USS Chancellorsville during the Malabar exercises off Kochi*

BHASKAR PAUL / INDIA TODAY

peace-enforcement missions in trouble spots that may not be under the UN umbrella.

Military cooperation is also fanning out to include cooperation programs in regional HIV/AIDS prevention between the PACOM's Center of Excellence and the Indian military medical organization. An agreement signed in February 2004 on coordinating military research, the master information exchange agreement signed by Secretary of Defense Rumsfeld and former Minister of Defense Fernandes, was a watershed of sorts between the U.S. and India. Now both systems move to share research in areas as diverse as armaments and survival techniques in extreme conditions like Siachen. The next step is to get the military laboratories and technologies to "talk" to each other, a quantum leap in the evolution of the bilateral relationship.

The U.S.-India defense relationship has grown to a stage where the future is clear. It is one in which the two militaries can work in unison to combat the regional and global challenges of terrorism, administer peacekeeping and humanitarian action, keep the high seas safe for the movement of commerce and energy, take the lead in preventing the proliferation of weapons of mass destruction and be a force for stability in Asia.

## PEACEKEEPING BIDS

**2002:** Multilateral peacekeeping operations exercise in Bangladesh

**FEBRUARY 2003:** U.S.-India Army Peacekeeping CPX "Shantipath," driven by latest computer war-gaming simulation was held at United Services Institution, New Delhi. It involved the U.S., India and 11 other countries, with over 150 participants. The co-hosted exercise was designed to familiarize participants with techniques for conducting



peacekeeping operations in a multilateral environment. The exercise involved battalion staffs from Bangladesh, India, Nepal, Sri Lanka and the U.S., and police and staff officers from Madagascar, Mauritius, Fiji, Mongolia, Malaysia, Thailand, Philippines and Tonga.

**Enhanced Peacekeeping:**

- India received Rs 3.6 crore (\$800,000) in EIPC funds for the next five years on training and equipment, supporting U.S.-sponsored seminars.
- India to co-host U.S.-sponsored peacekeeping operations exercises and host Pacific Armies Management Seminar and MPAT TE-7.

**AUGUST 2004:** IDS to co-host PACOM's multilateral Platoon Augmentation Team 07 PKO CPX series in U.S.



*The terrorist attacks on 9/11 changed the way the U.S. and India joined forces against global terror*



## LAW ENFORCEMENT COMBATING CRIME

**P**OST-9/11, U.S. and Indian law enforcement agencies have increased the depth and scope of their cooperation, yielding some impressive results. It is an image that has come to dominate modern-day perceptions and concerns—the masked terrorist armed with an AK-47 is no longer a filmmaker's stereotype, but a malevolent force that threatens the security of the global community. For some countries, it is a relatively recent phenomenon. Yet, other countries, like India, have experienced terrorism's mindless cycle of violence for well over a decade. Inevitably, as terrorist networks have grown and established international links, collaboration between countries has expanded to tackle the threats posed by these networks. The U.S. and India represent a classic example of this cooperation.

However, due to the nature of collaboration in the fields of law enforcement and anti-terrorism, many of the initiatives are not well known. The Indian public, for instance, is largely unaware that the U.S. Federal Bureau of Investigation (FBI) has set up an office in India. Or, that its Indian counterpart, the Central Bureau of Investigation (CBI), has a similar presence in the U.S. Other American law enforcement agencies, such as the Drug Enforcement Administration (DEA) and the U.S. Department of Homeland Security, Immigration and Customs Enforcement (ICE) also have bureaus in India. Together, these bodies, along with the Department of State's Bureau of Diplomatic Security, are cooperating on a wide range of law enforcement issues that affect both countries—one of the most notable issues being terrorism. As U.S. Secretary of State Colin Powell

### COMMON GOALS

#### AREAS OF LAW ENFORCEMENT COOPERATION BETWEEN INDIA AND THE U.S.

- Cyber Crime
- Narcotics Smuggling
- Terrorist Cells
- Credit Card Fraud
- Money Laundering
- Trafficking in Persons
- Alien Smuggling
- Trade Fraud

AP PHOTO/CHAO SOI CHEONG



## ANTI-TERRORISM ASSISTANCE

# TRAINING FOR A SAFER FUTURE

**THE DIPLOMATIC SECURITY SERVICE (DSS) AND INDIAN LAW ENFORCEMENT ARE WORKING TOGETHER TO FIGHT TERRORISM.**

As a leader in the fight against international terrorism, the Department of State's Bureau of Diplomatic Security has built a large international coalition to help in the fight against terrorism and prevent terrorist attacks. And India is becoming an increasingly important partner in this global fight. The Department of State's Anti-Terrorism Assistance Program (ATA) is a key component of anti-terrorism efforts. The ATA has been active in India since 1998, and has been on an accelerated path since 2001. The U.S. has spent over Rs 18 crore (\$4 million) on this effort, and joint training exercises have taken place in India and at DSS training centers in Washington, D.C., Louisiana and New Mexico. The coordinator for the ATA Program in India is the DSS representative at the U.S. Embassy, also known as the Regional Security Officer.

The ATA Program provides valuable skills, support equipment and technical advice to partner countries on a range of topics. Seminar and course topics include: response blast investigation, hostage negotiation, critical incident management,



*Indian officials train in a hostage negotiation simulation with USG counterparts*

anti-terrorism, counter-terrorism legislation, explosive incident counter measures, mass casualties, VIP protection, economic and computer crime investigation and a number of courses designed to combat weapons of mass destruction. U.S. and Indian participants share a wealth of information during the interactive courses and the experience gained builds the knowledge and capability of both sides. As a testimony to the program's success, the Indian Government is modifying and replicating many of the courses for use in its national academy structure and in other training efforts. By working together to strengthen anti-terrorism capabilities, the U.S. and India are protecting the lives of their citizens, both at home and abroad.

U.S. DEPARTMENT OF STATE DIPLOMATIC SECURITY

put it succinctly during his 2001 New Delhi visit, "The U.S. and India are united against terrorism, that includes terrorism that has been directed against India as well."

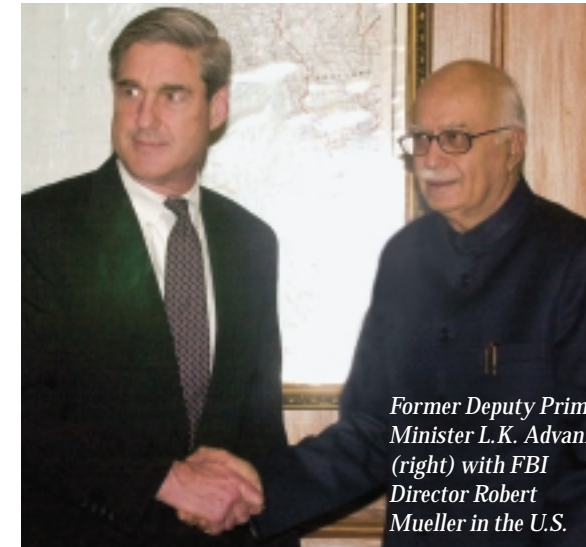
The most recent and public example of this collaborative approach occurred in September 2003 and involved India's most wanted terrorist-criminal, Dawood Ibrahim. Ibrahim, a Mafia don who the Indian Government believes masterminded the horrific Mumbai bomb blasts of March 1993 that took the lives of over 250 innocent people and left scores injured, had set up base in Dubai to control his criminal empire. Extradition attempts proved futile, but Indian intelligence agencies had gathered sufficient evidence indicating that Ibrahim was using a Pakistani passport and had clandestinely acquired property there. This information was passed on to U.S. intelligence agencies, along with evidence of Ibrahim's larger role in the international terrorist network as a key financier of certain terrorist groups.

The U.S. response was decisive. In late September 2003, U.S. Treasury Secretary John Snow flew to Islamabad for discussions with Pakistani authorities. The main item on the agenda was Dawood Ibrahim. Just one month after Snow's visit, the Treasury Department designated Ibrahim "a global terrorist" suspected of financing outlawed militant groups, including the Lashkar-i-Taiba, a terrorist outfit responsible for a myriad of attacks on Indian soil. As a result of this initiative, Ibrahim's assets in the U.S. were frozen.

For New Delhi, this was a major step forward in its 10-year campaign to bring Ibrahim to justice

and curtail his global operations. More importantly, it was a defining moment in the U.S.-India partnership in the global war on terrorism and fight against transnational crime. Even though the history of U.S.-India cooperation in law enforcement dates back to 1972, the year when the U.S. Drug Enforcement Administration (DEA) set up an office in New Delhi, joint efforts to tackle terrorist threats and activities were given a major impetus after the tragic events of 9/11. Prior to that, the focus of cooperation had been confined to fighting drug trafficking and narco-terrorism, a major area of concern, since India is sandwiched between the notorious heroin-producing regions of the Golden

REUTERS/STR



*Former Deputy Prime Minister L.K. Advani (right) with FBI Director Robert Mueller in the U.S.*

Crescent to the west and the Golden Triangle to the east.

The terrorist strikes on New York's World Trade Center, the Pentagon in Washington, D.C. and Pennsylvania in September 2001 enhanced the level of bilateral cooperation immediately and dramatically. India contributed valuable information and expertise that it had gained in its own fight against terrorism. The U.S. shared its financial resources and technological know-how. New Delhi and Washington quickly moved closer on a range of law enforcement issues.

The benefits of this new relationship became evident in the most dramatic of circumstances. In January 2002, terrorists

on motorcycles sprayed bullets at the American Center in Calcutta, killing four policemen who were guarding the building and injuring 14 others. The attack took place on the day FBI Director Robert Mueller was in India. Mueller's presence facilitated interaction that same evening between FBI personnel and Calcutta police. Investigations revealed that underworld gangster Aftab Ansari, based in the United Arab Emirates, had orchestrated the attack. Armed with evidence, the U.S. took up Ansari's arrest and deportation directly with the Government of the United Arab Emirates (UAE). Mueller himself went to the UAE and, shortly thereafter, the FBI arranged Ansari's deportation to India.

Even more dramatic was the terrorist strike on December 13, 2001, this time aimed at the heart of India's democracy, the Indian Parliament House. Within hours of the episode, then U.S. Ambassador to India, Robert Blackwill, informed India's Deputy Prime Minister L.K. Advani that the FBI would provide full support to Indian agencies to locate and identify the terrorists associated with the crime. In close coordination with the Indian police and intelligence services, the FBI helped analyze the communications made by militants prior to the attack and several arrests followed.

U.S. and Indian law enforcement cooperation is not just confined to events taking place within India's borders. In September 2002, Abu Salem Ansari, wanted in India on several counts of extortion, kidnapping, organized crime and involvement in the Mumbai blasts of 1993, was arrested in Portugal. Once again, the FBI's assistance helped to track him down. And DHS/ICE worked closely with its



## THE WONG CASE

# A GLOBAL OPERATION BRINGS DOWN HEROIN CZAR

When U.S. and Chinese authorities arrested heroin czar Kin Cheung Wong and members of his network in China and the U.S. in May 2003, there was little indication that his footprints could be traced to India. However, on May 17, 2003, with the help of intelligence supplied by the DEA, the NCB raided a flat in Calcutta and arrested five Burmese nationals. In addition, a significant quantity of chemicals used in the production of amphetamines was seized. Wong's men were in the process of setting up an illicit production facility in India.

Wong's arrest, the culmination of 20 months of investigation, is considered the most ambitious joint effort by the law enforcement agencies of the U.S., China and India. Agents worked across several time zones and grappled with multiple languages before apprehending criminals who took aliases such as Four Eyes, Cuttlefish and Lazy Man.

SOURCE: TIMES OF INDIA



*Burmese nationals arrested in Calcutta in May 2003*

counterparts in CBI on Ansari's money laundering violations, which allegedly took place in the U.S. Another significant case involved Partho Roy Burman, a shoe baron from Calcutta who was kidnapped by Ansari's men in July 2001. His family paid close to Rs 45 lakh (\$100,000) in ransom to secure his release. The FBI provided technical assistance to Indian investigators and one of the startling conclusions of the investigation was that Ansari had channeled part of the ransom money to terror groups outside India, and some of this money even made its way to the perpetrators of the 9/11 attacks.

Human trafficking has also become an important area of U.S.-India cooperation in recent years. On a number of occasions, including in February 2003 in Mumbai, the then U.S. Ambassador to India, Robert Blackwill, drew attention to the unprecedented worldwide surge in human trafficking and to the fact that the United States had made it a priority to fight the menace. Today, the U.S. is working with nongovernmental organizations in India to find ways to address this problem and with Indian law enforcement agencies to develop antitrafficking workshops.

An estimated 50,000 women and children are trafficked into the U.S. each year—and this figure may be underestimated. A new U.S. law, the Victims of Trafficking and Violence Protection Act, allows prosecutors new tools to grant legal immigration status for victims of trafficking. At the same time it increases criminal prison terms from 10 years to 20 years. The "Plan of Action to Combat Trafficking and Commercial Sexual Exploitation of Women and Children" introduced by the Indian Government's Department of Women and Child Development provides a focused operational agenda and framework in which to continue program development at the state and central government level, working with government and NGOs.

According to a June 2003 report of the U.S. State Department, India has become the transit point and final destination for thousands of trafficked persons. "Internal trafficking of women, men and children for purposes of exploitation, domestic servitude, bonded labor, and indentured servitude is widespread," the report stated. It also highlighted the fact that India is a prime destination for sex tourists. Equally worrying, according to the report, was the growing importance of India as a transit

country for Bangladeshi women and children who are trafficked into India or transited through India en route to Pakistan and the Middle East for the purposes of sexual exploitation and forced labor. The report also highlighted the issue of Nepalese women and girls being brought to India for commercial sexual exploitation.

The report, which was introduced by U.S. Secretary of State Colin Powell, says that the Government of India is making significant efforts to tackle the menace despite limited resources. The report also makes note of the excellent work some Indian NGOs are doing in the realm of preventing trafficking and protecting its victims. The Karnataka Government's Stree Shakti plan is one of several programs cited as being particularly successful, and the report praises the state government's objective of empowering rural women below the poverty line to achieve financial independence through income-generating activities.

The State Department's Bureau for International Narcotics and Law Enforcement Affairs (INL) is working closely with a number of anti-trafficking NGOs throughout India to strengthen India's ability to prevent trafficking, investigate cases and arrest, prosecute and convict traffickers and other criminals associated with trafficking in humans. Indian NGOs and state governments are also working on ways to rehabilitate the victims of trafficking. In states such as Karnataka, Andhra Pradesh, Maharashtra, West Bengal, Tamil Nadu

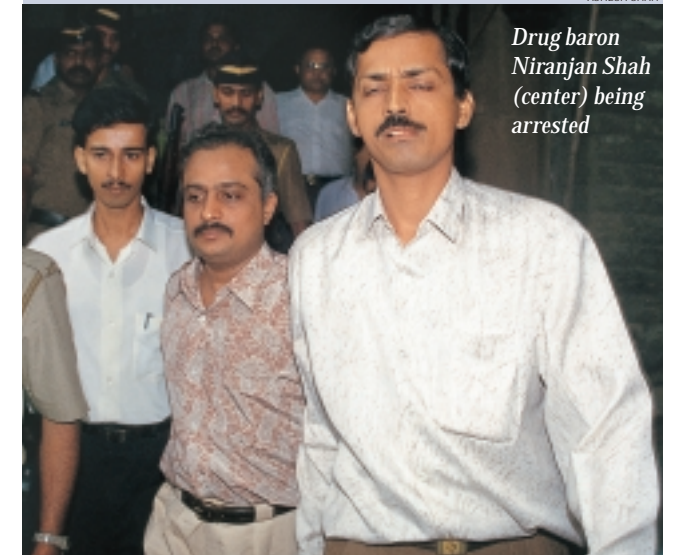
## ANTI-DRUG ENFORCEMENT

# ON THE TRAFFICKERS' TRAIL

### COUNTER-NARCOTICS EFFORTS IN INDIA GET A BOOST WITH DEA ASSISTANCE.

Cooperation between the Drug Enforcement Administration (DEA) and Indian law enforcement agencies is at an all time high. Success on the ground is clearly visible, a prime example being the arrest of drug baron Niranjan Shah in Mumbai in April 2003 for the shipment of 500 kilograms of hashish to the U.S. The Department of State's Bureau of International Narcotics and Law Enforcement Affairs, with the cooperation of DEA and the U.S. Department of Homeland Security, Immigration and Customs Enforcement (ICE), is funding six major drug-related law enforcement

ASHESH SHAH



*Drug baron Niranjan Shah (center) being arrested*

projects. These projects take a closer look at narcotics law enforcement, intelligence infrastructure enhancement, drug-testing laboratory training, technical equipment and capability upgrades.

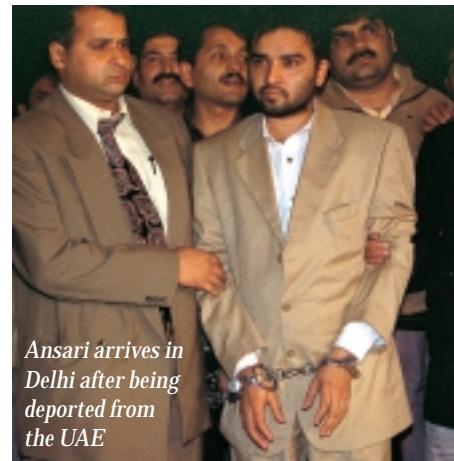
All of the projects are aimed at improving enforcement capabilities of Indian agencies like the Narcotics Control Bureau and the Central Narcotics Bureau. Under these projects, Indian agencies will receive vehicles, computers, radios, audiovisual transmission devices, cameras, drug-test kits, chemical laboratory equipment, global positioning systems (GPS) and night-vision equipment. India's northeastern states, bordering four countries, provide enormous opportunities for narcotics smuggling. To counter this, India will get lightweight scanners and bulletproof jackets, among other items. This assistance is symbolic of the new ties of cooperation that the DEA has forged with its Indian counterparts.

and Gujarat one such measure is to provide economic assistance to poor and vulnerable populations, which are specifically targeted by traffickers. Improving the living standards and prospects of women and children afflicted by poverty reduces their chances of falling victim to trafficking. There is also monitoring of transit locations, including border posts, bus and train stations and airports, aimed at rescuing victims from the traffickers who escort them. Efforts are also being made to make the laws against traffickers, and those who aid and abet them, more stringent.

The arrest of Lakireddy Bali Reddy is one example of U.S.-India cooperation in the fight against human trafficking. The San Francisco restaurateur ran a lucrative human trafficking racket for years. Reddy provided fake documents to obtain visas and lured poor, young girls from Indian villages to the U.S. promising them a bright future. Once in the U.S. Reddy's men enslaved these girls as sex slaves and commercially exploited them. In early 2001, the FBI, the U.S. Immigration and Naturalization Services (INS) and India's CBI began joint investigations into the racket. Key witnesses were sent to the U.S. from India and by March 2001, two of the accused were convicted and Reddy himself pled guilty in June the same year.

Other cases are under investigation, arrests are taking place and efforts continue to catch people involved in human trafficking and child pornography. However, the menace continues and the threat to a large section of human society remains. As Secretary of State Powell observed grimly, "It is incomprehensible that trafficking in persons should be taking place in the 21st century. But it is true, very true."

In the larger context, different agencies like the DEA, FBI, DSS, DHS/ICE and INL provide the cutting edge to U.S.-India law enforcement cooperation. Policy-making, however, is done at the level of the Counterterrorism Joint Working Group (CTJWG) established in January 2000. The U.S. and India are also working on a mutual legal assistance treaty to give the CTJWG more impetus in its efforts to tackle terrorism and criminal activities. Information and intelligence are crucial weapons in the war against terror, as exemplified by the broad-based exchange of information between India and the U.S. and the assessment of international and regional terror incidents, terrorist groups and their strategies. In order to strengthen intelligence and investigative cooperation, the U.S., through the Department of State's Bureau of Diplomatic Security's ATA Program, regularly sponsors training programs designed to enhance the capabilities of Indian law enforcement officials. Due to its expertise in information and telecommunications technology, the U.S. was instrumental in the creation of a cyber-security forum designed to enhance information security and address the challenges posed by cyber-terrorism. The CTJWG has also initiated a dialogue on homeland and internal security, covering such topics as terror-financing networks, forensic sciences, transportation security and border control, thereby enhancing the ability of authorities to track the activities of suspected terrorists. In support of this dialogue, DHS/ICE, DHS/CBP and Indian customs will sign a customs mutual assistance treaty,



*Ansari arrives in Delhi after being deported from the UAE*

SIPRA DAS / INDIA TODAY

## FBI - CBI COOPERATION

# THE POWER OF TWO

**AFTER 9/11, U.S.-INDIA COOPERATION IN COMBATING TERRORISM ACQUIRES A NEW DIMENSION. ANSARI'S EXTRADITION IS A HIGH POINT OF THE SUCCESS STORY.**

While the FBI has been closely working with its Indian counterparts in investigating acts of terrorism, international crimes, money laundering and customs violation for years, in the post-9/11 world this bilateral cooperation has acquired a new dimension. This clearly led to one of the biggest success stories of U.S.-India collaboration, the extradition of underworld gangster Aftab Ansari from the UAE to India in February 2002. Ansari was the man who, sitting in Dubai, masterminded the attack on the American Center in Calcutta.

Away from the headlines, the FBI is working closely with the CBI in tracking cyber crime. FBI specialists in the investigation and interdiction of e-crimes have been leading regular workshops for CBI officers. This cooperation has helped on



*FBI agents training Indian police officers*

YASBANT NEGI / INDIA TODAY

critical occasions. On Christmas Eve 1999, when Indian Airlines flight IC 814 was hijacked, the FBI joined the investigations because Jeanne Marie Moore, one of the passengers on board, was an American citizen. The FBI office in India has not only been supporting the Indian probe into the hijacking and its perpetrators, but has also conducted an independent investigation of its own. Teamwork is a continuous process and both countries are aware of the fact that it is by cooperation alone that the world can be made a safer place.

formalizing their cooperation on a range of customs and border issues.

While terror and human trafficking are high on the agenda for both the U.S. and India, the solid foundation laid by DEA's presence on Indian soil since 1972 underscores the joint efforts to combat drug trafficking as well. The DEA's relationship with the Narcotics Control Bureau (NCB), its counterpart in India, has strengthened over the years. Reflecting the greater cooperation between the two organizations, the State Department's Bureau for International Narcotics and Law Enforcement Affairs has funded commodities for the Central Bureau of Narcotics (CBN), which regulates illicit opium growth and processing and precursor chemical import/export, and the Indian Customs' counter-narcotics programs over the past three years. This includes donating 100 vehicles, communication equipment and computers pursuant to Letters of Agreement signed with the Ministry of Finance over the past four years. A Letter of Agreement amendment signed in September 2003 provides Rs 9.82 crore (\$2.18 million) for projects to strengthen the infrastructures of NCB, CBN and Indian Customs. The projects include improving the intelligence-gathering capacity for NCB, training for all three agencies, strengthening the Government of India's (GOI) drug laboratory testing facilities, the exchange of ideas and solutions on customs-specific issues and providing commodities to assist GOI law enforcement agencies in investigating, prosecuting and convicting traffickers in illicit drugs and precursor chemicals.

From terror attacks to human trafficking, narcotics peddling to cyber forensics, the range of cooperation between the U.S. and Indian law enforcement agencies continues to increase. More than ever before, both countries realize the importance of working closely to meet the new and serious challenges posed by terrorists and criminals who operate across international frontiers.



# USAID

## THE LAST MILE

The U.S.-India development partnership is a robust relationship that has spanned more than five decades. The nature of U.S. assistance in India has changed significantly over time: from sending food to a famine-struck nation 50 years ago to today's cooperative alliance that will help India complete its last mile of development. The U.S.-India relationship is deeper and stronger than ever before.

What began as a loan to India to buy two million tons of wheat in 1951 to alleviate a domestic food crisis has grown into a comprehensive program, led by the United States Agency for International Development (USAID) in close cooperation with Indian partners. In 2004, USAID will invest Rs 610 crore (\$135 million) in economic growth, health, disaster management, environment and equity assistance. The U.S. is currently India's third largest bilateral aid donor.

Today, President George Bush and former Prime Minister Vajpayee have committed the countries to a strategic partnership. Cooperation between the world's two largest democracies is expanding. Current development initiatives exemplify the transformation of our bilateral relationship which is one of growing friendship and common vision.

USAID leverages public and private resources to tackle global issues such as climate change, fight HIV/AIDS and other infectious diseases, improve family health care and child survival, expand access to clean energy and water, open financial markets, and create opportunities for vulnerable people, particularly women and girls.

In the long-term, USAID envisions India's civil society working

with American private partners to solve development problems, without the need for U.S. economic assistance. A new model for achieving development goals is being tested: a "partnership fund." The fund would be a private, independent entity that links American and Indian institutions to meet remaining challenges after U.S. assistance finishes in 2015. The timeline coincides with India's primary development goal: to halve poverty by 2015 and eliminate it soon thereafter.

USAID partners with the Indian Government (at the state and national levels), NGOs and private interests to solve continuing social, environmental and health problems: low maternal and child survival rates; a burgeoning population that strains resources; high levels of disease and malnutrition; water and air pollution; and limited opportunities for women and girls.

*USAID partners with the Indian Government to improve the quality of life of the Indian people*

SANDEEP BISWAS/ COURTESY: UNICEF





## 1950-1999

### USAID FUNDING OVER THE DECADES

■ 1950s: Assistance began in 1951 with a loan to India to purchase 2 million tons of wheat.

■ 1960s: Major support to India's "Green Revolution," an investment in agricultural research, facilities and information-sharing that helped raise food grain production to self-sufficient levels. Assistance also focused on education, power projects and infrastructure development.

■ 1970s: USAID suspended its operations, except for food aid, in the wake of India's war with Pakistan. Assistance resumed in 1978.

■ 1980s: Emphasis shifted to technology transfer. Collaboration on projects included the development of satellite systems. U.S. loan guarantees supported India's development of private sector housing financing systems.

■ 1990s: Focus moved to economic reforms, efforts to mitigate HIV/AIDS and other infectious diseases, and activities to boost reproductive health. U.S. assistance helped to set up India's first securities depository and funded landmark research studies on violence against women.

In keeping with the new tenor of U.S.-India relations, U.S. assistance is also investing in activities that focus on shared interests between the countries, raise India's current capacities to a higher level, and catalyze wider prosperity and sustainable development:

- expanded capital markets and more fiscally sound state governments;
- strengthened commercial viability in power utilities and reduced public resources for subsidies (which can be used instead for health and social infrastructure, for example);
- improved energy efficiencies and cutting-edge technologies that "fuel" growth and conserve resources;
- revitalized and expanded disaster management systems to handle natural or man-made emergencies;
- more scientific collaborations to fight public health threats and boost productivity in agriculture;
- enhanced cooperation with the Government of India to provide nutrition for needy women and children, linking the food aid to family health care and HIV prevention;
- augmented use of information technology and new educational methods to boost literacy in women and girls, and improve their quality of life; and
- well supported HIV/AIDS prevention and care to stem an epidemic on the threshold of exponential growth.

India is on the last mile of its development journey and the two countries are committed to walking the last mile in partnership.

### BRIDGING THE FINANCING GAP

One-third of India's one billion people live in urban areas, and the country continues to urbanize at a rapid pace. Fewer than one-third of households have sanitation systems, an obvious threat to public health. There are not enough public resources to devote to roads and public facilities, as only Rs 45 crore (\$100 million) of a needed Rs 2,700-3,600 crore (\$600-800 million) per year is available.

Issuing municipal bonds is one way of tapping into private finances to help India bridge the gap between capital markets and infrastructure development. Developing debt markets helps the



USAID funds helped in drought relief

PRAMOD PUSHKARNA/INDIA TODAY



The Kotarpur water processing project near Ahmedabad has been funded by USAID

SHAILESH RAVAL/INDIA TODAY

country become more independent in addressing its growth agenda.

In January 1998, the Ahmedabad Municipal Corporation (AMC) reached a turning point in municipal government finance: it issued bonds worth Rs 100 crore (\$21 million) to raise money to fund infrastructure projects. For the first time in South Asia, municipal bonds were issued without a state government guarantee. Not only were part of the AMC bonds quoted on the stock exchange, they were also oversubscribed. The success of the experiment showed that issuing municipal bonds to finance infrastructure projects works in India and that the model could be replicated in other parts of the country. Money raised from the AMC bond partially financed a water supply and sewerage project.

U.S. assistance played an important role in creating conditions for India's first issue of municipal bonds. Five years earlier, AMC was in debt, its deficits reaching Rs 35 crore (\$6 million). That is when USAID and its partners stepped in and helped the AMC restructure its financial

## 2000-ONWARDS

■ 2000 onwards: USAID supported financial reforms at the state and national levels. Reproductive health and infectious disease work continued. New areas of investment include energy sector reforms, disaster management systems, anti-trafficking and anti-child labor through education, and access to justice for women.



Disaster management and reforms in the fiscal and energy sectors are USAID's latest concerns.

management and accounting systems. AMC ended its losses in three years and earned an investment grade of "AA" from CRISIL (Credit Rating Information Services of India). Since then, eight other municipal corporations have raised money by accessing capital markets. Under a "pooled financing scheme," introduced by USAID, smaller local bodies in Tamil Nadu have jointly issued bonds to upgrade their water and sanitation systems, and a similar approach is underway in eight municipalities in the Bangalore Metropolitan area.

LIGHTING THE WAY

Expanding access to clean energy is a core area for U.S. assistance. The centerpiece of energy reform work is better electrical power distribution, building on achievements in cleaner energy generation and use of renewable technologies. The Noida Power Company Limited (NPCL), a USAID-funded partner, has become a model for more efficient and commercially viable rural

SHARAD SAXENA / INDIA TODAY



The Noida Power Company Ltd, a partner in providing reliable power

power distribution. With an initial loan of Rs 2.8 crore (\$600,000), USAID has helped support rural power reforms undertaken by the company.

With the rural power supply system plagued by power theft, inefficient use of energy-losing power lines, indiscriminate subsidies, and rampant use of energy-wasting agricultural water pumps, Prabir Neogi, CEO of NPCL, says his company tries to reduce energy losses in rural areas through new technology and management approaches. The net effect is more reliable power service coupled with expanded economic and social progress.

NPCL created a reliable power system by extending high voltage lines and introducing low-voltage insulated wires. It made customer service a trademark of the company by improving billing and metering systems. Then, NPCL engaged an NGO to create awareness among villagers of the "real costs" of unreliable power and the benefits of energy conservation.

The result: for the first time villagers in Uttar Pradesh opted for metered connections and uninterrupted power supply instead of erratic supply under the subsidized regime. In addition, new, energy-efficient irrigation pumps that also boost water conservation were installed for use by farmers.

Experience is showing that Indian customers will pay for unsubsidized power when it is reliable and coupled with commercial services, and they see how quality of life increases. Development analysts say this shift in mindset is essential if the country is to rid itself of the burden of a subsidized economy that limits public investments in other essential social needs, such as health and education.

SAFEGUARDING INDIA

The Orissa cyclone in 1999 and the Gujarat earthquake in 2001 were major catastrophes for India. Over 22,000 lives were lost, and more than 3 million homes were damaged. The international response to the calamities was a starting point for broad cooperation in disaster management.

A Rs 72 crore (\$16 million) bilateral agreement between the U.S. and India expands cooperation between the two democracies in disaster management science, technology and systems to safeguard India's people and the country's development process. It is another

FUTURE SCOPE

USAID SUPPORTS A VARIETY OF PUBLIC AND PRIVATE PARTNERSHIPS IN MULTIPLE INDIAN SECTORS

- Economic Growth: Activities bring new investors to capital markets, help state governments forecast and analyze fiscal decisions, generate financing for urban development and advance agricultural technology.
- Health: Efforts increase access to family health care, nourish needy mothers and children and boost their resistance to disease, fight diseases and prevent HIV/AIDS.
- Disaster Management: U.S. Government experts share disaster management science, technology and systems with Indian counterparts to mitigate disaster effects.
- Energy and Environment: Initiatives expand access to clean energy and water by showing that viable power utilities are instrumental to expanding supply and meeting consumer needs—and reap social and economic benefits. Water conservation, clean technology in industry and renewable energy are being promoted.
- Equity: U.S. assistance is creating opportunities for vulnerable people through activities that keep girls in school and raise quality of education, mitigate child labor, combat trafficking in humans and improve the efficiency of family courts.



U.S. and India cooperate to mitigate the impact of natural calamities such as the drought in Rajasthan (below) and the Gujarat earthquake (bottom)



BANDEEP SINGH/INDIA TODAY



milestone in the transformation of the U.S.-India relationship.

The initiative expands and revitalizes India's disaster management systems at the national, state and local levels. With USAID in the lead, it pairs U.S. experts with Indian counterparts to share methods, tactics and technologies, and draws in new U.S. partners, including the Federal Emergency Management Agency, the U.S. Forest Service, the National Oceanic and Atmospheric Administration, and the U.S. Geological Survey.

USAID and the Government of India Ministry of Home Affairs are working as partners to set priorities and carry out improvements. Major elements of the collaboration include: adapting elements of the U.S. Incident Command System to boost Indian rapid response capabilities; better climate forecasting to reduce the impact of weather-related events (such as floods, cyclones or droughts); stronger Indian Federal Government support for local emergencies through preventive planning; and targeted community preparedness in high-risk districts of the country.



H.K. RAJASHEKHAR/INDIA TODAY

## PROGRESS IN THE BATTLE AGAINST AIDS

In 1986 the first case of AIDS was reported in Tamil Nadu. Today there are 4.5 million Indians who are infected with HIV, second only to South Africa. A sobering situation, but with some good news—Tamil Nadu, an HIV/AIDS “hot spot,” is seeing infection rates plateau due to prevention efforts.

USAID began its AIDS Prevention and Control (APAC) Project in Tamil Nadu in 1992. It is a U.S.-India bilateral initiative that is administered by Voluntary Health Services. HIV prevention is focused on high risk groups (truckers and commercial sex workers) in urban areas. It includes care and support for infected people.

Mass media campaigns, intensive support to NGOs, research and close collaboration with the state government of Tamil Nadu have raised awareness about HIV and safe behaviors that prevent its spread. The effort is showing results: overall HIV infection rates are moving slightly downward; and condom use among truckers jumped from about 50% to nearly 84%, and was even higher among sex workers (nearly 88%).

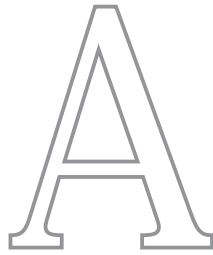
First funded for Rs 48 crore (\$10 million) from 1992 to 2002, additional U.S. assistance of Rs 70 crore (\$15.5 million) was awarded through 2007.

An HIV-AIDS counselling center in Tamil Nadu

The relationship between the U.S. and India has matured into a dynamic alliance.

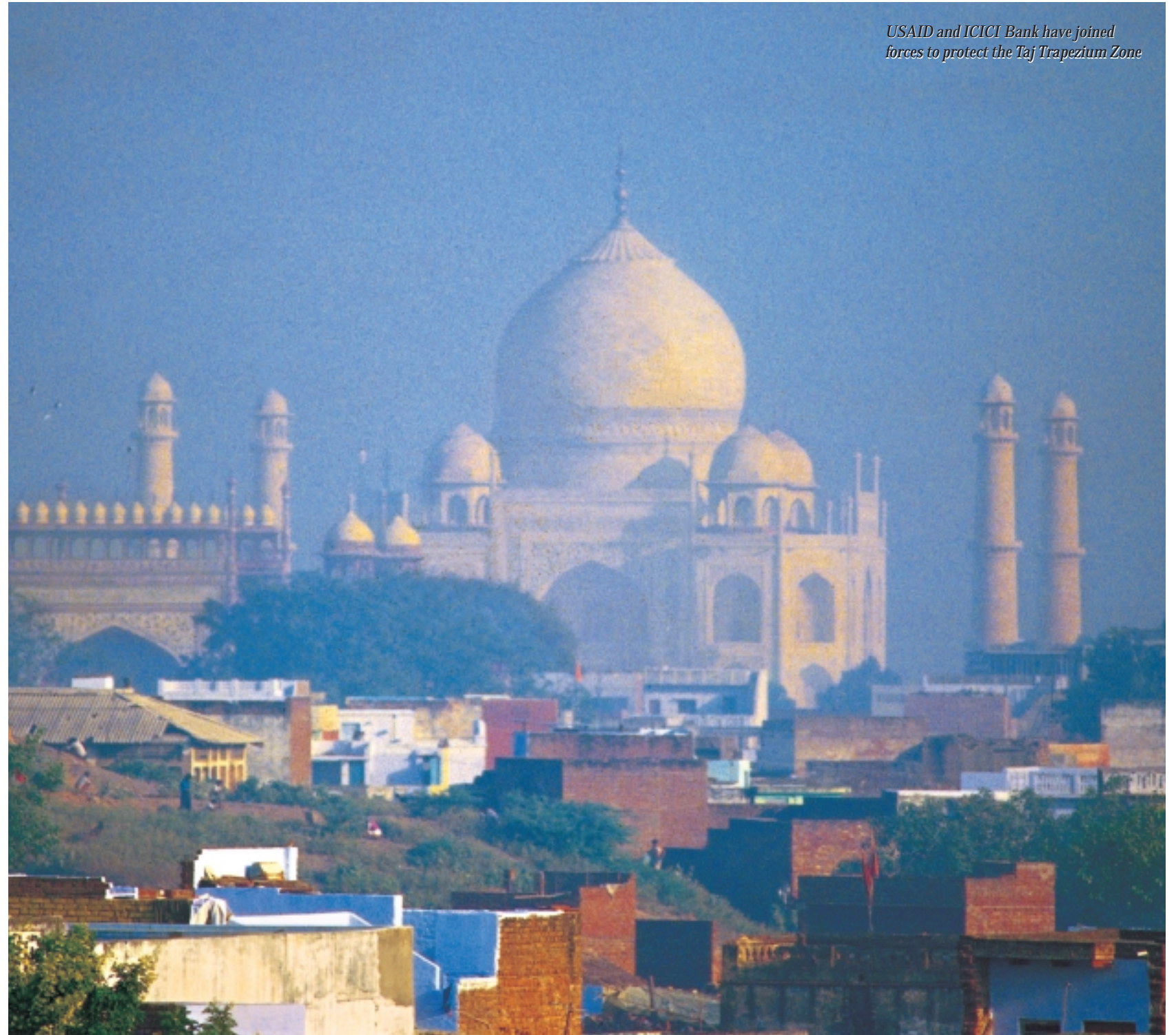
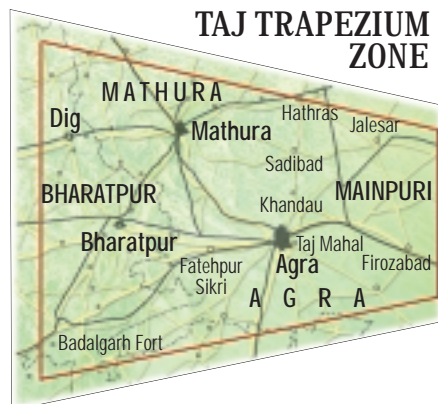


ENERGY & CLIMATE CHANGE  
**ECO-SENSE IS  
 SENSIBLE ECONOMICS**



As you reach the banks of the Yamuna river near Agra, the magnificent white-marble edifice of the Taj Mahal rises into the horizon stirring your senses to the 15th century beauty—a testimony of Mughal King Shahjehan’s love for his wife Mumtaz. But over the years, the pollution created by vehicular traffic and small-scale industries surrounding the Taj Mahal has damaged the monument, prompting the Government of India, courts, activist groups and donor agencies to raise awareness about the threat and develop programs to ensure the monument’s survival.

This is, perhaps, one of the most visible examples of the U.S.-India partnership on energy and climate. Among the many activities that have formed the partnership over the years is the Clean Technology Initiative (CTI), a joint effort of the U.S. Agency for International Development and the ICICI Bank to promote climate-friendly technologies and certifiable environment management systems (EMS). In its newest evolution, CTI is focused on the 10,400 sq km Taj Trapezium Zone (TTZ) to help achieve sustainable industrial growth while protecting the environment. The plans for the TTZ include the launch of a host of



*USAID and ICICI Bank have joined forces to protect the Taj Trapezium Zone*



USAID's GHG Pollution Prevention Project benefits NTPC power plants



USAID and Indian agencies are collaborating to facilitate a hydrogen economy.

cleaner production processes in glass, bangle-making, foundry and diesel generator manufacturing. In addition, the project aims to create awareness of clean technologies and conduct factory walkthroughs to identify cost-effective and energy-efficient options. It will also arrange the necessary finances and render the supply chain "green."

During 2003, India and the United States launched a new initiative known as the U.S.-India Climate Change Partnership, which includes 18 activities focused on research, technology cooperation, carbon sequestration, market-based mechanisms and institutional approaches, and adaptation. The initiative is being led by the U.S. Department of State and the Government of India's Ministry of Environment and Forests. A broad coalition of government agencies from both countries participates in the climate change partnership. The partnership builds on the past success in climate change cooperation between India and the U.S. while looking toward future opportunities.

Central to this partnership is the work of the Greenhouse Gas Pollution Prevention (GEP) Project. This is USAID's largest climate

change initiative worldwide. The project's efficient power generation component seeks to reduce greenhouse gas (GHG) emissions per unit of electricity generated by thermal power stations. Power plants of both the National Thermal Power Corporation and State Electricity Boards have benefited from this program. GEP's Alternative Bagasse Cogeneration component encourages efficient use of biomass fuels in sugar mills. In the past, cogeneration units used low temperature and low pressure turbines which deliver lower efficiency. The focus is now on high-efficiency configuration systems at nine sugar mills where financial and technical assistance have been provided. Also, the project's climate change supplement seeks to develop human and institutional capacity to design and implement policies that reduce GHG emissions. It has created greater awareness of climate change issues among a broad group of stakeholders, worked closely with municipal corporations in Hyderabad, Bangalore, Agra and Delhi on specific initiatives, and helped to secure funding for a diversity of GHG mitigation projects.

A separate activity, Accelerating Renewable Energy Commercialization in India, is designed to overcome barriers that impede private investment in the field. It has funded and promoted solar, wind, hydro and biomass technologies in Karnataka, Andhra Pradesh, Tamil Nadu, Rajasthan, Himachal Pradesh,

## ZERO POLLUTION MOBILITY

### TWO FOR THE ROAD

**REVA, THE SMOKELESS CAR, IS NOT ONLY AFFORDABLE BUT OFFERS PRIVACY FOR THOSE WHO DO NOT WANT A THIRD PERSON ON A RELATIVELY LONG AND FAST TRIP**

It can carry two at 80 kmph, has no gears, no petrol or diesel is needed and, of course, there is no smoke. It can travel 80 km without a recharge, and it is called Reva. India's very own electric car, Reva was designed in a joint venture between the Maini Group, Bangalore, and Amerigon, Monrovia, CA. Compared with a petrol-driven car, which costs Rs 2.60 per km, Reva costs barely 40 paise per km, using the equivalent of nine units of power. The basic Reva model is priced at Rs 2.47 lakh (\$6,000), while the fully loaded version comes at Rs 3.22 lakh (\$7,000). A truly cutting edge collaboration supported by USAID, Reva has been tested in the U.S. and commercially marketed since mid-2001 in India and abroad.

In fact, the Maini group, in collaboration with a UK-based firm, Going Green Plc, will export 500 cars to Britain under the brand name G-Wiz. The

SAIBAL DAS/INDIA TODAY



*This eco-friendly car got a good response in global markets*

battery-run vehicle has recently been granted the European Economic Community's certificate for homologation, which qualifies the firm to enter the European market commercially and its potential is huge. As Chetan Maini, the Managing Director of the Rs 600 million Maini Industrial Group said, the certification validates Reva's technical expertise in the auto industry. The compact car makes sense for mobility in European cities and towns and will be competitive as it will be the lowest-cost electric car in the European and British markets. Maini maintains that, as the second largest electric car producer in the world (behind U.S.-based Ford), Reva has the first move advantage in the emerging trend for zero pollution cars.



## THE ORCHID

# PROFITABLY ECO-FRIENDLY

### THIS MUMBAI-BASED HOTEL IS A SUCCESSFUL EXAMPLE OF A JOINT U.S.-INDIA GREEN INITIATIVE

With funding from USAID, the Orchid Group of Hotels, India's first eco-hotel chain, is setting new standards for energy conservation. The facade of the Mumbai hotel is a blend of depressions and protrusions that are designed to reduce radiation. The design and placement of the rooms reduce heat load and sound while adding light. And the rooftop pool acts as an insulator. The cement used throughout the building is Portland pozzalana, which contains 15% fly ash. The internal partitions are constructed from QED wall panels, which are made from fertilizer waste, instead of red bricks, which are made from the top soil of the earth.

The hotel also reduces, reuses, and recycles water through special aerators, which increase the water's force and reduce outflow, and the Geberit Concealed Cistern, which uses only six liters of water per flush versus the 15-20 liters used in conventional flushes. The waste-water is then treated using the

latest technology and reused for air-conditioning and gardening. The hotel's interiors are designed to cut sound, light and cost, as triple-glazed windows block the heat of the sun and help conserve air-conditioning energy. The windows also prevent fabric and furniture colors from fading, as the triple-glazed unit prevents infrared sunlight from entering the room and effectively cuts down on the noise pollution from India's busiest airport.

The Orchid also saves energy through recycling paper and treating garbage via vermiculture. Even cockroaches are killed herbally. Not surprisingly, the hotel is estimated to have had a savings of over Rs 1 crore per year. The hotel's success is marked by a high repeat clientele rate and by the fact that other hotel managers are visiting the site to learn about the benefits of being profitably green. The Orchid is a successful example of a joint U.S.-India green initiative that promotes business-friendly environmental management systems.

*Business management gets a new meaning at the Orchid as the hotel profits through its eco-friendly systems*

BHASKAR PAUL/INDIA TODAY



SHARAD SAXENA

Gujarat and Madhya Pradesh. The partnership also brings in other U.S. Government agencies. Integrated Environmental Strategies, a collaboration between the U.S. Environmental Protection Agency, the National Renewable Energy Lab, USAID and Indian institutions, quantifies the human health, economic, and environmental benefits from clean energy policies and technologies.

There are many other areas where collaboration between the two countries has paid off. With coal accounting for nearly 70% of power production in the country, the World Bank pressed India to come up with innovative measures to dispose of the huge quantities of fly ash. Current estimates put the figure at 95 million tons of fly ash produced each year. Rising to the critical occasion, the Ministry of Power and the NTPC began to work with USAID and the U.S. Department of Energy (DOE) to find a productive use for fly ash and reduce the risk of health hazards. Efforts have focused on using fly ash in wasteland reclamation, as construction material in concrete and brick-making and as a foundation for road beds. As an example, the Delhi-Noida-Delhi Flyway has been built over fly ash recovered from thermal power plants. One good possibility to utilize large quantities of fly ash lies in the Gorbi Mine ash haul back study, which explores the feasibility of

*CTI is promoting clean technology in bangle manufacturing in the TTZ*



Shree Cements received funding of Rs 29.3 lakh in May 2000 to set up a heat recovery system at its cement mill using hot dust laden flue gases. The technology was provided by Caldyn Inc., New York.

Morarjee Gokuldas Spinning and Weaving Mills was provided funding of Rs 27.7 lakh in March 2000 to implement energy-efficient improvement measures in the textile mill.

—Both were funded under the Clean Technology Initiative run jointly by USAID and ICICI Bank.

backfilling the abandoned mine with fly ash and eventually returning it to a forested state.

The U.S. first raised the idea of cooperation in the energy sector back in the 1960s. The fact that the U.S. and India are at different levels of development hardly matters. What does matter, however, is the willingness to work together and learn from one another. The individual approaches of the two countries may differ but their end-goal is the same—cooperation in the field of energy and climate change is mutually beneficial. Says Harlan Watson, senior U.S.



U.S.-Indo projects have helped fund solar, wind and hydro technologies

climate negotiator: “The bilateral partnership allows us to share our experience and knowledge with India in climate change and science and technology.”

Not surprisingly then, India and the U.S. are collaborating on a range of activities that require educational inputs, consultancy services and funding in the energy sector. Practitioner-to-practitioner contacts have become the norm between utilities under the Energy Partnership Program. In states like Andhra Pradesh, Maharashtra, West Bengal and Karnataka, a series of links have been developed to ensure better electricity supply and distribution. And it is this second element, energy distribution, that is quickly becoming the key to the growing bilateral relationship on energy and climate change.

The U.S.-India partnership in energy has evolved from a focus on electricity generation to an emphasis on energy distribution. To this end, USAID/India is funding a variety of distribution-based projects with the aim of contributing to the power distribution reform process and introducing commercial best-practices with regards to energy and water resource management. The Water-Energy Nexus Activity

U.S.-India collaboration stresses the importance of harnessing renewable energy sources like wind



(WENEXA) strives to bridge the policy gap between the water and energy sectors and works with institutions on the national, state and local levels. The project's objectives include developing policies that promote and support viable power distribution companies, fostering state-level water sector reforms, reinforcing market-oriented energy policies and ensuring the effective communication of water and energy issues to village and town residents.

The Distribution Reform Upgrades and Management (DRUM) project is another example of the shifting focus in U.S.-India energy collaboration. Today, the reform of power distribution is widely viewed as the key to improving the commercial performance and financial viability of India's power sector. In recent years, a number of states have worked to improve the commercial performance of their state utilities, including the unbundling of state entities, the creation of more independent regulatory systems and the development of measures to control losses and theft.

Recognizing the urgent need to address the issue of reducing losses and improving the quality of power delivery, the Ministry of Power (MoP) has focused on implementing distribution reforms and has introduced several measures to further the process. The recent initiatives include the enactment of the Electricity Act 2003, which provides the framework for a more competitive, transparent and commercially-driven power sector. The Act recognizes the need for a strategy that distinguishes urban power distribution from rural electricity supply. It also facilitates establishment of participatory models for rural distribution, including electricity cooperatives, rural *gram panchayats*



## NOIDA TOLL ROAD

## GREEN FLYWAY

**THE SLOGAN: REDUCE THE HAZARDS BUT MAKE USE OF FLY ASH. HERE IS A GRAND BID TO CREATE GARDENS AROUND FLY ASH PONDS.**

It is estimated that currently 95 million tons of fly ash are being generated in India annually and over 65,000 acres of land are being occupied by ash ponds. Such a huge quantity of fly ash poses challenging problems in the form of land usage, health hazards and environmental dangers. In a collaborative effort with USAID and the U.S. Department of Energy, the Ministry of Power and the National Thermal Power Corporation are working out ways to not just reduce these hazards, but also to use fly ash productively and economically.

The World Bank has cautioned India that by 2015, disposal of coal ash would require 1,000 square kilometers of land. Since coal accounts for almost 70% of the country's power production, the World Bank has highlighted the need for new and innovative methods of reducing the environmental impact. To this end, the MoP and NTPC are creating gardens around the fly ash ponds using leguminous plants and moss that help the wasteland to regenerate organic matter. It is interesting to note that the material used for the Noida freeway foundation in Delhi is made from fly ash recovered from thermal power plants. Fly ash is even being used as an effective ingredient in eco-friendly cement plants and brick kilns. The question of whether fly ash could be used to fill abandoned coal mines is currently under study. The long-term success of these and other green initiatives will be critical for India's future.



*Noida toll road makes use of fly ash as landfill*

(local government), distribution franchisees, etc. Another program focused on improving electricity distribution is the Accelerated Power Development Reform Program (APDRP), which finances the modernization of sub-transmission and distribution networks, including a system of local management and energy accounting through widespread metering in every state utility's distribution circles.

The MoP and USAID/India recognize that the major inefficiencies in the electricity distribution sector inhibit more rapid and comprehensive reform of the energy sector throughout the country. As a result, USAID/India designed the DRUM project with the purpose to demonstrate best commercial and technological practices that improve the quality and reliability of "last mile" power distribution in selected urban and rural distribution circles in the country. The project is in synch with the GoI policy on power sector reforms, the Electricity Act 2003 and the APDRP scheme. DRUM is a five-year bilateral project with a planned funding of Rs 135 crore (\$30 million) over the life of the project.

Even day-to-day operations in various industries have recorded a change. CTI's efforts, along with CII and FICCI, to introduce eco-friendly measures and enhance productivity has managed to realize savings for automotive companies, five-star hotels, cement producers and textile mills.

The Orchid Hotel in Mumbai is a good example of U.S.-India cooperation. A stone's throw away from the domestic airport, the plush five-star is a unique *ecotel* that has benefited from the U.S.-India collaboration. Everything about this hotel is in keeping with its larger goal of conservation: a facade designed to cut radiation, reusable wall panels made from fertilizer waste, triple glazed windows that block the sun rays and provide a buffer against the roar of the constant plane traffic above, a rooftop pool that acts as an insulator, special aerators to manage water flow, crockery that

is recycled, even garbage that is treated through vermiculture—there's nothing in the hotel that is not eco-friendly. And after it turned into an *ecotel*, the Orchid is believed to be saving approximately Rs 1 crore (\$223,000) a year.

While much of the focus is on the present, possibilities for the future are also being emphasized. As U.S. Energy Secretary Spencer Abraham projects, "In the U.S., demand for oil may increase by nearly 50% by 2025. We can expect similar or higher increases all over the world, particularly among major developing countries like China and India." This, in turn, raises questions about pollution, health hazards, long-term environmental fallout and climate change. To attempt to address these issues, India and the U.S. have joined other nations under the International Partnership for the Hydrogen Economy. Of special concern are issues like fossil-fuel depletion and a roadmap for a hydrogen economy. In the U.S., the Government has pledged \$1.7 billion over the next five years to help launch hydrogen-powered cars and build infrastructure to support them. In India, the priority may be to use hydrogen as a fuel to generate electricity. USAID and the U.S. Department of Energy have expressed willingness to provide technical assistance to the Government of India to assist India in the development of a hydrogen roadmap. The roadmap would identify opportunities and barriers in production, transportation, storage and utilization of hydrogen fuel.

U.S.-India cooperation in the field of energy and climate change is a dynamic partnership that continues to thrive. Whether through electric cars, eco-friendly hotels or improvements in energy distribution, the U.S. and India are working together to lessen negative impact on the environment. The environment is a precious global resource, which both countries are working together to restore and preserve for future generations.



## ENVIRONMENT

# CONSERVATION THROUGH PARTNERSHIP

# U

S.-India cooperation on environment is an outstanding representation of how the bilateral relationship is being transformed. The changing role of the Department of State (DOS) and the United States Agency for International Development (USAID) over the past 50 years in addressing environmental issues and the emergence of new U.S. players in India, such as the United States Environmental Protection Agency (EPA), the Department of Energy (DOE), the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA), show the importance of the environment and the depth and breadth of the U.S.-India partnership to address environmental issues of common concern. India has witnessed more population growth in the past decade than ever before, and the U.S.—forging a partnership with Indian institutions and individuals—is helping India to address environmental outcomes of that growth. This chapter highlights just a few of the many important ways the U.S. Government is developing partnerships to achieve sustainable development in India.

Activities of the DOS and USAID represent not only the history, but are an example of continuing and growing U.S.-India cooperation on environmental issues. With its long experience working on India's developmental challenges, USAID's response to changing political and economic climates has been swift and specific. Over the years, USAID's environmental portfolio has focused primarily on the interface between energy and environment. The focus evolved over time from infrastructure development to science and technology promotion to

energy conservation and commercialization and greenhouse gas mitigation. USAID's promotion of clean energy technologies and energy efficiency helped manage emissions of CO<sub>2</sub> and other greenhouse gases while the economy has grown.

Controlling greenhouse gas emissions in India will have multiple benefits for the global environment as well as for human health in India. In addition, U.S. activities will help address global climate change issues, which in turn will have a very positive, though indirect, and long-term impact on forestry and biodiversity issues in India. If the climate continues to warm, this could have a detrimental impact on Indian coastal zones through inundation, increased flooding or salt water contamination. Agricultural yields could be depressed, resulting in more and more land being used to cultivate less and less food. In extreme cases, ecosystems could be altered significantly enough to further endanger threatened endemic species.

To help counter these threats and further advance bilateral cooperation a suite of new activities has been launched under the "U.S.-India Climate Change Partnership" led by the DOS and the Indian Ministry of Environment and Forests (MOEF). Through its role of helping to coordinate and fund a wide

U.S.-AEP



*The U.S. has funded water harvesting projects in rain deficient areas*



range of projects and providing programmatic support to other U.S. Government agencies, USAID has facilitated a stronger and more enduring partnership between India and the United States to address environmental issues. The DOS has been equally as active, addressing policy issues with the Government of India. A strong partnership has been forged with the U.S. Department of Energy working with clean coal technologies and in the new exciting field of hydrogen energy. This will help place India on the map where economic development, cutting-edge technology, and environmental conservation walk hand in hand. Another strong partnership has been created with the U.S. Environmental Protection Agency (EPA). The EPA in India, facilitated by the U.S.-Asia Environmental Partnership (U.S.-AEP), strategically supports the growing cooperation between the EPA and MOEF on critical environmental issues, such as urban air quality, water quality, environmental compliance and enforcement and the management of toxics. A more complete discussion of U.S. programs addressing climate change and clean energy technologies can be found in the "Energy" chapter.

President Bill Clinton's visit to India in March 2000 highlighted and contributed to the ongoing environmental transformation. Following this significant visit, India's Environment Minister T.R. Baalu and EPA Administrator Christine Todd Whitman signed a five-year bilateral Memorandum of Understanding (MoU) between India's MOEF and the U.S. EPA on January 16, 2002. The MoU kicked off several key initiatives in Indian cities, such as the air pollution management program in Pune, which is an effort to introduce science-based models to improve urban air quality management strategies in one of the most critically air-polluted cities in India.

People and partnerships help keep U.S.-India relations on the move. The range of operations at the people-to-people level is remarkable, embracing ambitious plans to modernize Calcutta's water supply, as well as modest programs to redesign the humble cycle rickshaw. A U.S.-AEP supported hydrogen technology expert, Krishna Sapru, visited India during her vacation to work on development of a hydrogen-scooter. She commented, "People listen. They are not cynical. Their needs are modest. They are receptive to change. It is a situation where, like in any good environmental partnership, science and humanity overlap."

### PUNE TAKES THE FIRST STEP AGAINST POLLUTION

The most congested parts of Pune are ideal locations for an experiment that could change the quality of life in hundreds of towns across India. As part of the Indian Government's MOU with the EPA, the Pune Municipal Corporation (PMC) and U.S.-AEP have conducted the first International Vehicular Emission Model (IVEM) study in India. The data will be used to devise a workable air quality management model for Pune and, ideally, extrapolate its results to support similar efforts in other cities. The study involved international and local partners in Pune that worked together to model the vehicle fleet on the roads of Pune. The University of California at Riverside, along with Global Sustainable System Research, designed the IVEM, an EPA publicly available computer model that estimates emissions from vehicles. To collect data on the Pune fleet, the University of California team involved many volunteers, PMC staff, local NGOs, Pune University, fuel and automotive companies, and interested citizens to characterize the traffic fleet and chart its patterns via Global



The U.S.-AEP has helped in conducting a vehicular pollution study in Pune

Positioning Systems (GPS). The information that was gathered in the study has been used to develop a model for Pune where vehicular or fuel data can be entered by policymakers and the impact on emissions can be determined in a scientific, yet cost effective, manner.

### INDIA'S FIRST EVER GREEN BUSINESS CENTRE

The Green Business Centre (GBC) in Hyderabad promises to be a brick-and-mortar symbol of U.S.-India partnership on the environment. The GBC, located in this high-tech city, has received the prestigious LEED's (Leadership in Energy and Environmental Design) Platinum Rating, the highest rating given by the U.S. Green Building Council, one of the world's foremost bodies supporting environment-friendly architecture. The GBC is unique in concept and design. It houses experts in energy efficiency, water management, recycling technologies and green building. Built using fly-ash bricks, GBC is an eco-friendly building that not only meets global standards in green design, but one that also belongs to its local landscape.

The stakeholders in GBC are the Confederation of Indian Industry (CII), the Andhra Pradesh government, USAID and the House of Godrej, which contributed Rs 22.65 crore (\$5 million) for its construction. CII takes this initiative seriously and plans to set up 10 more GBCs in India by 2005.



USAID has a stake in the GBC

Energy Conversion Devices Inc. in the U.S. and Bajaj Auto in India are working on a hydrogen-fueled scooter.

### UNIQUE FEATURES

#### THE GREEN BUSINESS CENTRE IS A BUILDING LIKE FEW OTHERS

- The GBC is a model green building, from construction outside to activity within.
- The GBC has experts in environment protection who consult with industry.
- GBC is 50-60% more energy efficient than other buildings, uses solar energy for 25% power generation .
- It has been constructed using bricks made of fly-ash, a waste material from nearby power plants.
- A "green roof" of grass and vegetation keeps the building cool.





Ajay Singh, of NYCT, at a Delhi Metro site where he is helping to make it a model for future transit systems



## FROM THE NEW YORK SUBWAY TO THE DELHI METRO

When U.S.-AEP approached Ajay Singh, the chief environmental and sustainability officer for New York City Transit (NYCT), to work with the Delhi Metro, it was the perfect choice. Singh joined NYCT in 1985 as an assistant mechanical engineer, part of a team that helped it obtain ISO 14001 certification. NYCT was the first transport system to receive the rating. Working together in 2002, NYCT and the Delhi Metro charted a road map for the Delhi Metro to attain ISO 14001. Achieving this standard is testimony to both the U.S.-India partnership and the Delhi Metro’s commitment to environmental stewardship. The Delhi Metro plans to adapt NYCT features such as offices that consume less power and paper, building stations that use solar panels, and recycling close to 85% of construction waste. Setting standards early on, Singh believes, gave the Delhi Metro an advantage and establishes it as a model network to be emulated by mass transit systems throughout the world.

## HYDROGEN—THE FUEL THAT COULD CHANGE LIVES

Scientists believe hydrogen could change the way the world works and goes to work. India’s engagement with hydrogen technologies is on the threshold of a critical breakthrough. A collaboration between Energy Conversion Devices (ECD) Inc. in the United States, experts in solid-state hydrogen storage technology, and the automobile manufacturer Bajaj Auto in India seeks to identify alternative fuel sources to run vehicles. The project, whose ultimate goal is to respond to consumer needs in India with an environmentally friendly power source, seeks to develop non-polluting, hydrogen-fueled three-wheelers. ECD has identified the hydrogen three-wheeler as a potential instrument for commercialization and India as a key market. ECD experts in hydrogen storage technology are collaborating with Indian scientists. The hydrogen three-wheeler has the potential to reinvent the way India looks at one of its most challenging environment problems. Using conventional fuel, two- and three-wheelers and power generators are a major source of pollution. Fueled by hydrogen using on-board metal hydride storage units, hydrogen three-wheelers could be agents of change and a transformational technology for the future.

Worldwide,  
only New York  
City Transit  
and Delhi  
Metro have  
won the ISO  
14001  
standard.

## WILDLIFE WITHOUT BORDERS

This we know: the Earth does not belong to man, man belongs to the Earth. To conservationists around the world, these lines constitute an article of faith. They reflect the assumption that Earth’s rich biodiversity is not a treasure that belongs to individual nations. Any attack on the world’s endangered species is an attack on nature itself. Its defense too, therefore, becomes a global responsibility.

The nature of the U.S.-India partnership in the field of wildlife conservation is a variation of this theme. Fittingly, the motto of the international outreach program of the U.S. Fish and Wildlife Service (USFWS), the chief driver of U.S.-India collaboration in wildlife conservation, is “Wildlife Without Borders.” India, home to 21,000 species of plants, 500 varieties of mammals, and 1,500 types of birds, is ranked sixth among global biodiversity centers. But the demands of modernization have placed a constant challenge on the country’s dazzling variety of species.



The southern arm of the Western Ghats (below) with its fragmented forest areas







Bear tracking in Panna Tiger Reserve in Madhya Pradesh

## LANDMARK TEST CASE

The creation of India's first wildlife forensic laboratory at the Wildlife Institute of India in Dehradun marked a major step in the long battle against poaching and animal smuggling. It was established with USFWS'



collaboration, after field visits by Indian scientists to facilities in the U.S. B.C. Choudhury, Nodal Officer, WII-USFWS Collaborative Project, who plans the development of regional labs, says, "We have to ensure that cases against animal smugglers are so fool-proof that convictions can take place."

The United States' Endangered Species Act of 1973 gave the USFWS the mandate to work toward the protection of endangered animals worldwide. Joining hands with the Indian Government and private organizations through the Science Section of the U.S. Embassy, USFWS focused on wildlife research and management, habitat protection and conservation. For funds, it tapped into a pool of U.S.-owned Indian rupees, which could not be converted into dollars and were to be used to support projects benefiting both India and the U.S. The Indian Government identified key institutions to act as collaborators, the main bodies being the privately-funded Bombay Natural History Society (BNHS) and the government-run Wildlife Institute of India (WII).

The partnership of USFWS with BNHS, the pre-eminent Indian center for ecological studies, was set up in 1983 and revolved around projects to monitor the movement and habitat of birds, ecological studies of the Keoladeo National Park, and the habitats of the Great Indian Bustard and the Siberian crane. The USFWS' interaction with WII concentrated on capacity building and training in modern research techniques.

India's first (and only) forensic wildlife laboratory at the WII was a by-product of this partnership, along with the Wildlife Health Cooperative, a network of experts on wildlife health care. Ongoing projects include research in the ecology of the sloth bear in the Panna Tiger Reserve and the impact of fragmentation on the biodiversity of the



U.S.-India cooperation could help maintain the elephant population in India

## MANY GOOD CAUSES THE USFWS AND ITS INDIAN PARTNERSHIPS CURRENTLY IN ACTION

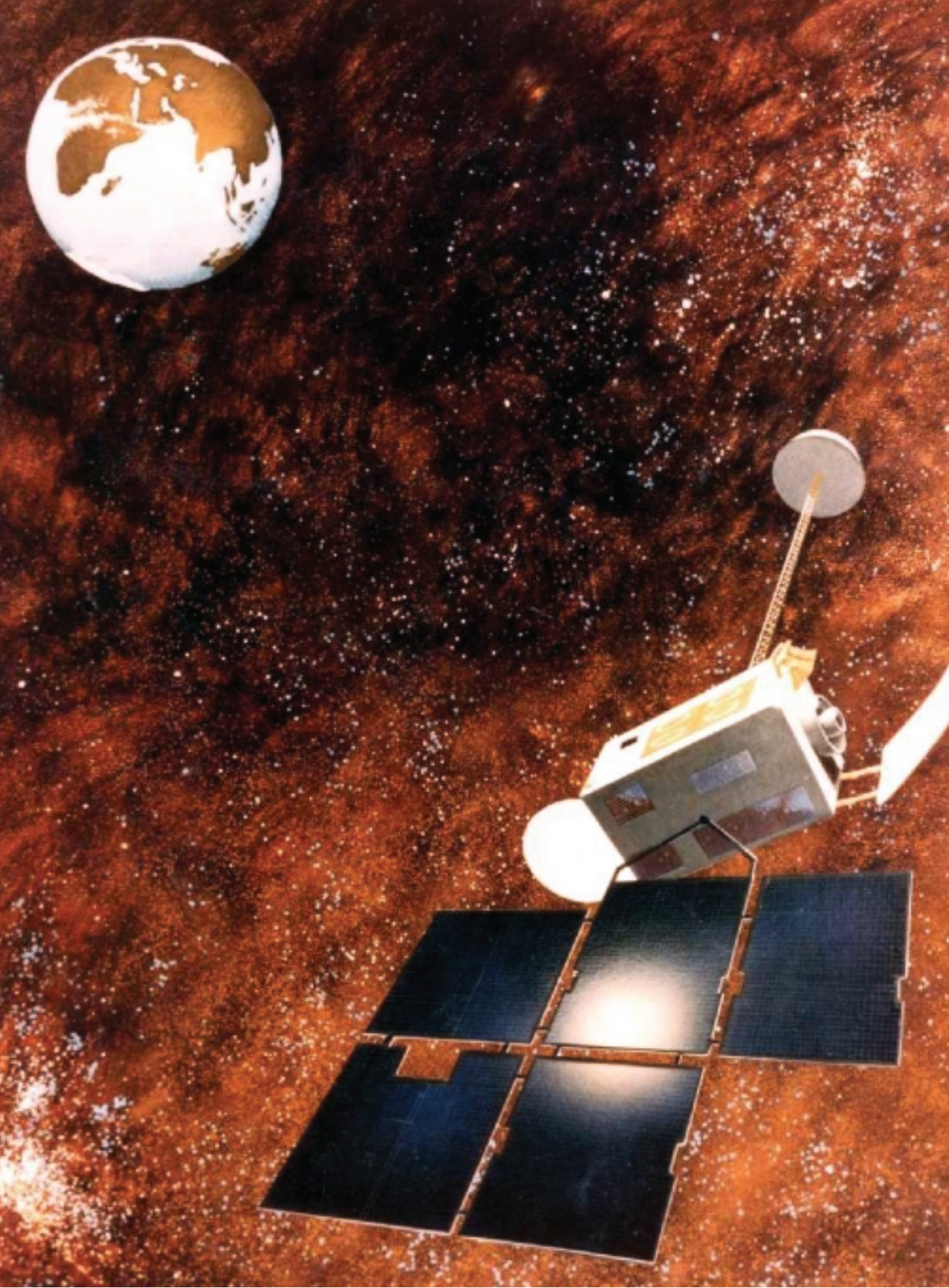
- Ecology of Shola and Alpine grasslands, with BNHS.
- Biodiversity conservation of freshwater wetlands, a three-year project with the Institute for Restoration of Natural Environment.
- Identification and acquisition of Elephant Migration Corridors as protected areas, with the Wildlife Trust of India
- Training of tiger conservationists, with WII.
- Monitoring nest sites of vultures in the Himalayan foothills, with BNHS.
- Survey and conservation of Hoolock Gibbon in the Northeast India, with WII.

Western Ghats. It is widely understood that the protection of endangered species, especially the flagship species in a region, automatically extends to the entire habitat of those species. For instance, preserving the habitat of rhinos in Kaziranga National Park in Assam ensures that animals like the swamp deer are preserved. Fred Bagley, a U.S. Fish and Wildlife biologist, says the Kaziranga project is a "model program" as far as providing security and sustaining species is concerned.

U.S.-India links in the field of wildlife conservation are at a crossroads today with the exhaustion of the rupee funds. The concentration of dollar-funding will veer toward species like tiger, rhino and elephant, but finding ways to continue its developmental efforts at the grassroots level will be the key challenge for the USFWS and Indian conservationists. The Indo-U.S. Science Forum, with an endowment of Rs 4.52 crore (\$1 million), could act as one avenue. But the strongest indication of a new direction comes from the proposal to create a Bi-national Science Foundation, to be funded with a Rs 226.25 crore (\$50 million) initial grant from India and the U.S. Bagley echoes the thoughts of many stakeholders in the U.S.-India conservation partnership when he says, "There is a lot of concern in the U.S. for conservation in India. We don't want our activities to be dropped. We want them to be sustained."

In all its activities, the Science Section of the U.S. Embassy has played a critical role in promoting environment-friendly policies in India, matching Indian and U.S. technical agencies and creating a climate where environment and conservation cooperation can thrive.





*INSAT-1D, the fourth satellite in the Indian National Satellite system, was designed, built and delivered by Ford Aerospace for India's Department of Space*

## SCIENCE A BRAVE NEW WORLD

It can be said that the field of science is developing into a North Star for the U.S.-India bilateral relationship. Based on a shared belief in the power of science to enhance relations and improve the quality of life for many of their citizens, the U.S.-India Bilateral Science and Technology (S&T) cooperation is moving the two countries toward expanded engagement in energy, space and trade. In January 2004, President Bush stated that "The vision of U.S.-India strategic partnership that Prime Minister Vajpayee and I share is now becoming a reality." He also said that, "the expanded cooperation launched today is an important milestone in transforming the relationship between the United States and India. That relationship is based increasingly on common values and common interests."

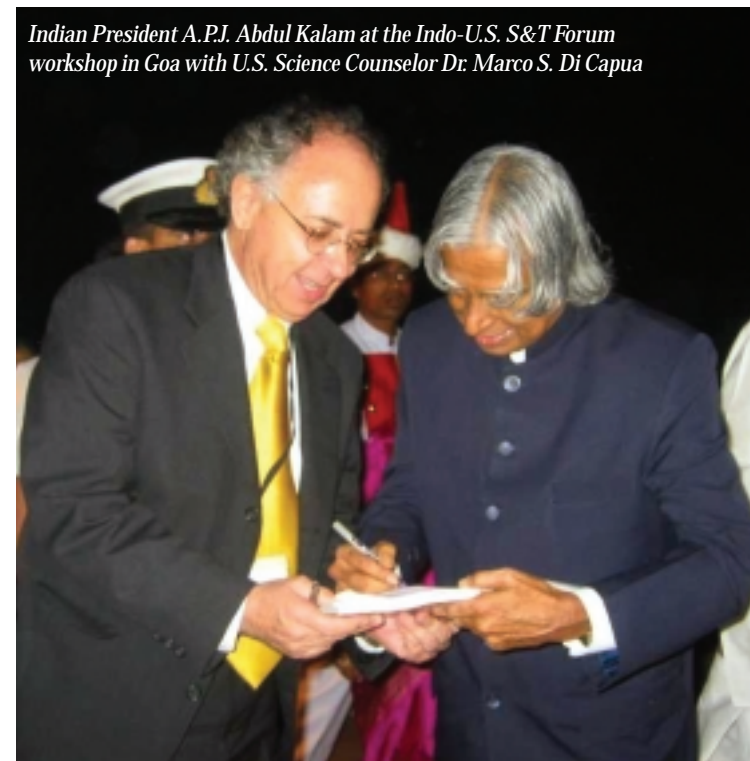
The U.S.-India partnership in science extends back nearly 50 years, and while the bilateral relationship in science has had both high and low points, collaborative initiatives are once again gaining momentum. The U.S. and India presently collaborate in areas as diverse as genomics, agricultural and medical biotechnology, nanoscale science and engineering, weather forecasting, basic research, and information technology. The most critical and enduring result of this cooperation is the development of mutually beneficial science. Through an exchange of knowledge, the two countries share a platform, support innovation and facilitate the creation of cutting-edge technologies.

A recent high point in the long history of U.S.-India scientific interactions was the establishment of the Indo-U.S. Science and Technology Forum in New Delhi, which occurred during President



Clinton's visit to India in 2000. The Forum is funded by approximately Rs. 31.95 crore (\$7.1 million) which was presented by then U.S. Ambassador Richard E. Celeste. The operational budget of the Forum includes annual interest earnings of the endowment, matched each year by the Government of India, and earnings and contributions received from non-governmental sources. Today, the Forum is a catalyst for the productive exchange of scientific ideas and for the exchange of scientists in collaborative research projects, capacity building and technology transfer.

The heartbeat of the U.S.-India relationship in science has always been, and continues to be, the ebb and flow of ideas and people that transcend any temporary interval of inactivity. In addition to cooperation on the governmental level, scientific collaboration and exchanges between individuals, scientists, and private-sector businesses are powerful drivers of the bilateral relationship. And it is in this realm of people-to-people contacts where students and post-doctoral fellows are leading the way.



U.S. EMBASSY, NEW DELHI

stituting palladium for platinum in catalytic converters. Gandhi also advises the Ford Company in India to develop emission control systems for local and export markets.

An example of U.S.-India ties in aviation is Ajay Kumar of Meerut, an Indian origin scientist and member of the NASA Langley Research Center team, who worked on the successful hypersonic flight of an integrated scramjet propelled vehicle. Ajay Kumar went to the U.S. in 1975 as a National Research Council Associate at NASA and stayed on to participate in the XL-43A design that cruises at Mach-7 speed of about 8,260 kilometers per hour.

Indian Americans have played a key role in pushing U.S.-India ties in the scientific field. The unveiling of the draft human genome sequence in 2001 by the National Institutes of Health and Celera Genomics, a private biotechnology company, showcased team efforts which included several scientists of Indian origin, like G. Subramaniam of Celera and R. Koul of the University of Washington. Another example of an Indian American leader in the field of science is Haren Gandhi, a Ford Motor Corporation technical fellow, who received the National Medal of Technology in 2003 for substituting palladium for platinum in catalytic converters. Gandhi also advises the Ford Company in India to develop emission control systems for local and export markets.



INDO - U.S. S & T FORUM  
**THE SCIENCE OF COOPERATION**

**THE FORUM PROMOTES U.S.-INDIA INTERACTION IN SCIENCE & TECHNOLOGY AT VARIOUS LEVELS**

The Indo-U.S. Science and Technology Forum, otherwise known as the "Forum," is housed in a shady oasis at 12 Hailey Road, not far from the historic step well of Uggar Sain's Baoli. With enormous pride, the Forum shares this campus with the United States Education Foundation in India (USEFI) and while USEFI attends to education and academic pursuits in the social sciences, the Forum facilitates and promotes interaction between the U.S. and India in science and technology on government, academia and industry levels. The Forum focuses on issues of common concern and activities of mutual benefit, while exploring trends in science and technology.

One of the Forum's major activities is the support of joint workshops in both countries regarding the conception phase of

*Indo-U.S. S&T Forum has offices in USEFI's historic Fulbright House in Delhi*

new areas of science and technology. Since its inception to April 2004, 35 such symposia have been held. Some of the interest areas include Indian Ocean ARGO floats, Nanotechnology, Brain Research, Weather and Climate Modeling, Cancer Networking, Arsenic Contamination and Genotoxicity, Eco-Informatics, Digital Library, Traditional Medicine, Green Chemistry, S&T to counter Terrorism, Biotechnology, Renewable Energy Sources and so on. Other major activities include exchange visits of scientists, in order to promote joint research and development projects, capacity building, and database creation on various aspects of S&T.

The Forum is now in the process of enhancing industry participation, paving the way for an active academia-public-private partnership aimed at generating innovation. The Forum hopes to grow through common interests sustainable through time, and develop scientific entrepreneurship and leadership. Ideas conceived today could mature into the dream of a jointly endowed U.S.-India Binational Science and Technology Foundation to cater to the development of new ideas in the S&T communities of both countries.





Thanks to a U.S. satellite, 2,330 remote villages in India were introduced to television

### SPACE COOPERATION

The U.S. and India enjoy an old and important partnership in space cooperation. In 1962, prior to being involved in the Equatorial Rocket Launching Station at Thumba, A.P.J. Abdul Kalam, who is now President Kalam, undertook a six-month NASA training program on sounding rocket launch techniques. On his return, President Kalam participated in India's first rocket launch in November of 1963, with a NASA-made Nike-Apache rocket. This was the first of four NASA rockets launched from Thumba. Following this, with Vikram Sarabhai at the helm of the Indian Space Program, India's dream of building an Indian Satellite Launch Vehicle was begun.

In terms of space-based communications, the Satellite Instructional Television Experiment (SITE), signed with NASA in September of 1969, was the world's first large-scale TV broadcasting experiment. The SITE project, with the reposition and use for one year of NASA's ATS-6 satellite, spearheaded a revolution in broadcasting. At the time, about 2,400 villages spread across India could access TV broadcasts either through direct reception or by All India Radio-TV transmitters linked

via an earth station facility.

On the initiative of Sarabhai, a joint study was conducted in the 1970s with the Massachusetts Institute of Technology for the design of the Indian National Satellite System (INSAT). This laid the groundwork for future INSATs. The INSAT system serves the telecommunications sector, and provides very small aperture terminal (VSAT) and mobile satellite services. Today, INSAT has facilitated television broadcasting through more than 1,000 terrestrial transmitters, providing TV access for at least 850 million people in India. INSAT has also helped in improving meteorological services, such as cyclone warning. Of the INSAT series, the INSAT-1 satellites were made in the U.S. and the INSAT-2 series were designed and built in India.

And it is important to note that U.S.-India cooperation in space sciences extends to the private sector as well, as the Indian space fraternity has established commercial space links with NASA and U.S. aerospace companies. This led to the building of complex communication satellites in the early days of the evolution of the Indian space effort. The old bond is being renewed with the forthcoming Joint Space Conference on Space Science, Applications, and Commerce to be held in Bangalore in the summer of 2004. The co-organizers are the Astronautical Society of India and the American Institute of Aeronautics and Astronautics. In January 2004, President Bush spoke of the next steps in implementing a shared vision for science, including "ways to enhance cooperation in peaceful uses of space technology" and "steps to create the appropriate environment for successful high technology commerce." Thus, the space conference will be another important step in setting the pace for expanded U.S.-India cooperation in science.

### EARTH AND ATMOSPHERIC SCIENCES COOPERATION

India is vulnerable to disasters such as earthquakes, landslides, floods, drought, cyclones and industrial accidents. In the period from 1993 to 2002, approximately 78,000 people were killed, and nearly 800 million were affected by natural disasters. This vulnerability has only increased due to population growth, poor natural resource management and the development of human settlements in hazard-prone areas. In an effort to predict and prevent the catastrophe caused by these natural events, the sharing of information and technology for disaster management systems, especially in the areas of climate forecasting systems, earthquake safety and disaster initiatives, has become a crucial element of the bilateral partnership.

In the mid-1980s Indian scientists made extensive use of NASA's Landsat and the National Oceanic and Atmospheric Administration (NOAA) satellite data for



Scientists at the ISRO Satellite Assembly facility in Bangalore use U.S.-made equipment to test circuits for EDUSAT



natural resources survey and management. India also used data from NOAA series satellites for drought monitoring and for the creation of a Vegetation Index Map. Under a mid-1990's commercial agreement with a U.S. company, data from the Indian Remote Sensing Satellite (IRS) was used for the reception and marketing of IRS data worldwide. More recently, ANTRIX Corporation Ltd., the commercial arm of the Indian Space Research Organization, has established long-term contracts with U.S. companies.

A solar telescope, installed in 1995 at the Udaipur Solar Observatory through an international program called the Global Oscillations Network Group (GONG), was sponsored by the National Science Foundation and coordinated by the National Solar Observatory, USA. This telescope yields digital solar velocity images once every minute and full disc magnetograms every hour, as a probe to the solar internal surface.

Today, an MoU exists for scientific cooperation in earth and atmospheric sciences. The MoU was first signed in December 1997 and was extended in 2002 for another five years. The MoU has been signed between the Department of Space and the Department of Science and Technology on the Indian side and with NASA and NOAA on the U.S. side.

## NUCLEAR SCIENCE COOPERATION

In the 1960s, Homi Jehangir Babha believed that, in order to develop India's nuclear program, the country would need to gain experience in operating nuclear plants. Then U.S. Ambassador to India, J.K. Galbraith, convinced the Indian Atomic Energy Commission to allow USAID to bear some of the cost for a boiling water reactor nuclear power plant at Tarapur, built by General Electric and Bechtel Engineering. The Tarapur reactors became the first two reactors in Asia to deliver electric power. The U.S. and India signed a nuclear cooperation agreement in 1963, which lapsed 30 years later in 1993.



*NRC Chairman Meserve (left) with Indian officials at the Bhabha Atomic Research Centre*

DEPARTMENT OF ATOMIC ENERGY, GOVT OF INDIA

The scope of civilian nuclear cooperation in the area of nuclear safety is a consequence of the discussions between President Bush and Prime Minister Vajpayee in November 2001. The U.S. Nuclear Regulatory Commission (USNRC) and the Indian Atomic Energy Regulatory Board (AERB) are involved in the dialogue. Richard Meserve, Chairman of NRC, visited India in early 2003. This was the first time in five years that a senior U.S. Government official had come to India to discuss civil nuclear cooperation. Meserve visited the Tarapur Atomic Power Station, which still bears the USAID logos, and the Bhabha Atomic Research Center (BARC), and met with officials of the Department of

Atomic Energy, the AERB and the Nuclear Power Corporation of India Limited (NPCIL).

This exchange continued when, during the 2nd NRC-AERB Nuclear Safety Projects Meeting in September 2003, an Indian delegation visited the National Institute of Standards and Technology, the University of Maryland, and the Surry Nuclear Power Plant. The most recent meeting was held in early 2004, in Mumbai, and helped to further strengthen the dialogue between the U.S. and the Government of India's independent nuclear regulatory agencies on nuclear safety issues, such as license renewal, aging and fire safety. This was followed by an NRC technical team visit to the Madras Atomic Power Station (MAPS) near Chennai. The team received an overview of how the NPCIL has addressed fire protection and seismic concerns in MAPS.

## LIFE SCIENCES COOPERATION

The first U.S. patent for a living organism was given to Ananda Mohan Chakravarty, a scientist of Indian origin. The patent dealt with genetically modified bacteria and was granted on grounds of inventiveness and novelty.

The Department of Science and Technology-U.S. National Science Foundation (DST-NSF) Science and Technology Cooperation Program has several ongoing projects, including life sciences. Life science projects cover the study of areas such as fungi, bacterial haemoglobin, gene products, ligand interactions with DNA, microbe-mineral interactions useful in environmental control, fauna of

MAHYCO MONSANTO BIOTECH INDIA LIMITED



*A MAHYCO extension agent describes Monsanto Bt GM cotton crop managing strategies to farmers in Andhra Pradesh*



KALPANA CHAWLA

## AMONG THE STARS

**A SMALL-TOWN INDIAN GIRL BECAME THE FIRST INDIAN AMERICAN TO GO INTO SPACE. KALPANA CHAWLA HAS BECOME AN INSPIRING SYMBOL OF INDO-AMERICAN SCIENCE LINKS.**

The word "Kalpana" means dream or imagination in Hindi. It is a fitting name for an ordinary young woman from small-town India who dared to dream about the seemingly impossible, and had the courage and imagination to follow those dreams. Those dreams led her to the U.S. Her short, eventful life as the first Indian-born NASA astronaut inspired millions in both her native and adopted homeland to literally reach for the stars.

Born in 1961, the youngest of four children in a traditional middle class family in Karnal, Haryana, she had every reason to lead a typical middle class Indian life. She chose not to. In an intensely male-dominated society, she opted to study aeronautical engineering then defied family pressure and went to the U.S. to pursue her ambition. Her thesis advisor at the University of Texas, Arlington recalls that, "she just refused to take no for an answer."

This dogged determination, combined with a passion for her

work, took her much further than a Masters and Doctorate in aeronautical engineering. It led her to a series of firsts: the first Indian American and the first Indian woman to fly in space. But while her ambition was single minded, her mind was far from uni-dimensional. She was a talented Bharatanatyam dancer who enjoyed flying, hiking, backpacking, and reading. Her choice of music on her last flight aboard the space shuttle Columbia reflected the ease with which she embraced and absorbed the best of east and west, Thelonus Monk and Steve Vai competed for space with Ravi Shankar, Hari Prasad Chaurasia and Nusrat Fateh Ali Khan.

In 1994 NASA selected Kalpana Chawla for a rigorous, one-year training program to serve as a mission specialist on board shuttle missions, one of the most coveted positions for anyone harboring plans of being an astronaut. A successful 16-day space mission in 1997 made her a natural choice for the ill-fated trip on the space shuttle Columbia in February 2003. "I'm a citizen of the milky way," Kalpana Chawla once said. Now she is at home there, with the stars.

In February 2003, Indian Prime Minister Vajpayee, on behalf of the Indian Government, renamed the METSAT satellite as the Kalpana satellite in recognition and honor of Kalpana's contributions to space. The Kalpana series comprise India's first exclusive meteorological satellites.



*Kalpana Chawla is a role model for many budding astronauts*

Kutch, the origin of whales, salinity stress in rice and the study of transgenic plants.

Since its inception, the Indo-U.S. S&T Forum has supported workshops in life sciences and health. Brain research, cancer networking, biodiversity evaluation and conservation, arsenic contamination and genotoxicity, agricultural biotechnology, eco-informatics, functional genomics, traditional medicine, molecular toxicology and health, green chemistry and infectious disease R&D are just some of the areas covered.

### NANO TECHNOLOGY AND MATERIALS SCIENCE

There is great potential for future cooperation between the U.S. and India in the area of nanotechnology. By manipulating atoms and molecules as building blocks, nanotechnology creates surfaces, devices and even systems with desired functional properties in scales a thousand times smaller than 1/40 of the diameter of the human hair. The U.S. has made big strides, both in research and on the business front, in the area of nanotechnology and has several nanotechnology companies in operation. However, in India, this field is still at a relatively early stage of development and few commercial enterprises have been established. Important areas of nanoscience that have the potential for increased collaborative initiatives are nanostructures and ensembles, nanoscale assemblies, nanoscale device development, nanomanufacturing, integration of nanoscience and

biology, nanoelectronics and nanotechnology in the domain of earth and planetary sciences. In order to help further development in many of these areas, the Department of Science and Technology of the Government of India will invest Rs. 90 crore (\$20 million) over the next five years for the Nanomaterials Science and Technology Initiative.

The Indo-U.S. S&T Forum sponsors and facilitates many bilateral exchanges in the nanoscience area. In 2001, a nanotechnology workshop was held in Santa Barbara. At Thanjavur, two workshops have been held, one in Nanocomputing in 2001 and the other in Nanotechnology and Health Care in 2003. Two additional conferences in nanotechnology were held in late 2003 and early 2004 in Chandigarh and Bhubaneswar.

Nanotechnology has enormous market potential, particularly due to the increased need for portable systems for the agricultural and medical sectors and energy generation, storage and distribution initiatives. These joint scientific U.S.-India exchanges provide a platform for opportunities and developments in this important new area of science.

Space and civilian nuclear cooperation will leap forward with the implementation of the Next Steps in Strategic Partnership (NSSP), announced in January, 2004. The agreement provides for expanded cooperation in civilian nuclear energy, civilian space cooperation and high technology trade. And expectations in India and the U.S. are high, in the hopes that the implementation of the NSSP will bring back the glory days of pioneering space and nuclear cooperation.





YRG CARE

*Chennai-based Suniti Solomon discovered the first HIV case in India and has received funding through USAID's APAC project*

## HEALTH SUPPORT SYSTEM

**D**iseases know no frontiers. It's a fact both the United States and India are conscious of. For more than 35 years, the two countries have been partners in biomedical research and combating diseases, ranging from HIV to polio. The United States can boast a formidable arsenal in this war—U.S. Department of Health and Human Services' institutes like the National Institutes of Health (NIH), the Centers for Disease Control and Prevention (CDC) and USAID are indisputable leaders in the field. Nearly Rs 920 crore (\$200 million) been invested by the Department of Health and Human Services on public health-related projects in India. Now the interaction is continuing through an increasing number of NIH research grants, CDC technical assistance, and bilateral programs in areas as diverse as HIV/AIDS, tuberculosis, polio management and health infrastructure development. These programs have not only saved millions of Indian lives, but have strengthened the bonds between the people of two countries. The National Institutes of Health currently support nearly 80 projects in India. At any given time, 150 Indian scientists are undergoing postdoctoral research training on the NIH campus.

The National Institutes of Health maintain collaborative programs on HIV/AIDS and Sexually Transmitted Diseases Prevention, Maternal and Child Health and Human Development Research Program, Brain Research Program, U.S. Department of Education Support, Disability Technology and Research Program, Contraceptive and Reproductive Health Research Program, and Vaccine Action Program. To build capacity in the field of disease surveillance and address issues of



## AIDS PREVENTION BATTLING A SCOURGE

### APAC HELPS SPREAD HIV/AIDS AWARENESS

Palani, a barber at Krishna Hair Dressers in Mahabalipuram, a small town in Tamil Nadu, is an unlikely social worker. Yet he plays a crucial role in spreading awareness about HIV/AIDS. He has been trained to talk to his customers about how to prevent the disease, provide leaflets, and direct customers to buy condoms at the drugstore next door. It is all part of the AIDS Prevention and Control Project (APAC), a highly successful program in Tamil Nadu funded by the United States Agency for International Development (USAID), along with the National AIDS Control Organization (NACO) and the State AIDS Control Society, to rein in the disease through prevention.

A number of factors are key to controlling HIV, including behavior modification, availability of safe blood supply and awareness of one's disease status. According to NACO, only 10% of HIV positive people in India are aware they have the infection. This is due to low awareness among people and because HIV testing is not easy to access. There are also issues of confidentiality and the attitude of service providers.

Thanks to other USAID funding, the Saadhan Clinic in Chennai can test and counsel patients at the subsidized rate of Rs 25. In the retail market, the test kits would cost 10 times as much. Steps like these have already made a difference. As more agencies step in, Tamil Nadu may no longer be in the red zone on India's HIV map.

emerging and re-emerging infectious diseases, CDC maintains programs in Emerging and Re-emerging Diseases Surveillance and Environment and Occupational Health Research.

Department of Health and Human Services' (HHS) collaboration in India, says Dr. Altaf A. Lal, Health Attaché and HHS Regional Representative for South Asia, is aimed at jointly working for the development of knowledge, technology, tools of disease control and prevention (such as vaccines, drugs, and diagnostics), and the elimination of infectious diseases. "The benefits from these collaborations flow to the Indian and American people, as well as to the global community and through goodwill, they also add momentum to the growing U.S.-India relationship," says Dr. Lal.

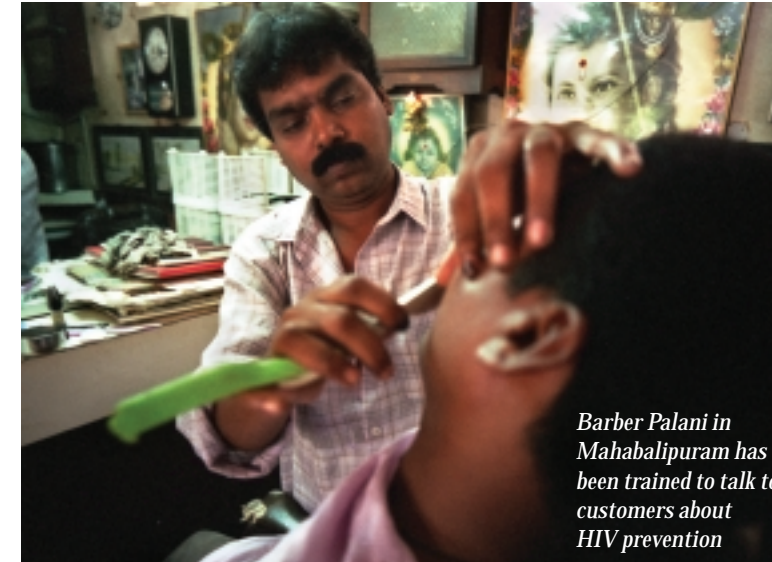
The bilateral partnership extends to health policy issues too. The Indo-U.S. Biomedical Research Policy Forum was established in 2000 to provide a platform for debates and discussions. Some of the issues in focus include intellectual property rights, public-private partnerships in health, sharing research tools, cell line and data, protection of human and animal subjects in research, and streamlining procedures for clearing joint research proposals. There are numerous other areas where U.S.-India partnerships have made a discernible difference in public health.

### HIV/AIDS

The first case of HIV infection in India was officially reported in 1986. It then seemed a mere blip on an already overloaded health system. Today, with 4.5 million infected—almost 1% of adults—some fear the country could be sitting on a large rumbling volcano. The U.S. Government spotted the danger early, and responded in 1992 by developing the 10-year AIDS Prevention and Control (APAC) activity in Tamil Nadu, one of India's six high prevalence states. Its efforts focused on groups who engage in "high-risk" behavior, such as sex workers and truck drivers. The program sought to control the spread of the virus by engaging in strategies for changing their sexual behavior. Since the presence of sexually transmitted diseases increases the chances of being infected with HIV several-fold, they also focused on increasing access to high quality condoms and the treatment of sexually transmitted diseases. The project is in its expansion phase and has increased its outreach and added care and support to its fold. Working with various local NGOs, APAC has made a dramatic difference in ensuring that high-risk

groups adopt and sustain safe behavior and that the disease does not spiral out of control, although the danger still remains. USAID expanded its program to include Maharashtra, which accounts for 25% of reported AIDS cases in India. Avert, a seven-year, Rs 190 crore (\$41.5 million) program focuses on prevention of the infection among high-risk groups, such as sex workers, in many high prevalence districts of Maharashtra, besides addressing care and support issues. Similarly, Operation Lighthouse, another USAID funded program, focuses on HIV/AIDS prevention in the 12 major port communities across India. Port communities are crucial as many "high risk" groups converge there, yet they have not received due attention in the war against the virus.

BARRY FITZGERALD



*Barber Palani in Mahabalipuram has been trained to talk to customers about HIV prevention*

The most heart-breaking rendition of the tragedy of HIV/AIDS is seen in its innocent victims, children. USAID's Implementation of AIDS Prevention and Care (IMPACT) project, implemented by Family Health International (FHI) in Tamil Nadu, Andhra Pradesh, Delhi and Maharashtra, provides support for children infected/affected by AIDS, in addition to prevention and care demonstration projects.

A combination of Indian expertise in Information Technology and U.S. management skills are helping to fight the disease.

The Centers for Disease Control and Prevention (CDC) is strongly committed to assisting the Government of India with its HIV epidemic through its Global AIDS Program (GAP). In 2001, the U.S. Congress provided additional funding of Rs 13.8 crore (\$3 million) a year to CDC for HIV/AIDS projects in India. CDC and the Government of Tamil Nadu are working with Satyam Computers to develop a system that would provide information to improve patient care. With more than 400,000 records already entered, Indian health care providers and U.S. epidemiologists are now working together to develop ways to use that information so that it provides maximum benefit to patients. At the same time, CDC is assisting in renovating laboratories to improve clinical diagnoses, as well as assisting in developing training curriculum for health care providers. CDC is also supporting NGOs and people living with HIV/AIDS to develop programs to improve care and support in the home and community.

The National Institutes of Health is supporting cutting-edge research on HIV/AIDS in India, with focus on vaccine development and testing, behavioral research, mother to child transmission, and genetics and pathogenesis. NIH is also providing funding Rs 13.5 crore (about \$3 million) to the



National Institute for Research in Reproductive Health, Mumbai, for upgrading its non-human primate facility. The total budget of Indo-U.S. collaborative grants for this project is around Rs 45 crore (\$10 million) a year.

The U.S.-India partnership against HIV/AIDS stretches well beyond the governmental arena. HIV/AIDS in India has been an issue of such concern that the Bill and Melinda Gates Foundation agreed to invest Rs 920 crore (\$200 million) over five years for HIV/AIDS in India—the largest commitment to one country by the world's richest man, and the largest prevention program ever undertaken in the world. "The situation is urgent," says Ashok Alexander, country head of the Gates Foundation. "India is at the inflection point of the S curve that every epidemic shows. HIV is already a generalized epidemic in 6 states, and shows signs of a concentrated epidemic in others." Alexander, a former management consultant, used his skills to identify key areas that needed attention and formulated plans accordingly. One ambitious plan, in partnership with local NGOs, is to set up franchised booths along the national highway to provide information, socially marketed condoms, STI services and counseling. Another NGO supported by U.S. grants, "Positive People's Network," forms a network of HIV people so that, far from being on the fringes of society, theirs will be a collective voice that will be heard.

As HIV infection spreads, so does the rate of tuberculosis. India today houses a third of the world's TB patients. With financial help from USAID, medical epidemiologists from CDC, via the World Health Organization (WHO), are active in assisting the Indian Government in implementing the Directly Observed Treatment Strategy (DOTS) program. The Tuberculosis Research Center at Chennai has been identified as an international center for excellence in research for infectious diseases by NIH.

## POLIO

Polio is a viral disease that devastates families by causing death or permanent paralysis in children and young adults. Because it only survives in human beings and an effective vaccine is available, the scourge of polio can be eliminated from the world forever, just as was done for smallpox. As a result of a massive global effort, by 2003 polio virus transmission had been eliminated from all but six countries in the world. These six include India, which has traditionally been the source of the largest number of cases. U.S. Secretary of Health and Human Services Tommy Thompson, during his 2004 visit to New Delhi, emphasized that the elimination of the disease in India is key to the success of the global program.

The Indian Government's battle to eradicate polio began in 1995 and the number of cases occurring each year dropped continuously through 2000. However, in 2002 a major outbreak occurred. This was due to a combination of a decreased number of nationwide immunization drives, reduced quality of the drives and suspicion of the vaccine among minority group members. During late 2002-03, the Indian Government and partners (including USAID and CDC) stepped up their efforts to improve immunization for polio. As a result, during 2003 India reported the lowest number of polio cases ever (225) and is on the verge of succeeding in the eradication drive.

From 2001 to 2004, CDC and USAID support for polio eradication in India exceeded Rs 265 crore

(\$59 million) and four senior CDC staff assigned to WHO are among the key technical and managerial advisors in the polio eradication activities in India. In 2003, following the epidemic, eight CDC National Immunization Program staff were sent to provide temporary technical and management assistance to the India WHO field operations. Working with Indian medical officers, they assisted in bringing down the number of cases to one of the lowest ever recorded. WHO now feels polio can be eradicated in India by 2004. And when it is accomplished, the CDC and USAID will have played a major role in this humanitarian victory.

NARENDRA BISHT/INDIA TODAY



USAID and HHS have helped in the war against polio in India

## PUBLIC HEALTH AND DISEASE OUTBREAK

When SARS broke out in South East Asia, India was prepared. But India has had its own set of disease outbreaks. In 1994, plague broke out in Surat. Samples were sent to CDC in Atlanta for identification. In 2001, a mysterious fever of unknown origin broke out in Siliguri, West Bengal. Initially, Japanese Encephalitis was thought to be responsible. Samples, once again, were sent to CDC for identification. The causative agent turned out to be a virus similar to the Hendra virus of Australia and the Nipah virus of Malaysia, both of which are domestic animal-borne infections.

But the U.S.-India partnership in public health extends well beyond merely identifying disease-causing agents. It also aims to find

## REPRODUCTIVE HEALTH

### A SAFE DELIVERY

#### AN INNOVATIVE PROGRAM USES TRADITIONAL MEDIA

Folk shows with a message. Private-Public partnerships via district action plans. Social marketing, staff training, increased access to reproductive health camps. With imaginative strategies, the Rs1,462 crore (\$325 million) Innovations in Family Planning Services (IFPS) Project, supported by the U.S. Agency for International Development (USAID), has made a discernible difference to the lives of women in remote Uttar Pradesh.

U.S. Government aid to India for family planning and reproductive health stretches back to more than a decade. IFPS, begun in 1992, focuses on the state of Uttar Pradesh. Over 8,500 folk media performances on family welfare themes, backed by better access to care, have had an impact on the psyche of rural women in a way that official literature could never do. And it shows, in hard numbers.

Consequently, modern contraception use has increased nearly twice as fast. Due to social marketing activities, U.P. is the only state in India in which sales of oral contraceptive pills and condoms in rural areas have increased over the past two years. 45% of U.P. villages have an outlet selling these contraceptives. In pregnant women, tetanus toxoid immunization levels have increased from 33% in 1999 to over 62% in 2003. The program ensures that the next generation of Indians has a fighting chance of a healthy life.



## ROTAVIRUS VACCINE SAVING BABIES

### U.S.-INDIA COLLABORATION HELPS DEVELOP DRUG

Every day in India, one out of every 200 babies born will die of a perfectly preventable cause—diarrhoea. This diarrhoea is caused by a virus called rotavirus, which kills more than 100,000 children every year. But two independent research teams, funded by the Indo-U.S. Vaccine Action Program (VAP), showed that in newborn nurseries, infants infected with parts of the rotavirus strains did not develop diarrhoea, but mounted a brisk immune response which protected them against future infections. In other words, a vaccine could save hundreds of new born lives. So the The India Rotavirus Vaccine Development Project was born under VAP, to produce and test a live, oral rotavirus vaccine to prevent severe diarrhoea in children.

Two candidate vaccines are now at the clinical trials stage, and both will be tested by investigators at AIIMS in India, Stanford University and CDC for the Phase I, II and III clinical trials. This collaboration will provide capacity building for a vaccine testing and evaluation center in India. Bharat Biotech International Ltd, a biotechnology company based in Andhra Pradesh, will develop, manufacture and evaluate the vaccines in India. It's a prime example of how governments (U.S. and India), academia (CDC, Stanford University, AIIMS, IISc), funding agencies (PATH, Bill and Melinda Gates Foundation) and the private sector (BBIL) can synergize their resources for the benefit of both nations.

*USAID has helped  
reduce health hazards  
caused by vehicular  
pollution in India*



SHAILESH RAVAL/INDIA TODAY

solutions, and build effective infrastructures to meet any eventuality.

In a country where safe drinking water is hard to find, CDC and USAID have invested heavily in safe water and sanitation projects. Over Rs 18.4 crore (\$4 million) is spent annually in India on innovative projects for effective drinking water. Rs 1.84 crore (\$400,000) was invested in a project in the township of Valasaravakkam to lay pipes from a safe drinking water source to the town. Projects to find cheap and effective ways to collect and distribute safe water are on in Delhi and Uttaranchal. Funded by USAID, the NGO Population Services International (PSI) markets Saf Wat Jar, a vessel that purifies water.

Training people in public health forms the core of the U.S.-India alliance. The belief is that this is the only way to ensure the spread of health awareness. With technical support from HHS, several district schools of Public Health will be set up across India. Laboratory infrastructure will be developed or upgraded as well, so that in case of any disease outbreak, diagnosis and identification of the cause can be done immediately and suitable measures can be taken to bring the outbreak under control.

## VACCINES

As the Government of India launches aggressive campaigns for the prevention of the myriad diseases that threaten this country, the United States has backed them every step of the way. India's Ministry of Health and Family Welfare, as well as the Department of Biotechnology, encourages research of affordable, effective vaccines. There have been numerous successes in this area in the recent past. And many of them have been possible because of U.S. funding or expertise.

One of the most important vaccine projects under way in India is the HIV vaccine. A joint project between the New York-based NGO International AIDS Vaccine Initiative (IAVI), Indian National AIDS Control Organization (NACO) and the Indian Council for Medical Research, it aims to develop a vaccine that will be effective against the HIV 1c strain that is dominant in India. The vector *Vaccinia ankara* is being used as the vector. In August 2003, Mark Chataway, IAVI's Indian team leader, announced that clinical trials for the vaccine would begin in 2004.

While HIV remains a cause for grave concern to many Indians, malaria poses a more immediate danger. It is caused by the parasite *Plasmodium falciparum* and *Plasmodium vivax*, transmitted through mosquito bites. Nearly 65% of all malaria cases in India are caused by *P. vivax*. It is in this area that the U.S.-India collaboration Malaria Vaccine Initiative has been particularly successful.

NARENDRA BISHT/INDIA TODAY



*The U.S. encourages  
bilateral research on  
the development of  
affordable vaccines*



A NIH-trained scientist, Chetan Chitnis, working in the New Delhi-based International Centre for Genetic Engineering and Biotechnology (ICGEB), developed a candidate vaccine for *P. vivax*. He was supported by the Malaria Vaccine Initiative at PATH (Program for Appropriate Technology in Health), a U.S.-based non-profit organization. This PATH initiative was made possible by a Rs 675 crore (\$150 million) seed grant from the Bill and Melinda Gates Foundation. It will now be developed and eventually marketed by an Indian biotechnology company, Bharat Biotech India Ltd. The first phase of human clinical trials will take place in Mumbai. Another malaria vaccine that targets *P. falciparum*, which is the most lethal form of malaria and causes almost all malaria-related mortality, is the subject of collaboration between CDC and Bharat Biotech International Limited. This vaccine effort, which was headed by Health Attaché Dr. Lal when he was at CDC, is designed to target multiple stages of the parasite simultaneously. The vaccine development work is continuing at CDC and the CDC team is also working with the Indian Council of Medical Research toward the development of a testing site for malaria vaccines.

DR. ROGER GLASS/CENTER FOR DISEASE CONTROL AND PREVENTION



And it worked. The viral strains were collected from M.K. Bhan of AIIMS and Prof. C. Durga Rao of the Indian Institute of Science (IISc). They were sent to CDC, where Dr. Roger Glass noted that they were human-bovine “reassortment” strains, which meant that the virus had both human and bovine genes. They noted that this viral strain caused no symptoms in infected children, but raised their immune response, so that they were protected from more virulent strains of rotavirus. NIH then made pilot lots of the vaccine for testing, and after initial safety tests in the U.S., they are now being tested at AIIMS, under the U.S.-India Vaccine Action Program.

To be effective, vaccines must be preserved under harsh Indian climatic conditions. Research supported by the Gates Foundation has developed vaccine vials, which change color from white to purple when the vaccine is no longer usable. This technology is being widely used in India, but not yet in the United States—proving that benefits of bilateral health programs can go both ways.

HIV and malaria are not the only success stories in terms of vaccines. One of India’s biggest tragedies is the death of more than half a million children every year due to diarrhoea. A virus called rotavirus is often responsible for diarrhoea in India. So the CDC, NIH, All India Institute of Medical Sciences (AIIMS), Stanford University, Bharat Biotech and the Gates Foundation pooled their resources to develop a vaccine for this virus.

## ORS AND CHILD HEALTH

While vaccines prevent children from getting diarrhoea, there is a simple, cheap way to save a child who is suffering from the disease. Children with diarrhoea die from dehydration rather than the virus. Oral Rehydrated Salts (ORS), a carefully balanced solution of glucose, potassium and sodium, has been scientifically shown to provide better rehydration, and save children’s lives. However, in the past usage was poor, because awareness was low and superstitions were high.

VIKAS NARULA



U.S. Secretary of Health & Human Services Tommy Thompson visited India to discuss cooperation on improving the health of children

awareness sessions were launched for doctors and nurses.

The campaign was launched in urban areas of eight north Indian states. The results were spectacular. Before the campaign was launched, WHO-ORS was available in only 23% of the chemist outlets. By 2003, availability had increased to 65% of chemist outlets in the campaign area. ORS sales have increased by 23% and WHO-ORS brands by 63%. The use of ORS among children with diarrhoea has increased from 26% in 1998-99 to 50%. And no statistics can quantify the joy of parents whose children have been saved.

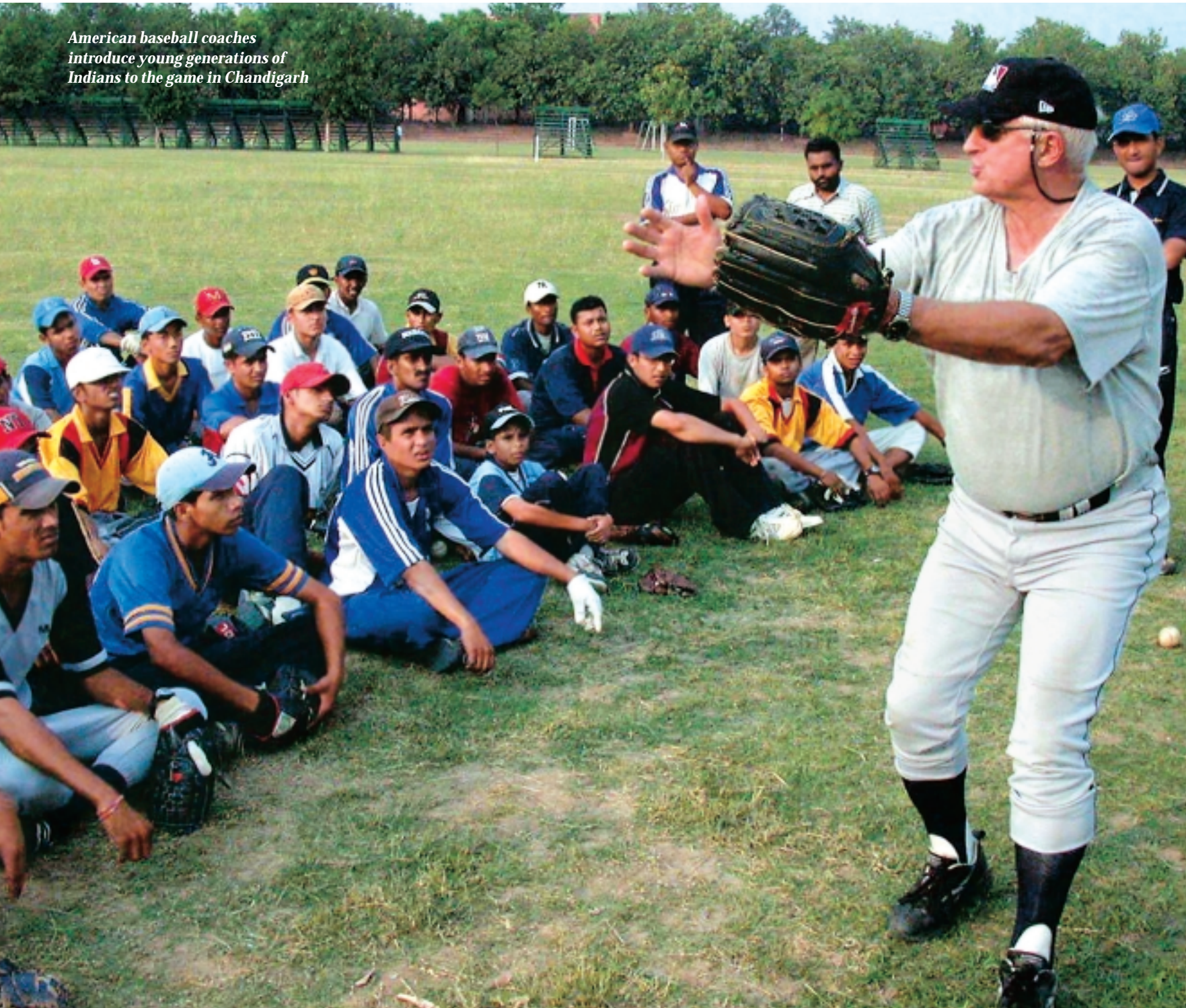


USAID launched a successful campaign on the use of ORS for children suffering from diarrhoea

Training in public health is the core of the U.S.-India alliance. This is the best way to increase awareness, control and prevent infectious diseases.



*American baseball coaches  
introduce young generations of  
Indians to the game in Chandigarh*



COURTESY: INDIAN EXPRESS

## PEOPLE TO PEOPLE TIES REACHING OUT

T

he small town of Malerkotla in Punjab has one claim to fame. The Discovery Channel once featured it in a program called “The Legend of Malerkotla,” highlighting its record of communal peace. It is a place where Hindus, Muslims and Sikhs have lived in harmony for centuries.

Recently, Malerkotla acquired a second distinction, connected to an event that took place halfway across the world in the southern U.S. state of Louisiana. On that particular day, virtually every resident of this town was glued to his or her TV to watch the results of the Baton Rouge elections, a city hardly anyone had heard of in a country most had never been to. It was a historic moment. A bright, young Indian American politician, Bobby Jindal, was in the race for election as Louisiana governor. He lost by a narrow margin. But for those 24 hours, CNN was the channel of choice in Malerkotla and the message was that the U.S., like India, is a vibrant multiracial, multiethnic democracy. Indians learned that the face of America is changing, literally, and that the inclusion of this new and increasing diversity is bringing greater strength and vitality to the U.S.

If there is one element that drives the U.S.-India dynamic, it is the immense emotional power of the people-to-people network, which now goes deeper than anyone could have ever imagined. For example, Indians and Americans alike mourned the death of Haryana-born NASA astronaut Kalpana Chawla in the Columbia space shuttle disaster in 2003. She was a hero to many in both countries, and her tragic death brought the people of both nations, and their dreams,



A.P. PHOTO



Indian American politician Bobby Jindal during his campaign for Louisiana governor

closer together. Even during the years when U.S.-India relations were not at their best, people-to-people ties were expanding, and a variety of U.S. private organizations were engaging with Indians and fostering genuine partnerships.

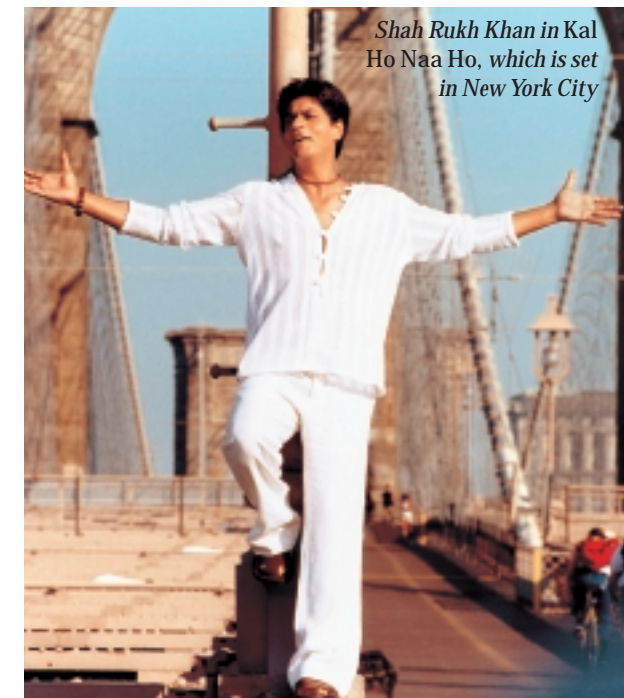
Two compelling images perhaps reveal best the extent to which citizens of the U.S. and India are finding common ground. In December 2003, Lt-General James Campbell, Commander, U.S. Army Pacific Command, traveled to Chandigarh to pay his respects at the cremation, with full military honors, of a young soldier, Sgt. Uday Singh. An Indian national, Singh had migrated to Chicago and enlisted in the U.S. Army. Shortly after his unit was posted to Iraq, his patrol ran into an ambush near Baghdad. "Two great democratic nations pause to mourn the loss of this courageous young man ... a brother-in-arms and India's son," said Campbell. "He made the U.S. Army and the people of the United States proud." Singh's father, P.M. Singh, told reporters, "I am sure he has made all Indians as proud as I am, a father who has lost a son."

The second is the image of Bollywood heartthrob Shah Rukh Khan striking a pose on the Brooklyn Bridge in a recent blockbuster movie, *Kal Ho Naa Ho*, a film set almost entirely in New York City. The film cashes in on a rising trend of greater interest among Americans for Hindi films. Adding to this desire for things Indian are *Bombay Dreams*, a Broadway musical based on Bollywood films, and the continued cross-cultural contributions of personalities such as Mumbai-born filmmaker Ismail Merchant and musician Ravi Shankar. Mr. Shankar's daughters are a great example of the blending

of the two cultures. Norah Jones, a Grammy-winning American singer, and Anoushka Shankar, a traditional Indian musician, are—like their father—popular in both India and the U.S.

Appropriately enough, the enduring basis of the bilateral relationship stems from the fact that more and more Indians are fulfilling their "American Dream," inspired by the success stories of the prosperous, two million-strong Indian-American community in the U.S. Indians now form the second largest group of legal migrants to the U.S. after Mexico, having ousted China from that position two years ago. Indian Americans are making extraordinary and growing contributions to U.S. culture, business, science and technology and, increasingly, politics. India is proud of its nonresident Indians (NRIs), as the annual "Pravasi Bharatiya Divas," a major international conference sponsored by the Ministry of External Affairs and the Federation of Indian Chambers of Commerce and Industry (FICCI), has shown. The U.S. Embassy has honored the American NRIs at the annual conference by

hosting a reception to learn more about what they are doing to cement the bonds between the two nations.



And increasingly, American culture and American values are finding greater acceptability in the Indian psyche. A young industrialist in India, Naveen Jindal, inspired by American values, successfully launched a legal campaign to allow Indian citizens the right to fly the national flag from their homes. More widespread has been the explosive growth of the Internet and satellite television, through which Indians can watch CNBC, Bloomberg, MTV, HBO, CNN and ESPN, not to mention popular television shows like *Friends* and *Jay Leno*. All of these media have opened new windows to the U.S.

People-to-people ties create cultural fusion. One of the most visible symbols of Americana, McDonald's, has localized its Indian outlets with Maharaja Macs and McCurry meals. Pizza Hut and Dominos have followed suit. Consequently, these all-American brands have acquired an Indian face.

Cuisine's cultural advance is a two-way street. Indian cuisine, with some help from high-profile fans like former President Bill Clinton, is acquiring mainstream status in the U.S. The mushrooming of Indian restaurants across the country is only one indicator. When Payal Saha started a restaurant in New York selling Calcutta's famous chicken rolls, she had no idea it would become the runaway success it now is. Yoga classes today are almost as common in the United States as Reebok fitness classes are in India, and with Madonna popularizing *mehndi* and *bindi*, Nicole





MIRIAM CARAVELLA

*Pulitzer Prize-winning playwright Suzan-Lori Parks exchanging views with Indian students*

Kidman performing to Hindi film music in *Moulin Rouge*, and a range of American musicians and rock stars acknowledging Indian musical traditions, "exotic India" is becoming commonplace.

Encouraging cultural cooperation has been an integral component of the work of the Public Affairs Section of the U.S. Embassy. Its job is to foster mutual understanding through numerous cultural and educational programs that encourage personal, professional and institutional ties between people and organizations in the two countries. American performers, from jazz musicians to folk singers, visit India regularly to perform and interact with Indian musicians. The latest in a long line of successful performers was Steven Young, the legendary folk singer and guitarist, who recently spent a month touring India, including performing at the Jaipur Heritage International Festival.

The Embassy also hosts U.S. speakers, who exchange views with Indians on a range of issues of mutual interest and concern. Recent American visitors have shared their views on issues such as trade and investment, intellectual property rights, environmental protection, judicial reform, terrorism, HIV/AIDs awareness, trafficking in women and children, and biotechnology. U.S. diplomats have visited a variety of Indian organizations and institutions to encourage greater bilateral dialogue. The Embassy also has fostered citizen exchanges in areas as diverse as alternative conflict resolution and child welfare, and its book donation and book reprint programs have brought

## SEEDS OF PEACE FOSTERING AMITY

### A UNIQUE SUMMER CAMP FOR SCHOOLCHILDREN FROM THE SUBCONTINENT HOLDS OUT HOPE FOR LASTING PEACE BETWEEN INDIA AND PAKISTAN

Twelve high school children from Mumbai and 12 more from Lahore had a fantastic summer in 2003. They spent six weeks at a summer camp in Maine, living together, eating together and debating the future of South Asian peace. Fast friends by the end of their vacation, the children returned to their respective homes in India and Pakistan brimming with solutions for peace in the subcontinent. Even though relations between India and Pakistan remained frosty through that summer, these children succeeded in bringing their respective families to the Wagah border to get to know each other and strengthen these new bonds. For the first time, the internationally acclaimed Seeds of Peace program took on a South Asian face, as Indian and Pakistani children came under its spell to build bridges of peace with the next generation. It is

a measure of the quality of the new relationship between U.S. and India that such programs are running virtually in tandem with India's own recently announced peace initiative with Pakistan.

Founded in 1993 by author and journalist John Wallach, Seeds of Peace was started to bring Israeli and Palestinian young people together at a summer camp in Maine. The number of Middle East participants has shot up from 50 in 1993 to more than 400 in 2003. The tremendous success of the program has prompted it to be used in other conflict-ridden parts of the world. In 1998, Greeks and Turkish Cypriots joined the program, and in 2000 Balkan teenagers were added to the list.

Over 1,500 Israeli, Palestinian, Egyptian, Jordanian, Moroccan, Tunisian, Qatar, Yemeni, Cypriot, Greek, Turkish and Balkan teenagers, as well as Indians and Pakistanis, have graduated from the program. The approach is to pair the children with other kids whom they would otherwise see as enemies. The children start out with their preconceived attitudes toward each other but gradually look at their combined history from the other side of the fence. By the end of the program, hatred gives way to understanding and peace.



*Indian and Pakistani children at the Seeds of Peace camp in Maine*

SUSI EGGENBERGER





American singer Steve Young and Rajasthani musicians team up for a performance in Jaipur

American information to wider Indian audiences.

The liberalization of the Indian economy has fueled the people-to-people contact between the two countries even further. American business people have been keen to tap into this emerging market, and business travel has increased to the extent that American hotel chains like the Radisson, Sheraton, Marriott and Hyatt are expanding operations and spurring tourism. This trend works both ways. With the Indian government relaxing rules regarding foreign exchange and foreign investment, a higher number of Indian businesspeople and tourists are traveling to the U.S. Earlier, a majority of Indians visited the U.S. to visit friends or relatives. Today, a large proportion of tourists are visiting America on regular conducted tours as opposed to restricting their travel to cities where their relatives are based.

Such interaction has expanded and intensified in the past few years, and today it is routine to see Indian parents dividing their time between their homes in India and their children studying or working

in the U.S. An impressive 500,000 Indians travel to the U.S. every year for everything from business to weddings and pure tourism. But the reverse flow is not nearly as voluminous. There are several reasons for this, ranging from restrictions on the number of flights to India's continued infrastructure problems. Yet, the word is spreading about India as an appealing tourist destination, and just as businesspeople are rapidly forging commercial links between the U.S. and India, American tourists and backpackers are also helping to forge a connection while in search of the "incredible India" experience.

At another level, the emergence of India as a "knowledge" powerhouse means that the U.S. remains the favorite destination for people seeking employment overseas. As a result, Indians receive about 50% of the temporary work visas to the U.S. Though the numbers of H1-B visas came down to 65,000 in 2003, India sent 28,000 professionals to the U.S. in 2003, up from 25,200 in 2002. These are distinct from professionals who travel to the U.S. on L-1 visas that are sponsored by their companies. As more and more American companies set up shop in India, this figure can only go up. Teachers and nurses are the next groups of professionals who are on their way to the U.S., answering a demand in these sectors.

Apart from such interaction is the growing number of both government and privately organized exchanges between India and the U.S. As active democracies, it is perhaps natural to bring the political communities of the U.S. and India closer together. Chicago and New Delhi, for example, have

a "sister city" relationship. Chicago Mayor Richard M. Daley recently visited India to foster more business and cultural ties between the two cities and to present a medical van to the Ramakrishna Mission in New Delhi. Denver and Chennai also have a "sister city" connection. The American Council for Young Political Leaders (ACYPL) is active in India. It works with the U.S. Embassy to organize exchanges between politicians in the 25-45 age group at the state, municipal and city levels to visit each other's country and open themselves to different democratic traditions. In 2003, this program

brought a group of young U.S. Republican and Democratic politicians to India; they were hosted by the Congress Party in Delhi, the Telugu Desam Party (TDP) in Hyderabad and the Bharatiya Janata Party (BJP) in Goa. Through ACYPL and other exchanges, participants on both sides become knowledgeable about international policy issues and political systems and processes.

Emblematic of the transformed relations, the 143-strong India Caucus in the U.S. Senate and House of Representatives is the largest group of American lawmakers publicly committed to improving relations with India. This has a lot to do with the fact that people of



SPAN magazine, produced by the Public Affairs Section of the U.S. Embassy, has covered American culture and society for over 40 years



## JAZZ AMBASSADORS

# MUSICAL MESSENGER

**A MOST SOUGHT-AFTER AMERICAN IMPORT TO INDIA, THE JAZZ AMBASSADORS PROGRAM IS AN INSTRUMENTAL PART OF THE CULTURAL CALENDAR OF THE TWO COUNTRIES**

Sandeep Das is an accomplished tabla player. And he has a Grammy nomination to prove it. Teaming up with Iranian spike fiddler Kayhan Kalhor and sitarist Shujaat Hussain Khan, this young tabla player has the makings of greatness. And it didn't take the series of Jazz Ambassadors concerts to figure that out. But it certainly helped when Das, along with three other Indian musicians, teamed up in New Delhi with a visiting American group. The music and the audience were the richer for it.

Sponsored by the U.S. Department of State and the John F. Kennedy Center in Washington, D.C., the Jazz Ambassadors program, now in its sixth year, is a sought-after music import from the U.S. in India. And Indian jazz aficionados range from Attorney-General Soli Sorabjee, probably India's most famous jazz enthusiast, to an elderly Bengali gentleman who travels from one remote end of south Calcutta to the American Center, as he has been doing for years, to listen to his favorite jazz numbers.

The Kennedy Center chooses seven quartets of exemplary jazz musicians to represent American music abroad in performances that highlight vocal jazz, an indigenous American art form. In addition to public concerts, Jazz Ambassadors conduct master classes and lecture-recitals for musicians across India. In 2003, the jazz workshops, for the first time, recruited musicians through the Internet. Needless to say, they were flooded with offers. If American music is instinctively associated with rock, pop and country, there's an acquired taste that culturally attuned Indians find particularly appealing: the deep-throated jazz melodies of the American South.



*U.S. Jazz Ambassadors perform in New Delhi during Diwali*

Indian origin make up an influential and affluent section of their own constituencies in the U.S. In the surest sign that India had acquired a toehold in American domestic politics, Indian Americans formally established the U.S.-India Political Affairs Committee (USINPAC) in 2002 to help inform and lobby American legislators. In India, the Indo-U.S. Parliamentary Forum, which has some 80 Members of Parliament as members, is the counterpart to the India Caucus, and it has been active in promoting political ties and dialogue with the U.S.

In fact, the phenomenal growth of the Indian American community in the U.S. has contributed significantly to expanding and enriching the people-to-people network. The fact sheet is impressive enough: Indian Americans already have the highest per capita income among ethnic groups in the U.S. The 50,000 Indian American doctors represent 5% of all American doctors. Of the 52,000 hotels in the U.S., 22,000 are owned and operated by Indian Americans. The community is also responsible for one-third of the start-ups in Silicon Valley. According to USINPAC, Indians donated \$7 million in the 2000 U.S. presidential campaign and expect to raise that to \$10 million in 2004.

The International Visitors Program, run by the U.S. Embassy's Cultural Affairs Office, has helped generations of Indian professionals familiarize themselves with the U.S. and meet counterparts. But

RAMESH JAIN

in the past few years, this program, too, has adapted to the changing bilateral relationship, and a wider cross-section of Indians from different fields and different language groups is now visiting the U.S. under this program. For example, the International Visitors Program has arranged for a number of Indian Muslims from various fields to make professional visits to the U.S. The aim was not merely to expose Muslim leaders and thinkers to American life and culture; it was also to show that the U.S. is not anti-Islam and to foster a genuine cross-cultural dialogue.

The first of several groups of *madrasa* leaders traveled to the U.S. in 2003. It was a familiarization program with a difference, say officials. The aim was to introduce the leaders of these religious schools to U.S. parochial school systems, including Christian, Muslim and Jewish schools. U.S. officials have also

been interacting more with Muslim leaders in India during their visits here. In return, Muslim scholars have visited American universities and think tanks to familiarize themselves with the way these institutions of learning function and to observe the range and richness of the way American Muslims live. Islam is one of the fastest-growing religions in the U.S. today, and American values are, by and large, consistent with Islamic values.

U.S. think tanks and research centers are also focusing on India like never before. For instance, the Brookings Institute's South Asia program is run by a well-known India expert, Dr. Stephen Cohen. Similarly, the School for Advanced International Studies (SAIS) in Johns Hopkins University has a South Asia program which employs another veteran India expert, Dr. Walter Andersen. Brookings now works closely with the new U.S. Study Center at the Observer Research Foundation (ORF) in New Delhi, and the Aspen Institute has established an India program in cooperation with the Confederation of Indian Industry (CII). Nonprofit U.S. groups as diverse as Special Olympics, the Center for Civic Education, the National Preservation Trust, the American Jewish Committee, the Asia Society, the East-West Center, and the New York and Chicago Councils on Foreign Relations have recently sent groups to India. The Asia Society's new President is an Indian American, Vishanka



## AMBASSADOR'S FUND

# SAVING HISTORY

### THE AMBASSADOR'S CULTURAL FUND HAS BEEN SET UP TO HELP COUNTRIES PRESERVE THEIR CULTURAL HERITAGE

The U.S. Embassy Ambassador's Cultural Preservation Fund has worked to make five national monuments in India accessible to disabled persons, aided by visiting experts from the U.S. Also, the Fund has assisted the Heritage Trust's work on a special preservation project at the Medhi Talao Ensemble site at Champaner-Pavagadh in the state of Gujarat, which is on the World Monument Fund's list of 100 most endangered heritage sites. The Ambassador's Fund

ANN GRIMES



*Robert Blake of the U.S. Embassy with Heritage Trust President Karan Grover at Champaner-Pavagadh*

was established in 2001 by the U.S. Congress to help less developed countries preserve cultural heritage. Congress noted, "Cultural preservation offers an opportunity to show a different American face to other countries, one that is non-commercial, nonpolitical and nonmilitary."

The fund is administered through the Department of State and, given the large numbers of requests, no more than one grant is made per country each year.

N. Desai, who received her B.A. from Bombay University. Indian organizations, too, have sent delegations to the U.S. to foster more interaction, and the Indian Council for Cultural Relations (ICCR) plans to open a cultural center in Washington, D.C.

Meanwhile, NGOs are making their own contribution to bring the two countries closer. The U.S.-based America-India Foundation (AIF) is one among many involved in India. AIF is dedicated to accelerating social and economic change in India by connecting communities and resources across the U.S. and India. Its projects include grants for Gujarat earthquake rehabilitation and funding to fight the "digital divide" by bringing computer technology to underprivileged Indian schools. Also, it is exchanging technical skills, intellectual resources and culture by bringing young Americans, mainly college graduates, to spend a year living and working in India. Some of these graduates have volunteered because of their Indian roots. Like Shruti Patel, a young business management graduate from New York University, who is spending a year traveling through villages in Gujarat teaching villagers as part of the Learning on Wheels program. There is also Kalaivani Murugesan from Atlanta who has joined an initiative started by President A.P.J. Abdul Kalam to help weavers in Andhra Pradesh improve their products and become market savvy. Membership in Rotary clubs in India grew almost 18% in 2002, with a net gain of 14,209 members, making the country the world leader in the number of new Rotarians. Rotary has been involved in crucial Indian public health issues, such as the Pulse Polio campaign to rid the country of the polio menace.

Then there are the programs initiated by the American Centers in New Delhi, Calcutta,

*American Information Resource Centers, like this one in Calcutta, have helped cement bonds between India and the U.S.*



AIRC CALCUTTA

Chennai and Mumbai. Long regarded as cultural nerve centers, the centers have played an important role in enabling the transformation of relations between U.S. and India. The American Information Resource Centers (the former USIS Libraries) and the expanded Embassy website (<http://newdelhi.usembassy.gov>) reach out to a variety of people and provide timely, authoritative information on U.S. policy and society.

No mention of U.S. culture and people-to-people ties can be complete without sporting traditions figuring in the equation. Thanks to ESPN, Indians are becoming hooked on National Basketball Association (NBA) games along with baseball, American football and golf. The Amateur Baseball Federation of India received a major boost with the help of U.S. coaches Rick Dell and Tom Dedin who were in India under the Envoy Program to familiarize and coach young Indians in America's favorite sport. Their coaching clinic in Chandigarh was attended by 80 players from 19 states, a startling statistic considering baseball is struggling to find its feet in India. "I think cricket compliments the development of baseball in India as it creates a 'bat-and-ball' mentality," says Dell. And sports popular in India are slowly but surely attracting interest in the U.S.

Eventually, cultural and political affinity work at one level, but at a more subliminal and emotional level, it is the people-to-people contact that strengthens and nurtures the relationship between the two countries. The relationship, expanding in so many areas, would lack vitality were it not for the growing interaction between individual citizens of the world's two largest democracies.





## SUPPORT FOR NGOS MAKING A DIFFERENCE

India and the U.S. share many common goals, perhaps the most valuable being democracy and development. What is equally important to each is the commitment both countries have to civil society and supporting the role that nongovernmental organizations (NGOs) play in fostering these goals through programs and initiatives by voluntary groups. This is precisely what the Public Affairs Section of the U.S. Embassy in India had in mind when it has given grants to assist India in addressing community problems.

Theoretically, the program represents a relationship between a donor and a recipient. But the thread that holds this association together goes far beyond budgets and target objectives. It weaves two different views into an integrated approach. Women's empowerment, the eradication of poverty, child labor and illiteracy, along with the promotion of democracy at the grassroots level, are concerns addressed by the small grants program. With the modest support of the Public Affairs Section, a range of NGOs are tackling these issues. Not only do the projects help make an impact on the lifestyle of the targeted group of individuals, but they also encourage the beneficiaries to absorb the collective values of development, democracy and the empowerment of individuals in civil society. The grants help develop and strengthen the aspirations of those who are involved in and affected by the programs and this is evident in the faces of the thousands who have been touched by the results.

The district of Nadia is a prime example. One of West Bengal's poorest and most populated districts, Nadia is frequently prone to floods and other natural disasters. Fishing, farming and weaving help the villagers make

COURTESY: MITRANIKETAN



*Women at the Mitraniketan workshop in Thiruvananthapuram learning to sew and make a new life for themselves (Facing page) The scroll, made by the women of Nadia, tells the story of a woman's daily challenges*

### MITRANIKETAN

## ABODE OF CHANGE

**IT IS THE HUMAN FACE OF DEVELOPMENT. THE LIVES OF WOMEN IN RURAL KERALA ARE CHANGED AS THEY LEARN NEW SKILLS AND STAND ON THEIR OWN FEET.**

Mitraniketan literally means "an abode of friends." In 1956, when K. Viswanathan started the NGO in Thiruvananthapuram, Kerala, he wrote a new chapter in people-oriented rural development with its focus on areas such as agriculture, education, women's development and vocational training.

With a grant from the Public Affairs Section in July 2002, Mitraniketan started a vocational training program for rural women. Under the project, as many as 1,000 women were trained in cattle and poultry rearing, candle-making and tailoring.

During the candle-making and tailoring classes, the women

were taught according to the National Open School syllabus so that they would be eligible to sit for an exam under the vocational education program. The women were also eligible for a monthly stipend. But instead of accepting the money on a monthly basis, the women saved it either to buy a sewing machine, two goats or ten chickens at the end of the training. It was the realization of a dream, to become independent by making a living out of the skills they had learned.

In fact, K. Viswanathan, Director of Mitraniketan, observed, "The project will lead to an improvement in the quality of life of these women as well as sustain the skills and awareness acquired." This kind of program dovetails with Mitraniketan's endeavor to impart community-based education through participatory teaching methods. With the vocational skills acquired, the women trained at Mitraniketan now have the means to better their social and economic status. It is an important step towards women's empowerment—an issue that is of concern in both India and the U.S.



## POWER THAT WORKS

**AFTER A WORKSHOP, THE WOMEN LEADERS READILY TALK CRISIS MANAGEMENT, DEVELOPMENT AND DEMOCRACY.**

It was the ravages of a war that resulted in the establishment of the Guild of Services. A group of social workers, moved by the plight of women widowed in the 1971 Indo-Pakistan war, set up the NGO the next year to lend a helping hand. They realized that the root problem with such women, who were socially and economically dependent on others, was the insecurity about their lives. The Guild decided to focus on the empowerment and development of women in similar circumstances. And that's when the real battle began.

COURTESY: GUILD OF SERVICES

*Women sarpanches chalk out programs*



In the past 31 years, the Guild has undertaken four projects with the help of grants from the Public Affairs Section. While two of them focused on creating awareness about domestic violence, the others sought to strengthen democracy in villages. In August 2003, the NGO was awarded a grant to organize a workshop for women *sarpanches* (village heads). As many as 386 *sarpanches* came to Delhi to study constitutional law, social citizenship and crisis management.

Says Meera Khanna, Joint Secretary, Guild of Services: "We had organized a similar program in Mathura. But it was on a smaller scale, involving 100 women. This one needed more funds and the American Center chipped in." The women brought up social issues, from child marriages and Sati to sexual harassment, and sought answers on how to deal with them. They also created a federation of women *sarpanches* so that they could work together as a group. Says Khanna, "We are careful about the source of our funding and we have never had any ideological interference from the donors. Our goal is the same—to empower women."

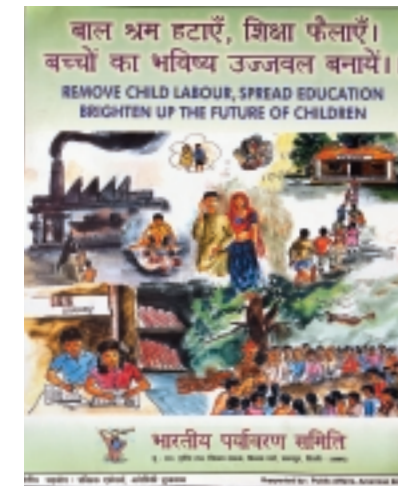
ends meet. To help the village women become more independent and organize themselves into self-help groups, a Calcutta-based NGO, Sreema Mahila Samiti, applied for a grant from the Public Affairs Section. With the grant, more than 100 women were taught how to access and use micro-credit and other economic and social opportunities. The Public Affairs Section's goal is to support projects that develop a momentum of their own and, in turn, strengthen civil society. Successful programs do not end by benefiting a few people, but rather they succeed because the positive impact carries on long after the grant money is spent. The women of Nadia learned how to work collectively to become more independent and improve their living conditions, both economically and socially.

Now, among the official records at the Embassy in New Delhi is a 30-foot-long picture scroll. Made by the women of Nadia who had been helped by this grant, the *patachitra* (a traditional form of Indian painting) is filled with haunting images of a woman's challenges. What is special about these drawings is that they were made as a gesture of thanks by those who were helped by the funds and they provide an invaluable document of the kind of work that still needs to be done.

While the amount of funds given may not be large, the impact of the programs is significant. The small grants vary from Rs 92,000 (\$2,000) to Rs 23 lakh (\$50,000). In fiscal year 2002-03, Rs 3.6 crore (\$786,000) was disbursed

to support a variety of programs across India. The choice of programs and the credentials of the recipient organizations are key to funding projects that can make a lasting impact. Most of the grants vividly bring out the human side of the development equation. They are not intended to make sweeping policy changes. They target small groups and faster improvements in the participants' and community's lives.

"These grants complement our efforts, and they come with no strings attached," says George Mathews, Director of the Institute of Social Sciences (ISS) in New Delhi. The ISS used a grant to organize workshops on democracy for members of the Jammu and Kashmir Assembly. Democracy, as Mathews points out, is a reality in both the U.S. and India, but it is a system that has to be nurtured and cherished.



*This poster is part of an NGO-U.S. Embassy effort to eliminate child labor*

Grants have also been given to help women understand their legal and political rights, an important area for all countries as they seek to strengthen their civil societies. The 73rd Amendment to the Indian Constitution catapulted women into mainstream politics in 1993 by setting aside one-third of the seats in local councils for women and lower castes. As a result, a million women were brought into the guarded male bastions of administrative bodies across India's villages and towns. Unfortunately, in some parts of

India, the official power that was given to women was often guarded by the husband or other male members of the family. The Guild of Services, a Delhi-based NGO, has made an effort to change this. With a grant from the U.S. Embassy, it organized a workshop to help locally elected rural women become more aware of their legal and constitutional rights.

The success of the three-day program was clear. While some of the women may have been hesitant at the beginning of the workshop, all 386 left with their heads held high. The project helped make women understand constitutional and legal issues and taught crisis management techniques to women from eight states across India. Apart from problems relating to governance, the women also discussed problems relating to

## NGO PROJECTS FUNDED BY THE U.S. COVER A WIDE RANGE OF ISSUES

■ **AIDS Prevention Society:** The fund was used to help control the spread of HIV/AIDS in Guwahati.

■ **Adithi:** A Calcutta-based NGO trained 15 young women on a variety of healthcare issues. The group was also trained on how to educate other teenage girls.

■ **Prerana:** Its Mumbai center used the fund to spread awareness on sexual exploitation and trafficking through audio cassettes, TV spots and workshops.

■ **Cini Asha:** This Calcutta-based NGO undertook a project to create AIDS awareness among students and street children through plays and poster competitions.

■ **Indian Environment Society:** A grant sponsored a project for the rehabilitation of more than 50,000 children working in glass factories in Ferozabad, Uttar Pradesh.

■ **Consumer Education and Research Center:** The Ahmedabad-based center was given a grant to launch a website to inform people about the adverse reaction of drugs.

■ **Katha:** This NGO used a grant to provide educational and vocational training to 200 girls in a Delhi slum area.



## SHOWING THE WAY

SAVING THE NEXT VICTIM, A FILM ON A WIDOW FIGHTING THE ESTABLISHMENT AND SEEKING JUSTICE, IS LIVING UP TO ITS TITLE.



This Delhi-based NGO has a famous face spearheading it: India's supercop, Kiran Bedi, is the chairperson. Set up in 1995, after Bedi received the Ramon Magsaysay Award for prison reform, the India Vision Foundation has been working on women's empowerment projects and combating drug and alcohol abuse. It also runs a

home for the children of prison inmates.

When Bedi was planning to make a film on domestic violence and the trauma of a single woman fighting the legal and social system, she faced a problem. She lacked funds. She turned to the U.S. Embassy's Public Affairs Section for a grant.



COURTESY: INDIA VISION FOUNDATION

*Kiran Bedi's film takes the message to the masses*

Says Bedi: "The funds helped us put the project together. We had the knowledge and the expertise and they gave us the money."

The NGO plans to use the film, *Saving the Next Victim*, to highlight its case for women's empowerment. Says Richa Gupta, Project Coordinator: "It will be used as a training module in our workshops." The film tells the true story of a woman who is wrongly implicated in the murder of her husband. She is victimized both by society and the police. The organization is planning to hold screenings for village communities in different areas and let the people see the real picture. Perhaps it will help save the next victim.

## THE WORD



"There are many here who are poor, but you are proving democracy can be used to uplift the poor"

—Former President Bill Clinton, to the women of a cooperative in Rajasthan

alcoholic husbands, rape and dowry. The need for holding such workshops was evident right from the beginning when a burly mustachioed man insisted on registering, claiming his rights as a *sarpanch-pati* (the husband of a councillor).

Udyogini, an NGO that focuses on the economic and social needs of tribal women in India, also received a grant from the U.S. Embassy's Public Affairs Section. The NGO formed self-help groups for 90 tribal women who made a living by collecting forest produce in a small village in Madhya Pradesh. These women have now learned to be more independent by pooling their money and starting a credit association, as well as selling products directly and keeping the traditional middlemen out of the equation. The immediate benefit of the Udyogini project was that a group of women in Madhya Pradesh learned the benefits of micro-credit and of operating their own bank accounts. This element of sustainability and strengthening of civil society is the cornerstone of all development projects funded by these targeted grants.

These initiatives also find sympathetic ears in Washington. When Secretary of State Colin Powell submitted a report titled "Victims of Trafficking and Violence Protection Act" to the U.S. Congress in 2001, one of the points he highlighted was the lack of funding to combat trafficking of children in India. Soon thereafter, Equations, a Bangalore-based NGO, was awarded a grant to study child trafficking in the tourism

industry. The correlation of these events demonstrates a synergy of concerns between the U.S. and India.

The idea behind these grants is not just to eradicate a specific problem but also to create a legacy that survives the grant. After all, self-sustenance, not charity, is the cornerstone of empowerment. In 2002-03, a Lucknow-based NGO, Suraksha, was given a grant of Rs 368,000 (\$8,000) to create human and constitutional rights awareness among underprivileged women. The workshops were held in eight urban slums in the district. Well after the project ended, Suraksha continues to hold similar workshops in other slums.

Most grants are issue-specific. Secularism is a major issue in western India, particularly in Maharashtra and Gujarat. The environment is another area of concern, and grants have been awarded to support wasteland management and water conservation. A project to protect an endangered breed of Himalayan salamanders and also develop local environmental concern and leadership is also under way. Diverse as the projects are, all the grants are driven by one common philosophy: to build civil society and help improve rural and urban India. As most NGO recipients admit, the absence of "ideological interference" from the U.S. Embassy helps. As well known Indian police official and social activist Kiran Bedi said, "We have a grasp of the issues, and they (the U.S. Embassy) understand the issues and can provide the funds."

## TROUBLE SHOOTING

AS THE DOWRY SYSTEM STRIKES ROOTS EVEN IN LITERATE KERALA, A PROJECT FOCUSES ON THE EVIL AND LAUNCHES AN AWARENESS CAMPAIGN.

A Kerala-based NGO, Jananeethi, which works for human rights, gender equality and children's rights, was looking for funds to initiate a comprehensive study on the practice of dowry in the state. Jasmine Joseph, Project Coordinator, says about 70% of the marriages in Kerala are "arranged" by family or friends, and this is where the dowry system comes into play. There are brokers who have made an occupation out of match-making and these people are so organized that they even have a fixed fee for their services: 1% of the dowry from the bride's side and 2% from the groom's side.

COURTESY: JANANEETHI



*A Jananeethi session in progress*

Says Joseph: "This is the first time we have gone for a U.S. grant. We were in need of finances and were told that the American Center has a provision for such projects. We applied and our request was immediately processed." The study took a year to complete. It began as an effort to collect solid data so that the NGO and the Government could develop a plan of action to combat the system of paying dowries. The study has since helped shape the anti-dowry movement in the state spearheaded by Jananeethi. As Joseph says, "We have organized workshops and discussed the findings of the study with opinion-makers so as to create an awareness about the problem." As a relief measure, armed with the findings from the study, Jananeethi has set up a helpline for women victimized in the name of dowry. Since the survey has helped the organization identify the mindsets that promote dowry, its advice is rooted in reality.



## EDUCATION

# THE LEARNING CURVE

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people-to-people ties between the U.S. and India have boomed recently, but probably in no other area is the trend clearer than in education. For years, the United States has been the preferred destination for thousands of Indian students going abroad for graduate, as well as specialized education. This trend continued, even when diplomatic relations between the world's two largest democracies experienced prolonged periods of frost. And recently the student numbers have jumped tremendously.

With the liberalization of the Indian economy and the subsequent boom in living standards of the Indian middle class in the early 1990s, the number of Indian youth traveling to study in the U.S. has increased dramatically. Despite the misperception that the U.S. has become less welcoming to foreign students in the post-9/11 period, the data for India show otherwise, and American universities warmly welcome Indian students for the cultural diversity and intellectual skills they bring.

While there were 32,534 Indians studying in U.S. campuses in the year 1991-92, the figure touched 54,664 a decade later. And 2001-02 saw India surpass a record long held by China: for the first time, there were more students from India enrolled in U.S. colleges and universities than from its large neighbor to the East. In 2002-03, there were 74,603 Indians on American campuses, comprising almost 12% of the nearly 600,000 foreign students pursuing studies in the U.S. The U.S. Ambassador to India, David Mulford, noting that India is the single largest source of foreign students in the U.S., has said: "It makes me optimistic just to think of all those Indian students on the campuses and in the

towns of America. Think of their potential impact on the future."

It is easy to see why Indian youth are attracted to the U.S. for higher studies. America has over 3,600 accredited colleges and universities, some of them among the oldest and finest in the world, and approximately 2,500 of them have international student enrollments. In the U.S., Indian students find the education system flexible, diverse, high-quality and student-friendly. They also enjoy the freedom and openness of American society and find the experience of learning and living in the U.S. professionally and personally enriching. In a 2002 survey of Indian students conducted by the United States Educational Foundation in India (USEFI), over 99% felt that the variety of academic programs and the flexibility, hands-on training and multicultural learning environment that educational institutions in the U.S. offered were the most appealing factors. Being at the forefront of technology and educational techniques, U.S. universities, the Indian students felt, were best able to equip them for future careers.

USEFI, the binational educational exchange organization established by the two governments in 1950, has played a major role in helping fulfill the dream of young Indians to acquire quality

SESHU BADRINATH



*Indian students add cultural diversity and intellectual skills to America's campuses*



## AMERICAN STUDIES IN INDIA

# GROWING INTEREST

**AMERICAN STUDIES ARE PART OF THE GRADUATE AND UNDERGRADUATE PROGRAMS AT NUMEROUS INDIAN COLLEGES AND UNIVERSITIES.**

For over fifty years, American Studies has had a significant presence in India. When the Indian School of International Studies (ISIS) was established in 1955, American Studies became part of its program. Later, ISIS became part of Jawaharlal Nehru University in 1969 as the School of International Studies (SIS). Its Department of American Studies now offers courses at Masters, M. Phil., and Ph.D. levels.

Today, American literature, history and politics are part of the undergraduate and graduate programs at numerous Indian colleges and universities. Several American Studies doctoral theses are produced each year including those with cross cultural and bilateral implications. Some premier universities in the country have active centers for American Studies, and a few institutions, especially in South India, have begun to offer full-fledged programs in American Studies.

The U.S. Educational Foundation in India (USEFI) has contributed immensely to the evolution of American Studies in India. The enthusiasm of U.S. Fulbright lecturers has been instrumental in introducing American Studies in many Indian institutions. The Public Affairs Section of the U.S. Embassy also has extensively supported the development of American Studies programs in India. As part of its speaker programs, it organizes seminars and other interactive sessions with universities and colleges, donates gift collections of books to university libraries, and sends U.S. Studies teachers and students to American Studies Summer Institutes in the U.S. It also works closely with organizations such as the Indian Association of American Studies, South India American Studies Network, South Asian American Studies Association and Multi-Ethnic Literatures of the U.S. (MELUS) India. In addition, the branch for the Study of the U.S. at the U.S. Department of State has supported seminars in India conducted by USEFI on American Studies.

American Studies in India today, as elsewhere in the world, is at an interesting crossroads. The pressures of globalization and multiculturalism have brought about a reconsideration of the relevance and future of American Studies in India. The end of the Cold War, growing internationalism, and multi-disciplinary approaches within American Studies have opened new possibilities for discourse. As Indian universities are busy resetting their curricula, there is lot of interest and enthusiasm amongst teachers and students to learn more about the U.S.—its society, culture and politics.

education at American universities. USEFI administers Fulbright scholarships for Indian and American scholars and students; over 7,300 Fulbright fellowships have been awarded since 1950. Apart from its Fulbright programs, USEFI also runs the Educational Advising Services (EAS). Through its four offices in Delhi, Chennai, Mumbai and Calcutta and four satellite centers in Ahmedabad, Bangalore, Hyderabad and Manipal, USEFI provides comprehensive, authoritative and up-to-date information on higher education opportunities in the U.S. According to Dr. Vijaya Khandavilli, Educational Advisor with USEFI in New Delhi, the EAS registered more than 320,000 "contacts" in the past year. The figure denotes the number of contacts Indian students made with the USEFI educational advising centers to seek information and guidance about pursuing higher studies in the United States.

The history of U.S.-India cooperation in higher education is not a recent phenomenon. In 1951, the Government of India set up the first of seven Indian Institutes of Technology (IITs) in Kharagpur, West Bengal, along the lines of the Massachusetts Institute of Technology. Built within a 1,800-acre campus approximately 120 km from Calcutta, the institute benefited from guest faculty from the U.S. and also from the opportunity to send Indian faculty members to the U.S. for training.

A decade after the IITs were established, the Indian Government set up the first of the Indian Institutes of Management (IIMs) at Ahmedabad in Gujarat. In the early years, the IIM collaborated with the Harvard Business School, drawing heavily from its curriculum, as well as its teaching methods. Even the architecture of the IIM building at Ahmedabad has an American touch. The campus is set on a 60-acre site,

## USEFI

# NURTURING TALENT

**USEFI PROMOTES EDUCATIONAL EXCHANGES OF OUTSTANDING ACADEMICS FROM U.S. AND INDIA**

The U.S. Educational Foundation in India (USEFI) was established in 1950 when Prime Minister Jawaharlal Nehru and U.S. Ambassador Loy Henderson signed a bilateral agreement on educational exchange. Also known as the Fulbright Commission, USEFI promotes mutual understanding between the citizens of India and of the U.S. through educational exchange of outstanding scholars, professionals and students.

USEFI fosters research, lecture and study primarily through fellowships for Indian and American citizens; educational ad-

by the Bureau of Cultural and Educational Affairs of the U.S. Department of State under policies established by a presidentially-appointed, independent scholarship board. Currently, the Program operates in India and 139 other countries.

USEFI has awarded/administered about 15,300 Fulbright and other grants to American and Indian scholars, professionals and students since its inception in 1950. Chosen for their academic merit and leadership potential, "Fulbrighters" are provided with the opportunity to study and teach in each other's countries, exchange ideas and develop joint solutions to address shared concerns.

USEFI alumni have formed 16 associations across India. In the U.S., Friends of Fulbright to India, Inc., a nonprofit organization, was formed in 1993 by former U.S. Fulbright scholars to India who have an ongoing interest in promoting academic exchange.



*Indian Fulbright scholars with USEFI Executive Director Jane E. Schukoske (seated third from right)*

vising for Indians interested in study opportunities in America; academic seminars in India involving the Fulbright community; and interaction with Fulbright alumni and supporters. USEFI also arranges visits by U.S. scholars to Indian institutions for lectures, research and consulting, and hosts seminars and roundtables to encourage dialogue with visiting and returning scholars. A binational Board of Directors consisting of five Americans nominated by the U.S. Ambassador and five Indians nominated by the Government of India governs USEFI.

USEFI has an annual budget of about Rs 10.5 crore (\$2.3 million). Its primary source of funding is an annual appropriation by the U.S. Congress. The Fulbright Program is sponsored

USEFI cooperates with a variety of institutions and partners in both countries. In India, for example, it also administers the Ford Foundation-funded International Fellowships Program and the Fulbright-Vanderbilt Fellowship in clinical legal education for an LL.M at Vanderbilt University, and offers cost-shared Fulbright fellowships with Manipal Academy of Higher Education, Tata Trusts and the National Council for Applied Economic Research.

USEFI also administers the U.S. Government-funded Hubert H. Humphrey Fellowship Program for accomplished mid-level professionals committed to public service. USEFI also assists recruitment in India for the East-West Center programs in Honolulu.



## INDIAN BUSINESS SCHOOL

# NET PROFIT

**TIES BETWEEN U.S. EDUCATIONAL INSTITUTIONS AND THE INDIAN PRIVATE SECTOR ARE INCREASING AS A NEW SCHOOL CLEARLY ILLUSTRATES.**

The Indian School of Business (ISB) was set up in Hyderabad in 1997 with the aim of "creating an internationally ranked, research-driven independent management institution to groom future leaders for India and the world." It is a unique collaboration between some of the world's leading corporations, the Wharton School at the University of Pennsylvania, the Kellogg Graduate School of Management at Northwestern University in Illinois and the London School of Business. A Memorandum of Understanding signed between Kellogg, Wharton and the ISB provides for a sharing of expertise, resources, and a close partnership in the curriculum, admissions, faculty recruitment, and exchange programs. The certificates issued by the ISB will bear the signatures of deans of all three institutions.

Kellogg and Wharton have infused the best and latest in

global management techniques and thinking into the ISB's academic purview by helping to design the curriculum and develop course material. Most importantly, faculty and researchers from these and other leading institutions teach regularly at the ISB and also participate in research at the school.

The governing board of the ISB includes some of the best-known companies from India and around the world. Among them, Reliance Industries Ltd, Bajaj Auto, Mahindra and Mahindra, the Godrej Group, Daimler Chrysler, McKinsey and Company, Morgan Stanley, Goldman Sachs, Royal Dutch Petroleum, Philips and General Electric. The ISB has been funded entirely by private corporations, foundations and individuals.

The school offers a full-time residential post-graduate management program for candidates. Each year, the school admits 220 students who come from very diverse backgrounds and have varied experience. The average ISB student possesses approximately five years of work experience. As many as 22% of this year's students have worked abroad.

It is little wonder then that Donald P. Jacobs, former Dean, Kellogg School, has said: "It's unlikely that we will see more than one other business school of the stature of the ISB launched in our lifetime."

B.K. RAMESH



*ISB students on their campus in Hyderabad*

designed by American Louis Kahn, who is widely acknowledged as one of the foremost architects of the late 20th century.

A 2003 independent task force, co-sponsored by the Council on Foreign Relations and the Asia Society, encouraged U.S. educational institutions to expand efforts to develop cooperative programs with Indian counterparts. The study reported: "American academic programs on India flourished in the 1950s and 1960s, but then fell off sharply during the next three decades. In part, this reflected the view that India had become relatively marginal for U.S. political and economic interests. Policy restrictions imposed by India on foreign scholars also reduced interest, and India programs and courses decreased in number and scope. In the past few years, the study of India has enjoyed a considerable revival. The desire of young Indian Americans to learn more about their heritage has been one reason. Another has been the perception that India was being neglected and warranted greater academic attention. Thus, in the past two years, George Washington University's Elliott School of International Affairs and the Johns Hopkins University's Nitze School of Advanced International Studies have both enhanced their South Asia programs, and the University of Pennsylvania has successfully completed a major fund-raising program to expand its Center for the Advanced Study of India. Indian Americans were major contributors to these efforts and to other programs being bolstered on campuses around the country. Think-tanks and research centers in Washington and

## EAST-WEST CENTER

# COOPERATIVE TIES

**THE CENTER PROMOTES COOPERATION TO FORGE A BETTER UNDERSTANDING AMONG THE NATIONS OF ASIA, THE PACIFIC AND THE U.S.**

A variety of American educational institutions interact with India. One of the most famous is the East-West Center (EWC) in Honolulu, Hawaii. An internationally recognized education and research organization established by the U.S. Congress in 1960 to strengthen relations and understanding among the nations of Asia, the Pacific and the U.S., the Center promotes cooperative study, training, dialogue and research.

■ More than 1,900 Indian professionals, researchers and students have participated in EWC programs since 1960. EWC alumni groups are found in New Delhi, Mumbai and Chennai. EWC President Charles Morrison and U.S. Ambassador to India David Mulford were guests at a recent EWC alumni gathering in New Delhi.

■ Many Indian students have earned degrees at the University of Hawaii in Honolulu and conducted research while on EWC scholarships.

■ Indians have participated recently in such EWC programs as the Jefferson Fellowships for journalists, the New Generation Seminar for young leaders and the Senior Policy Seminar for



*American journalists on an EWC fellowship in India*

foreign affairs and security officials.

■ The EWC's annual Asia Pacific Executive Forum was held in New Delhi in early 2004. Cosponsored by the Confederation of Indian Industry, the Forum brought executives, policymakers and EWC experts together to discuss "India in a Global and Regional Context."

■ Indian industrialist Ratan N. Tata, who has served on the 18-member international board which governs the EWC, was the first recipient of the "EWC Asia Pacific Community Building Award," which was given for his "vision and professional and personal accomplishments" which exemplify the Center's mission.



# A BEACON FOR ACADEMICS

**AIIS HAS BEEN RESPONSIBLE FOR FOSTERING SEVERAL GENERATIONS OF NEW SCHOLARS AND IS RECOGNIZED AS THE LEADING PROPONENT OF INDIAN STUDIES IN THE UNITED STATES.**

American knowledge of India is shaped by the American Institute of Indian Studies (AIIS), a consortium of universities and colleges in the United States at which scholars actively engage in teaching and research about India. The Institute was established in 1961 by a group of American scholars involved in programs of Indian studies at leading American universities, and its Indian headquarters is located in Gurgaon, outside of Delhi. For more than forty years, the Institute has provided fellowship support for senior American scholars and Ph.D. candidates. It has offered on-site training in Indian languages through the superb facilities of its Language Centers. And it has extended knowledge of Indian culture through its two research centers.

More than 3,500 scholars have received AIIS support. Their work has spanned fields ranging from anthropology to zoology. The fruits of their work have resulted in hundreds of books and thousands of articles and help form the basis of America's knowledge about India. Collections of some 2,700 books directly

or indirectly resulting from AIIS-sponsored research have been given to major libraries in India, including the National Library of India in Calcutta, the Nehru Memorial Museum and Library in Delhi and the Adyar Library in Chennai. The listing of these books forms the core of a widely used and highly respected volume, *India and America*, published by the Institute. In addition, AIIS houses extensive archives of photographs and slides of India's artistic and archaeological heritage as well as recordings of Indian music and films of traditional rituals.

AIIS scholars also have come together with colleagues from India and often from other countries as well at major international conferences. These conferences have resulted in the publication of selected papers that often form the core of knowledge in many disciplines. Nearly fifty books have been published directly by the Institute so far, and others are under consideration by an active Publications Committee. Through its programs of research and documentation, the Institute has endeavored to



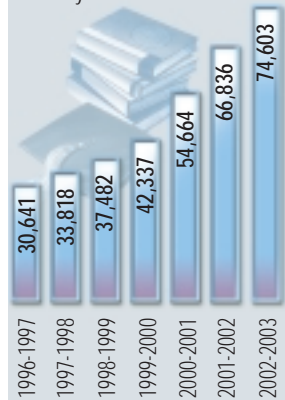
YASBANT NEGI/INDIA TODAY

achieve an accurate and probing knowledge of India's cultures, history, languages, and present-day dynamics. Through its own publications and those of its fellows, the Institute seeks to make the results of this research widely available and easily accessible to people in the United States, India and around the world. Already the impact has been considerable. The Institute has been directly responsible for fostering several generations of new scholars, and its senior fellows have returned to classrooms where they have taught tens of thousands of American college students.

Under the leadership of five presidents, the Institute has flourished and is today recognized as the leading proponent of Indian studies in the United States. Financial support for the Institute has come from a wide variety of sources. Originally, it was funded by private foundations. Prominent among them were the Ford, Mellon, Old Dominion, Carnegie, Rockefeller Foundation and the JDR 3rd Fund. Today the Institute receives primary funding from the Smithsonian Institution, the U.S. State Department, the Council of American Overseas Research Centers, the National Science Foundation, the National Endowment for the Humanities, and the U.S. Department of Education.

## INCREASING NUMBER OF INDIAN STUDENTS IN AMERICA

The number of Indian students in the U.S. has risen steadily in recent years



Source: IIE

elsewhere have also been showing substantially greater interest in South Asia. In the 1990s, few had regional specialists and their focus was almost entirely on nuclear nonproliferation and the threat of India-Pakistan conflict. Today, more than half a dozen of the leading centers have programs on India and South Asia that consider a broad range of political and economic, as well as strategic, issues. Hardly a week goes by without several South Asia programs on the Washington think-tank or public-interest circuit. Here too, Indian Americans have become an important source of financial backing."

Until about a decade ago, higher education in India had been largely state-funded and state-run. Though the Government is still the principal provider of higher education, significant contributions are now coming from the private sector. The past few years have also seen another trend emerging—a trend of U.S. institutions delivering their academic programs through U.S.-India institutional linkage programs. This is an attractive option for Indian students who want to earn an American degree at a much lower cost.

Another trend is that of the opening of offshore campuses of foreign colleges and universities in India and "twinning" arrangements

between Indian and U.S. universities. In a typical "twinning" course, a student spends the first two years of his graduate course in an Indian affiliate of a U.S. university while the last two are spent on the university's American campus.

The fact is that there is a global revolution currently taking place in higher education, a revolution in which the involvement and contribution of Indians cannot be minimized. What is missing from the bigger picture is the woeful lack of American students studying at Indian universities. In December 2002, speaking at the golden jubilee celebrations of the University Grants Commission, Prime Minister Atal Bihari Vajpayee asked for measures to be initiated to promote Indian institutions abroad so that the flow of students, which is now heavily skewed in favor of the U.S., is more balanced. But that, by any yardstick, is a long haul. Consider this: last year, there were nearly 75,000 Indian students enrolled in U.S. universities. During the same period, there were less than 300 Americans studying in Indian colleges. One reason is the limited number of courses offered. The Institute of International Education annually lists overseas study programs for U.S. students seeking to study abroad. The current directory lists just 34 programs for American students in India, while the figure for France is 483.

While other disincentives exist, the support for academic exchanges between institutions and individuals in the U.S. and India continues to increase. Greater bilateral cooperation in education fosters mutual understanding between the people of both countries and paves the way for young minds to receive valuable experiences that lay the foundation for strong ties and a brighter future.





Public Affairs Section  
Embassy of the United States of America  
New Delhi