VO TONG XUAN

Vo Tong Xuan came of age during a period of tumultuous change in Vietnam. The town of Chau Phu, his birthplace, is situated in An Giang Province of what was once the Colony of Cochin China, just one of five subdivisions of French Indochina. At the time of his birth in 1940, the French had occupied this part of Vietnam for more than seventy years. In September of that year, however, the very month he was born, the Imperial Japanese Army entered Indochina and subsequently occupied it in collaboration with French colonial officials—who, by virtue of their affiliation with the Nazi-linked Vichy regime in France were, for a time, allies of Japan.

Japan's arrival was the first in a series of turbulent events that formed the backdrop of Xuan's childhood and youth. Subsequent traumas included: the violent break between the French and the Japanese in early 1945; the defeat of Japan in August 1945, followed on 2 September by Ho Chi Minh's declaration of Vietnam's independence; the long and complicated power struggle among Vietnamese patriots during the First Indochina War, in which Ho Chi Minh's communist-led Vietminh ultimately thwarted France's attempt to reclaim its Indochinese colonies; the partition of Vietnam into communist and noncommunist zones at the Geneva Conference of 1954; and, finally, the bloody war pitting North against South and, in the South, neighbor against neighbor, until all Vietnam was ultimately united under the Northern communist regime in 1975.

In the face of such turmoil, Xuan's family sought security and social coherence within the Cao Dai religious sect. Cao Daiism was a new religion that combined elements of Confucianism, Daoism, and Catholicism with other eclectic elements. It had emerged in Saigon in 1925 and was uniquely Vietnamese, although among its saints was the French writer Victor Hugo. Under the authority of their "Pope," adherents of the Cao Dai movement formed strong social communities in the Mekong Delta. Xuan's maternal grandparents, who were originally from Gia Dinh, were middle-ranking officials of the sect. Some time in the late 1930s, they were assigned to the Cao Dai temple in the town of Chau Doc, near the Cambodian border in An Giang Province. Their daughter, Nguyen Thi Ni, sang in the choir and thus came to the attention of Vo Tong Luc, a local lawyer's clerk and fellow Cao Dai member. The two young people courted and married. Vo Tong Xuan, born on 6 September 1940, was

their second child but the first to survive childbirth. Five siblings followed.

Vo Tong Luc was a literate man whose work, Xuan says, involved composing petitions to judges and officials "on behalf of the oppressed." For a time, he and the family remained in Chau Doc. As a little boy, Xuan remembers going fishing with him in a sampan in the months of August and September, when the Mekong swelled to the very edge of the city. At some point, however, Luc left his job in the lawyer's office and ventured to Saigon to work on the docks. At another, he was arrested by the Japanese and held in the infamous French jail on rue Catinat in Saigon, allegedly for participating in anti-Japanese intrigues. When the war ended, Xuan's father became a full-time officer in the Cao Dai army, one of three private armies operating in the Mekong Delta. (The Hoa Hao, a religious sect, and the Binh Xuyen, a highly disciplined crime organization, also maintained private armies.)

The family now moved to Tay Ninh, site of army headquarters and the Cao Dai Holy See. There Vo Tong Luc built a house on "the first and last piece of property that we had," Xuan says. But otherwise, he devoted little time to the family. As an army officer serving with a religious sect, he was a fitful provider who left Xuan's mother and grandmother to provide for the family as best they could. Xuan helped his grandmother by picking insects off of the tender sprouts in her backyard vegetable garden. With his brothers and sisters, he collected wild mushrooms from the nearby woods.

Xuan learned early to adjust to change as well as to adversity. As his father was posted first to one place then another, the family also moved. From Tay Ninh, they shifted briefly to Saigon. Here Xuan entered grade one in 1948. The next two years were spent in Soc Trang, some 240 kilometers southwest of Saigon, where he completed grades two and three. Then back to Tay Ninh for grades four through six in a Cao Dai school in which the day began with a succession of drumbeats and a hymn. (Here Xuan encountered a teacher who required bright students like himself to punish those who made mistakes—including once, in Xuan's case, a very pretty girl. "If you don't beat her," the teacher said, "I'll have to give you a low mark." Xuan resolved the dilemma by beating her lightly and apologizing profusely afterwards.)

When Ngo Dinh Diem became premier of the newly created South Vietnam in 1954, he suppressed the private armies and incorporated them into his national forces. Sect officers were summarily dismissed, including Xuan's father. Vo Tong Luc responded to this new state of affairs by turning to a life of religious devotion. Losing himself within the temple walls, he seemed to have abandoned all serious efforts to support his family. "When he was dismissed," Xuan remembers painfully, "we had nothing."

Xuan was fifteen at the time and the family was once again in Saigon. Because he was a veteran, Vo Tong Luc was given a license to operate a newsstand. Xuan decided to make use of it. Each morning he rose at 4:00 A.M. and pedaled the family bicycle to the newspaper distributors. By 4:45, he was back at the house where everybody rose to help fold the news sheets into proper newspapers. Then his oldest sister carried one bunch to a popular breakfast noodle shop, while he and his brother made the rounds hawking newspapers at city bus stations. At 6:30, everyone returned home and surrendered the morning's earnings to their mother before bathing, changing clothes, and going off to school. Twice a week, the daily round started even earlier. On Thursdays, Xuan had to rise at 2:00 A.M. to line up for a popular women's magazine. It was the same on Sundays, when the movie magazines came off the presses.

Following three years in Tien Long Middle School, Xuan won a place for himself in Saigon's prestigious Cao Thang Technical High School, an elite public school open only through examination. When his mother returned to Tay Ninh, he lodged with relatives and friends of his father in Saigon so that he could carry on at Cao Thang. For a year or more, he stayed with an uncle who obliged him, in return for his keep, to guard his precious automobile. The family lived in a narrow lane, too narrow for the car, which was parked at the lane entrance. Xuan slept each night in the empty vehicle, ungrudgingly. He discovered that it was the perfect place to practice his English pronunciation without bothering anyone or arousing ridicule. In other households, Xuan earned his keep by tutoring the children in mathematics, physics, and chemistry—subjects in which he was adept. For a time, too, he reentered the newspaper business, buying directly from the publishers and selling in Cholon, Saigon's Chinatown. (Readers in Cholon, he learned, were especially alert to political news about the beleaguered government of Ngo Dinh Diem, which was beginning to teeter during Xuan's high school years.)

Xuan excelled in school from the outset. He was bright, to be sure, but also diligent. After he began learning French in grade six, for example, he discovered that French-language science and mathematics textbooks were especially good, with useful exercises at the end of each chapter. He saved his money to buy used copies from the local bookstalls and strove to solve every problem, often competing with his friend Phan Tan Tai. When the two of them could not figure something out, they went to their teachers for help—all this above and beyond the required lessons. While attending Cao Thang Technical High School, Xuan also joined an informal English-language group run by an American who worked at the United States Embassy. Every Thursday and Sunday evenings, they gathered at his apartment to read aloud and discuss the news together.

Given Xuan's hard work and many successes in school, it came as a shock when he failed the national examination for high school

graduation. To this day he is not sure why he failed, but the upshot was an extra year of hard study and the postponement of his dream to win a scholarship to study abroad. Xuan landed a job with the Civil Aviation Department, which needed someone with drafting skills to help design a new radio tower for the Saigon airport. Once on the job, however, the director (corruptly) exempted him from his regular assignment so that Xuan could tutor his daughter—for the very same examinations that Xuan himself was preparing to take. This time around, Xuan passed, as did his pupil. Indeed, 1961 was a banner year for Xuan. In addition to earning his high school diploma, he also won a scholarship to study at the University of the Philippines' College of Agriculture at Los Baños*.

For talented young Vietnamese like Xuan, the Philippines was not a destination of first choice. France, Canada, the United States—these were the favored pilgrimage sites for students seeking advanced degrees. But scholarships to such places were out of reach for Xuan because, he says, bribes were needed to gain access to the qualifying examinations. Practically speaking, only the rich could apply. The Philippine scholarship cost nothing to apply for and it was easier to win, since fewer people competed for it. Xuan astutely seized the opportunity and came in number two in the qualifying examinations. As it happened, two spots were open.

Elation turned quickly to anxiety. Xuan's scholarship paid for tuition and expenses, but it did not cover transportation or the cost of new clothes. Xuan's father frantically canvassed his friends and managed to borrow enough money to pay for a one-way ticket to Manila and a new dress jacket—Xuan's first. At a party hosted by the parents of his fellow scholarship winner, Xuan's relatives berated his father, saying, "Why are you sending your son to that backward place?" When they asked what field young Xuan would be taking up, he dissembled, "I don't know. Some kind of engineering." Agriculture was just not impressive enough to mention.

Xuan was undaunted by all this and soon departed for the Philippines. Upon arriving in Los Baños, he learned that he was the recipient of a Rockefeller Foundation Scholarship, which provided a generous allowance of two hundred pesos a month. His air ticket would also be reimbursed. This unexpected boon allowed him to pay off his father's debts at home and to anticipate with greater confidence the arrival in the Philippines of his fiancée, Miss Bui Thi Ngoc-Le.

Le had been a friend and classmate of Xuan's at Tien Long Middle School in Saigon. Later, she and her mother settled in a neighborhood near Xuan's high school. The two young people courted and, in the year prior to Xuan's departure for the Philippines, Xuan and Le's parents blessed their engagement. (Xuan was twenty at the time.) Le's mother was a businesswoman who dealt in lumber and furniture. Her father had died during the First Indochina War serving

with Ho Chi Minh's nationalist movement, the Vietminh. (Because of the Vietminh's links to the Communist Party, which was illegal in South Vietnam, this latter fact was a secret that Le's mother held closely until the Vietnam War ended years later.)

In March 1962, less than a year after Xuan embarked on his studies in the Philippines, Le joined him there. The Vietnamese ambassador performed the wedding ceremony in Manila. Duly married, the couple began their life together in Los Baños, a lush, bucolic university town a few hours southeast of Manila. Their first home was Xuan's student room in a local boarding house.

By this time, Xuan was thoroughly acclimatized in the Philippines. When he first arrived, he stuck closely to his fellow Vietnamese scholar who had been a translator at the U.S. embassy in Saigon and whose English was superior to Xuan's. Initially, Xuan fell into the habit of letting his companion do the talking, but he quickly realized this was a mistake. Breaking away, he cultivated friends among Filipinos, Pakistanis, Sri Lankans, and other English-speaking foreign students. With his Rockefeller scholarship money, he bought a radio and began listening to English-language broadcasts. This worked wonders and in a few months' time, Xuan's English became comfortable and confident.

Although Xuan was not really aware of it when he first went to the Philippines, the University of the Philippines' College of Agriculture was one of the finest agriculture schools in Asia. With external funding from the Rockefeller Foundation and U.S. foreign aid and close ties to Cornell University in the United States, the College offered excellent instruction in agricultural science and was itself the site of groundbreaking research. Foreign students flocked to its courses and Xuan found himself amid a student community of startling variety. Choosing agricultural chemistry as his major field, he studied diligently and, over the next several years, built the academic foundations for his future career. At the same time, he plunged enthusiastically into the full range of university life.

Xuan quickly learned the benefits of volunteering. By writing stories for the school newspaper, the *Aggie Green and Gold*, he improved his English. By serving as the newspaper's photographer, he learned how to take photographs professionally, and how to develop and print them—all at the school's expense. (Xuan's Pentax was his second Rockefeller purchase.) By being on hand to photograph official university functions, he became friendly with school officials and staff members and made himself indispensable. By leading the international students' association, he met hundreds of fellow students from Japan, Korea, India, Pakistan, Thailand, Indonesia, and elsewhere and became a link between them and the school administration. And by volunteering to make broadcasts about Vietnamese culture for the Philippine Broadcasting Service, he learned how to plan and execute effective radio programs. Xuan was paid little or

nothing for these activities, but each one added to his repertoire of skills and broadened his social realm.

In the midst of this busy campus life, Xuan and Le started a family. When their son, Vo Tong Anh, was born in August 1963, the family moved to a larger room in a house in Los Baños, near one of the town's famous hot spring resorts. A daughter, Vo Tong Ngoc-Diem, was born in December of the following year. Through his work as all-around photographer, Xuan had come to know the college dean, Dr. Dioscoro Umali. It was Umali who arranged for Xuan and his growing family to move into a new Cornell-UP College of Agriculture joint housing project. Theirs was one of the smallest houses, but it was heaven sent. Xuan and Le lived happily there amid American and Filipino neighbors for years.

Xuan earned his Bachelor of Science degree in agricultural chemistry in 1966. This marked the end of his eligibility for the Rockefeller scholarship. He was advised to go home "and do something there"—as one of his teachers bluntly put it. But Xuan felt that a bachelor's degree alone was insufficient to make an impact in Vietnam. Moreover, the war in South Vietnam was escalating. He therefore applied to pursue a master's degree at the College with the understanding that he would finance it himself, somehow. Among the subfields that he had been studying was sugar technology, a specialty of the Department of Agricultural Chemistry. His adviser, Professor Ramon Samaniego, helped him approach the Yulo Sugar Central with a proposal for a grant. Xuan's idea was to use certain biochemical processes to clean and prepare bagasse—the fibrous byproduct of sugarcane milling—for making paper. Yulo agreed and Xuan was thus able to finance the first year of his graduate education.

Xuan used the financial cushion provided by the sugar company to prepare for harder times ahead. Calling upon his years of experience as the university's volunteer photographer, he started a business. At first, he and Le simply developed, enlarged, and printed pictures taken by friends and fellow students. Using their bathroom as a makeshift darkroom, and working overnight, they could produce nice prints quickly and cheaply. Their little business thrived. In time, Xuan branched out into commercial photography, shooting weddings, funerals, student portraits, and scientific subjects. Weddings were lucrative. Arriving at the bride's house the night before the wedding, he and Le would be on hand the next morning to photograph her as she "awoke," prepared her face and hair, dressed for the ceremony, and walked to the awaiting car escorted by her mother and father. Then, Xuan says, "We ran to the church and covered everything, then to the reception, and then back to the house for the opening of the gifts. A few days later, we presented an album to the couple and had enough money to live on for one week."

As a graduate student, Xuan developed his knowledge of food chemistry and food processing. His master's thesis grew from his work on pulp production from bagasse at the Yulo sugar company. But when he discussed the prospects of Vietnam's sugar industry with students and officials visiting from Vietnam, they told him, "It is better to go into rice." This advice was reinforced in a letter he received from the rector of the University of Cantho, which was established in 1968 in the heart of the Mekong Delta. Word of Xuan's success at Los Baños had traveled back to Vietnam, the rector said. He wanted Xuan to know that if he knew more about rice, he might be very useful to the university.

Among the many advantages of being at the College of Agriculture was the fact that the International Rice Research Institute (IRRI)* was right next door. IRRI was established in 1960 with Rockefeller and Ford Foundation funding. In a decade's time, it became the most important center of rice-related research in the world and the scientific engine of Asia's Green Revolution. Upon completing his master's degree, Xuan approached Dr. Robert Chandler, IRRI's director general for a job. Chandler explained that positions at IRRI were open only upon government recommendation. As a private citizen, he said, Xuan was not eligible. But Xuan explained that he could support himself through photography. "What I need is knowledge," he said. Chandler referred him to Vernon Ross, head of the department of rice production, training, and applied research, who took him in. Together, they designed a program to introduce Xuan to every phase of rice production, "from plowing, to harrowing, to counting stem borers," he says. Soon he was up to his knees in IRRI's vast experimental rice paddies.

Among the materials Xuan was given to study was a series of lessons for IRRI's four-month-long training program in rice production, which it offered regularly to participants from all over Asia. They were highly technical and, as Xuan learned from the Vietnamese participants, the lessons were going completely over their heads. He had an idea. A few years back, Xuan had worked as translator in a skills development program for Vietnamese malaria eradication officers. He had observed carefully as experts from the U.S. Department of Health, Education, and Welfare taught the participants, step-by-step, how to train people.

Xuan now approached Ross with a proposition. "Let me try to rewrite these lessons in the form of training modules," he said. With Ross's go-ahead, he prepared the first five lessons, which he presented to the current trainees, complete with new drawings and slides. The training was such a success that Ross offered Xuan a fellowship to remain longer at IRRI and transform the entire training manual. Xuan threw himself into this project as he continued his own rice-related research in soil chemistry and rice nutrition.

In 1970, IRRI published Xuan's *A Training Manual on Rice Production.* "My very first publication," he remembers proudly. Translations followed, and edition after edition. The manual is still being used at IRRI.

Xuan now contemplated returning home. He had lived in the Philippines for ten years. And he had established himself, so that, had he wanted to, he could have stayed on at IRRI or pursued his Ph.D. anywhere abroad. This is what his parents urged him to do and, truth to tell, also what his wife Le wanted. Although modest, their life in Los Baños was comfortable and safe. In Vietnam, the war raged on with no end in sight. Le feared that Xuan would be drafted into the army and she might be left alone with the children. His two younger brothers were already in the armed forces. And savvy young men with options, both Xuan and Le knew, were opting to leave the country. Yet Xuan felt a pull to go home. He often thought of the new university at Cantho and of the rector's letter, which, in so many words, had invited him to join the faculty. Others at the university had also written him. He struggled with his decision: "Everybody is leaving Vietnam. Should I also stay here, or go back?"

Xuan and Le agonized over their future and decided, finally, "We should go." In a Filipino department store chocked full of consumer goods, they shopped for gifts to take home. Xuan remembers holding up first one item, then another, as they debated what to take to this brother, that sister, the neighbors. And he remembers thinking, "I just can't bring everything home." But if he did not, he asked himself, how would his family and friends ever be able to enjoy such things? And then he thought about all of Vietnam, and about all the people there who yearned for prosperity. *Who is going to bring them prosperity?* he thought. Then it struck him. "Instead of waiting for others to help us, we Vietnamese should help ourselves." This small epiphany girded Xuan's commitment and soon he and the family were back in Vietnam.

As Le feared, Xuan was promptly drafted into the army. However, the rector of the University of Cantho was so eager for him to assume his duties there that he petitioned the Ministry of Defense to have his military service deferred. Xuan was an active-duty soldier for only nine weeks, after which he was released to join the faculty at Cantho.

Where agriculture was concerned, Xuan quickly learned, the new university was starting virtually from scratch. In an early meeting with his dean, Xuan suggested that Cantho adopt some courses from the curriculum of the Philippine College of Agriculture. This was a fine idea, the dean agreed. "But who will teach them?" Xuan rashly volunteered. He soon found himself teaching rice science, soil fertility, field plot techniques, agricultural extension, and technical English—all at once. But a practical problem soon arose: there was no data on Vietnam. For all his years studying agriculture in Los Baños, Xuan still lacked data specific to the rice varieties and grow-

ing conditions in Vietnam. This he would have to generate himself. To do so, he arranged to rent a small plot of land outside Cantho to begin his scientific rice research. By 1972, he had set up a collaborative arrangement with IRRI whereby the institute provided seeds and Xuan in turn shared his local data with the rice scientists in Los Baños.

Xuan's monthly salary at the university was pitifully low—just enough, he says, to support his family for one week. So when he was approached by an agricultural chemical company to become its consulting technical director, he promptly agreed. Xuan was familiar with the Ciba-Geigy company and its popular pesticide Basudin from his IRRI days. In fact, it was the Ciba-Geigy representative in the Philippines who recommended Xuan to the company's Vietnamese joint-venture partner, Thanh Son Agrochemical Company.

Since pesticides were a necessity for growing the new "miracle" strains of rice developed at IRRI, pesticide-producing companies like Ciba-Geigy played a critical role in increasing Asia's food supply. But in becoming Thanh Son company's consulting technical director, Xuan remembers making the point, "We should not live on the back of the farmer. The company should grow together with the farmer." He therefore worked to improve Thanh Son's advisory services. He placed an agent in every province, distributed useful how-to leaflets to farmers, and set up scattered demonstration sites where farmers could see how new rice strains should be grown and with what results. As their know-how increased, Xuan argued, farmers would better appreciate the benefits of Ciba-Geigy products.

Xuan's work for Ciba-Geigy's Vietnamese affiliate complemented his scientific research. For one thing, the company funded applied agricultural research at the university. For another, through his team of provincial representatives, Xuan was able to monitor agricultural data and rice-growing patterns in a vast region of South Vietnam. From 1972 on, he says, "I knew the situation in the whole delta."

Thanh Son company paid Xuan a monthly salary five times larger than what he received from the university, besides a car and a house in Saigon. The latter permitted Le and the children to live safely in the capital city. And of course the extra income was an enormous practical boon. To do justice to both jobs, however, Xuan had to adjust to a frantic schedule of work and travel. Every Monday morning at 4:00 A.M., he left the family home in Saigon and drove alone to Cantho—a four-hour trip through the verdant river-laced rice lands of the Mekong Delta, including two ferry crossings. All-day Monday and Tuesday, he was busy in the classrooms, labs, and test fields of Cantho. Late Tuesday afternoon, he sped back to Saigon so that Wednesday he could report to the Thanh Son company office. Early Thursday morning found him again on the road to Cantho, where he taught all-day Thursday and Friday. But Friday night, he hurried back to Saigon so that he could devote Saturday to the company.

In the midst of this exhausting routine, in January 1973, Xuan and Le celebrated the birth of their third child, a daughter, Vo Tong Thanh-Phuong.

In 1973, Xuan took on yet another large responsibility. At the time, the United States Agency for International Development (USAID) in Vietnam was assisting in several projects of the Committee for Coordination of Investigations of the Lower Mekong Basin. One of these included a research component concerning the management of heavy clay delta soil for multiple cropping. What was needed was a research station. Xuan's friends at USAID recommended Cantho and Xuan himself was named project leader. In addition to providing generous funds for field research, the two-year project brought a new laboratory to the university plus a pumping station and other facilities for irrigation-related experiments. It also increased Xuan's income by another substantial amount, which caused some jealousy among his university colleagues. "I was the guy getting three salaries," he says unapologetically. After all, he says, the work needed to be done successfully—"They had to find someone who could *do* it."

Although Xuan had lived abroad for many years, it did not take him long to discover South Vietnam's favorite radio program. "The Family of Uncle Tam" was broadcast every morning between 5:00 and 5:20 A.M., just as millions of farmers were rising and bathing and heating up the previous night's rice for breakfast. The program was a melodrama about the daily trials of a rural family and its neighbors, invoking character types familiar to and beloved by the Vietnamese. Although the story carried a heavy load of official propaganda—one son in Uncle Tam's family served faithfully in the army of South Vietnam—people listened with pleasure regardless of their political loyalties. After tuning in for a while, Xuan had an inspiration. Why not use "Uncle Tam" to relate useful information to farmers? The show's director was reluctant at first; it appeared that "Uncle Tam" was wholly funded by the government's psychological warfare agency. But Xuan persuaded him to try the idea and began working with the actors. Adept improvisors, they were soon inventing ways to slip Xuan's lessons about, say, pest-resistant rice strains, into the dialogue. "It was very, very popular," recalls Xuan. In getting information to farmers, "We did much better than the Ministry of Agriculture."

Xuan's research and teaching, his work for Thanh Son company/Ciba-Geigy, his collaboration with USAID, his contributions to "Uncle Tam's Family"—these were occurring within an increasingly unstable political environment. By the early 1970s, the government of South Vietnam was holding on precariously even as its enemies advanced ever deeper into the body of the state. The country had been at war for many years and the whole society was mobilized for one side or the other. Hundreds of thousands of foreign soldiers—

mostly American but also Thai and South Korean allies of South Vietnam—had come and gone, leaving untold physical destruction and misery in their wake. They had failed to save the southern regime and, after 1973, it was left to stand alone. By this time, the government's political opponents in the south, organized as the Provisional Revolutionary Government (PRG) since 1969, had infiltrated most vital organs of the country and, in alliance with political cadres and soldiers from North Vietnam, controlled vast sections of the countryside—although not yet the major towns and cities.

Cantho itself was still relatively safe within the Saigon government's fold, but by 1973 the war had come to within twenty kilometers of the city. The rice paddies beyond were effectively controlled by forces of the PRG, the Vietcong. From the classrooms and laboratories of the university, Xuan could hear bombs and mortar shells exploding in contested areas nearby. He knew, or supposed, that some of his cooperating farmers in outlying field sites were Vietcong partisans. And he knew that certain chronic troublemakers among the students were also on "the other side." So even as he focused obsessively on his work, Xuan could not escape the war, nor remain oblivious to the shifting sands of power in his country.

He was in a quandary. As a teacher at the university, Xuan was officially employed by the government of South Vietnam. As a consultant for Thanh Son company, he was active in the country's capitalist economy. And as project leader of a USAID-funded experiment station, he had close and friendly links with South Vietnam's most powerful ally, the United States. But his sympathies were mixed. The South Vietnamese government, he concluded, "was like a rotting house—everyone was corrupted." He watched helplessly as huge amounts of USAID funds lined the pockets of Saigon officials. Moreover, during his long idyll in the Philippines, Xuan had become friendly with an American who passionately disagreed with his own government's military support for South Vietnam. Louis Wolfe, of the American Friends Service Committee (a Quaker organization), gave him materials that depicted Ho Chi Minh and Vietnam's communist movement in a positive and idealistic light. This gave Xuan a useful perspective with which to balance the stridently anticommunist views of the Saigon government. As a result, he did not have an altogether negative view of "the other side."

In addition, Xuan frankly sympathized with the protesting students at his university. Many of their grievances, he felt, "were just." On one occasion, when the rector summoned the police to arrest students suspected of being Vietcong, Xuan and Le hid one of them in the trunk of the company car. Afterwards, Xuan and two other professors pleaded with the police chief for the release of three other students who had been caught in the dragnet. They argued, over the rector's furious objections (and unsuccessfully, as it turned

out) that the students would miss important examinations if they were in jail.

On 23 October 1974, the war came horrifyingly close. As Xuan was driving with a student from Cantho to Saigon late one afternoon, Vietcong snipers ambushed his car. He supposes they mistook it for a government jeep. Seeing flashes of light ahead, Xuan instinctively pulled to the side, where he and his student clambered into a roadside ditch as gunshots sounded around them. A woman farmer who was traveling with them, and sitting in the back seat, was hit; she remained trapped in the car. Xuan and the student kept to the ditch for about half an hour, until several trucks passed safely by. Then they rushed their wounded companion to a hospital for treatment. The next day, Xuan counted seven bullet holes in his car.

Aside from his USAID-funded project, Xuan had also been collaborating with some visiting Japanese agriculture professors sponsored by the Japanese Ministry of Education. One of them was Dr. Jun Inouye, a plant physiologist who was interested in traditional Vietnamese rice cultivation. He and Xuan conducted several studies together, the results of which were published in Japan. Inouye then suggested that Xuan's contributions to the project were nearly sufficient for him to qualify for a doctorate. So why not complete a few more experiments and stand for the degree? With Inouye's help, Xuan was awarded a fellowship to complete a doctoral dissertation under Professor Kenji Ito of Kyushu University. He took a leave of absence from the university and the Thanh Son company and departed for Japan in November 1974, not long after his harrowing brush with death. The following March, not four months later, he successfully defended his dissertation.

During Xuan's brief stay in Japan, the situation in South Vietnam deteriorated badly. The Provisional Revolutionary Government and North Vietnam intensified their assault on the beleaguered government. Le and the children had stayed behind in Saigon and Xuan kept in touch with them by telephone as he witnessed the incipient transformation of his country on Japanese television. Sometime in February 1975, he noticed that Japanese newscasters had abandoned the term Vietcong in favor of "the liberation forces"—an accurate harbinger of things to come. He arrived home on 2 April and waited with Le in Saigon for the onslaught to end. The final crisis came on 30 April when PRG and Northern forces entered the city. As last-ditch battles occurred in the midst of negotiations, Xuan, Le, and the children followed events over the radio. Frightened, they gathered in the bedroom and huddled under a pile of bedding for fear of bombs and exploding shells until the surrender was announced at last and all was quiet.

With this, all Vietnam came under the de facto control of the Vietnamese Communist Party and its administrative organs. (Offi-

cially, North and South Vietnam were united to form the Socialist Republic of Vietnam in July 1976.)

The new provisional government immediately announced that everyone who had been working under the old regime was required to register at their place of employment. Xuan, of course, had two places of employment. He and Le talked things over and decided that it would be prudent to register at the university. Since Xuan's fate was uncertain under the new regime, Le insisted that she and the children accompany him. On the first of May, the family piled into the company car and drove south to Cantho.

During the initial days of transition, looting presented the greatest threat to the university. Xuan was appalled to see that the compound where some Americans had lived had been stripped bare. "Nothing was left. Only the floor." But teachers and students had joined to stand guard over the university's precious laboratories. When the dust settled, he says, "our university was intact. We lost only one bag of fertilizer."

The university was occupied by a platoon of soldiers and twelve political officers. Faculty members waited warily to see what the new dispensation might bring. Some of Xuan's university colleagues had been officers in the South Vietnamese Army; they, and former government officials, were politically suspect and were targeted for reeducation camps. Although Xuan had only been a "second class" soldier, his ties to USAID led to suspicions that he might be a spy for the American Central Intelligence Agency. So his situation was also problematic. Fortunately, Xuan's reputation at the university was good. Among those eager to vouch for him were his students, including those he had helped at great risk and who now surfaced among the political victors.

While the university's new leaders deliberated his fate, Xuan enjoyed a two-month holiday. He looks back on May and June of 1975 as his "happiest months." Shorn of all duties, he spent his days blissfully tending his fields and plots with his assistants. At noon, he had a box lunch and a nap in the office. At night, he had dinner with the family, then watched television. TV was available for only two and a half hours and the family watched every minute. Then he went to sleep. "The next day, again the same," he remembers. It was liberating. "My mind was free, very free." After two months, Xuan says, "the new leaders knew who was who." He was spared reeducation camp. Instead, he was named assistant to the dean of agriculture.

Xuan assumed his new post amid radical changes at the university. To begin with, everyone was required to attend reorientation lessons in which Communist Party cadres explained the essentials of Marxism and Leninism. Participants learned the correct history of Vietnam and how the new governing system would operate. Many new faculty members arrived from North Vietnam or from years in

the underground. (Xuan noticed that they were avid backyard gardeners, a good sign.) At the same time, some of Xuan's former colleagues left the university and a few, unable to cope, fled to exile abroad.

For himself, Xuan was philosophically well disposed toward the new regime. He identified with its idealism and harbored hopes that it might truly offer a better alternative to the corrupt governments of the past.

Xuan was immediately impressed with the university's new head. Soon after the reorientation meetings were over, Pham Son Khai gathered the faculty together and addressed them frankly. Xuan remembers the meeting well. "Some of you are doctors. Many have master's degrees or are engineers. But I am only grade seven," he began. "I do not have what you have. However, I have been appointed by the central government to come here to lead this university. What I have is more than thirty years in the system. My political standing is high." So, let's work together, he said. When it comes to technical matters, he told them, he would respect their expertise. But if political problems arose, he said, "I will be the one to take care of that."

Xuan found that Khai was true to his word and in the months and years to come—as Khai rose to become university rector and party secretary—the two men established a respectful and fruitful working relationship.

It was to Khai that Xuan turned when, early in the new regime, he discovered that some of the university's new occupiers were stealing equipment and materials from the science laboratories. One of them, for example, stole the desiccator—a glass jar used to keep laboratory glassware and chemicals dry—to store his rice in. Another used the lab's glucose sugar in his family kitchen. This behavior did not comport with the idealism that Xuan hoped for in the country's new leaders. Khai told him not to be so idealistic. "They are also human beings. They also eat like you and go to the toilet like you," he said. "They are not saints." Down-to-earth dialogues like this helped Xuan temper his expectations with a strong dose of realism.

When it came to the curriculum, realism was sorely needed. Xuan's new bosses were naturally eager to compare Cantho's courses with those being taught in universities in the long-socialist North. There were many differences. When they came to Xuan's course on agricultural extension, for example, they asked, "What is this?"

"This is so that agricultural graduates will know how to approach farmers," Xuan replied, "to explain complex technology in simple terms. You have to work with every farmer."

"Oh, we don't need this," they said. "Under our system, we just order the team leader of the cooperative or the manager of the state farm and they do everything."

Agricultural extension, remembers Xuan, was "very painfully rubbed off the curriculum.'

Xuan learned not to argue in the face of setbacks like these. Instead, he found allies among the cadres and patiently introduced them to his methods and results. Little by little, he made the case for agricultural research and showed how university-designed experiments could lead to practical boons for farmers. Shrewdly, he shared credit for his breakthroughs with the political leaders. If new ideas came from them, he learned, they were more readily accepted. Pham Son Khai was his main ally. When, in 1977, Xuan introduced him to brown planthopper-resistant strains of rice in his Cantho laboratory, Khai immediately supported him against party naysayers. His political authority helped win acceptance for the new varieties across the delta.

One of Xuan's great worries during this period was that virtually everyone who now occupied key posts, including those who administered food production plans, was a former military or political officer. They knew almost nothing about agriculture. To educate them, he began a weekly thirty-minute television show called "The Agricultural Technology Program." He was well aware that, in government offices, cadres gathered eagerly around television sets whenever there was something to watch. In villages, too, poorer farmers watched TV sets in the homes of their better-off neighbors. In this way, Xuan began teaching officials and farmers alike new techniques in high-yield rice production.

In North Vietnam, agriculture had been subject to socialist direction since the division of the country in 1954. Authorities initiated the first phase of collectivization in 1956 with the creation of work-exchange teams. In subsequent years, the North advanced in stages to a system of Soviet-style collective farms in which households pooled both land and farming implements and worked under a unified management. In 1976, Vietnam's Communist Party formally urged its leaders in former South Vietnam to initiate collectivization of the newly won territories. This was accomplished relatively quickly in the narrow plains of the central provinces and in the highlands. But in the rice-rich Mekong Delta, farmers resisted it and agriculture continued to be organized on a family-farm or household basis.

Even so, the party imposed radical changes. Farm lands, some of which had been redistributed to small farmers in 1970, were redistributed again. The government now allocated land to households based on family size and land quality. Farming plots were no longer owned, they were assigned. And they were often reassigned at the whim of local leaders. When private ownership of tractors, rototillers, threshers, pumps, and draft animals was abolished, farmers were obligated to sell their tools and water buffaloes to the state for less

than they were really worth. Draft power in the Delta plummeted. Xuan observed that these policies left farmers with barely enough food, yet the Mekong Delta was potentially one of the most productive regions in Asia.

Rice was part of the problem, he decided. Eaten morning, noon, and night, rice was Vietnam's essential staple, its staff of life. Throughout the country's history, abundance in rice had been equated with abundance itself. Communist Party cadres shared this view and drove farmers in areas under their jurisdiction to produce as much rice as possible.

In the immediate postwar years, when food shortages threatened Vietnam's tenuous social order, this policy made sense. But as a scientist, Xuan knew that in the long run, such a policy was wrongheaded. True, vast stretches of land in the fertile Mekong Delta were perfect for growing rice. Because of high soil acidity, however, vast areas in the South were not. In such areas, Melaleuca tree forests flourished naturally, providing firewood and construction materials for peasant families nearby. In the years following 1975, however, the party-driven quest for more rice production led farmers to strip the land of forests and build paddy fields in their stead. In establishing New Economic Zones for the landless poor (and former enemies), the government also opened new lands for cultivation in areas with soils similarly unsuited to rice. The low harvests that resulted from these mistakes discouraged farmers and contributed to the country's generally low agricultural productivity.

On the redistribution of agricultural land, however, Xuan was of one mind with his country's new leaders. In a country where the majority of people had been landless, he says, this was a "beautiful thing." But he suspected that some of the Party's innovations in the *structure* of agricultural production, such as it obsession with rice, were at cross-purposes with the aim of achieving prosperity.

To test his hypothesis, in 1979 Xuan quietly embarked on an experiment to explore an alternative to the requirement that farmers sell all their grain to the state. Working with production Group Nine of Lung Den hamlet in the Ke Sach District of Cantho Province, he began to promote a simple contract system based on the secret practices of some local farmers. In most respects, the arrangements between the farming households of Group Nine and the authorities were the same as everyone else's. Farm lots were arbitrarily assigned and inputs such as seeds, pesticides, fertilizer, and irrigation, along with farm implements, were provided through state-controlled mechanisms. The production group, for its part, provided all the labor. In Xuan's experiment, however, members of Lung Den's Group Nine signed contracts promising to sell a specified amount of rice to the state. They were free to sell on the open market any rice that they produced above and beyond the contracted amount. In other

words, Xuan's scheme gave farmers an economic incentive to grow extra rice.

Xuan designed his experiment so that it would be invisible to district-level authorities. Technically speaking, it was illegal. (Indeed, the innovative provincial party chief who first introduced a version of this system in North Vietnam during the 1960s was subjected to house arrest. Now, however, experiments similar to Xuan's were being conducted in at least one northern district.) For three rice cycles, he and his team carefully monitored the impact of the new incentive. In each cycle, Group Nine farmers outperformed their peers. Not only did they yield higher consignments of rice to the state, they also earned higher family incomes. With the data firmly in hand, Xuan began sharing the results of his experiment with administrators who consulted him about raising rice production in their districts and provinces. "Why don't you have a look at Production Group Nine?" he would say. In this way, he drew attention to his innovation, working cautiously upwards from lower-tier officials to higher ones. Then, in September 1980, Xuan unveiled Production Group Nine's secret on his advice-to-farmers television program. The contract system was soon under discussion at the highest levels.

This breakthrough was only one of several events that made 1980 a threshold year for Xuan. By this time, Xuan's work at the university had attracted the attention of Vietnam's long-time minister of defense and then deputy prime minister for science and technology, General Vo Nguyen Giap. The two men had become acquainted attending various scientific conferences. As an early member of the Vietnamese Communist Party and renowned mastermind of the defeat by Vietnam's revolutionary forces of French, American, and US-allied South Vietnamese armies, General Giap was a very influential patron. When Xuan was invited to attend the celebration in the Philippines of IRRI's twentieth anniversary, along with Vietnam's minister of agriculture (Nguyen Ngoc Triu), he wrote to Giap explaining IRRI's importance. Giap issued an order permitting him to go—overriding the advice of his university's new rector and the provincial police chief, who evidently feared that Xuan might defect. It was his first trip outside Vietnam since 1975.

After the IRRI meetings, Xuan returned to Cantho just in time to be named full professor of agronomy by the country's prime minister. This, too, was General Giap's doing. Until 1980, there were no professorships in socialist Vietnam. In that year, however, the ministry of education resurrected faculty ranks. Following an elaborate evaluation process involving tier after tier of committees, Xuan's name was advanced to the prime minister's office as a candidate for assistant professor. (Only four instructors from Cantho were considered.) When the nomination came to Deputy Prime Minister Giap's attention, he insisted that Xuan be named a full professor instead.

Xuan thus became one of only seventy-six persons of that rank in the entire country at the time.

A more remarkable breakthrough was Xuan's election to the National Assembly. Although it was constitutionally the country's highest state authority and lawmaking body, the National Assembly played a secondary role in formulating national policy, which was actually done in the more powerful councils of the Vietnamese Communist Party. Until 1980, the Assembly simply approved what the Party had already decided. Beginning that year, however, the popularly elected Assembly began to play a more important role in airing debates about important national issues, a trend that accelerated rapidly during the decade. As a nonparty member and a neophyte in the new system, Xuan was not an obvious candidate for the Assembly. It was General Giap, again, who proposed his name. With Giap's influential backing, Xuan was listed on the local ballot by the Cantho chapter of the Front of the Fatherland and subsequently elected. Taking the rostrum as a newly elected deputy, the emboldened Xuan lost no time in criticizing the government's agricultural policies. "I was the first one to say things not in line with the government in the National Assembly," he says.

Xuan had established his credibility. When the central or provincial governments took up problems concerning rice, he says, "they would refer to me." Although Xuan foresaw the need for "drastic changes in agricultural policy," not to mention great leaps in agricultural research and training at all levels, he was careful not to take undue advantage of his strengthened position. He remained rooted at the university and continued to divide his time between research, teaching, and extension work. He began to reestablish his links with organizations outside Vietnam, quietly seeking support to advance his research and to train his students. (Among those who responded were the Agricultural Development Council, the Mennonite Central Committee, Save the Children Foundation/UK, and IRRI.) And, working always from field-tested data, he urged sympathetic officials and party members along the path of reform.

The contract system was his first big victory. After Xuan introduced Production Group Nine's successes on television and in the National Assembly, the central government became keenly interested. Food shortages were again on the rise in Vietnam and farmers were growing angry. In April 1981, the Politburo of the Vietnamese Communist Party, the country's single most powerful organ, issued a directive adopting Xuan's contract-based innovation throughout Vietnam. Under the Contract 100 system, as it was called, all farmers could contract with their cooperatives or production groups to sell a predetermined amount of grain to the state at a fixed price. Then they could enjoy as they wished the fruits of any surplus they produced, consuming it themselves or selling it to private traders.

The impact of the new system was dramatic. During the next six years, the aggregate rice harvest in South Vietnam grew by over 2.5 million tons, and in the North by 2 million tons. The rate of growth in rice production increased by one-third. And significantly, as Xuan carefully documented, most of the increases resulted from higher yields "per hectare per crop," not from opening new lands for cultivation. In other words, the contract incentive was succeeding. Farmers, working harder and more productively on plots no bigger than those they had worked before, were simply growing more rice.

Although it was satisfying to have his research findings confirmed on such a large scale, Xuan knew that the Contract 100 system was but the first of many needed changes in the way his country approached agriculture. Using the research techniques he had applied many times before, he continued to study the needs, habits, and concrete circumstances of farmers themselves. He discovered that flaws in the system which were invisible to observers from above became glaringly apparent when viewed from the farmers' perspective. As he lobbied for more comprehensive reforms, Xuan used his grassroots insights—gleaned from methodical, painstaking scientific observation—as his chief weapons in combating the ideology-driven resistance of certain party members.

As it happened, Xuan's recommendations fell on increasingly fertile ground during the 1980s. Trying to cope with a vast range of national disappointments and failures—and after bitter debates—Vietnam's communist leaders gradually abandoned their rigid adherence to strictly communist models and began to improvise. The adoption of the Contract 100 system was one of the first such improvisations. But many more followed in the 1980s, culminating in the 1986 Sixth Party Congress with the promulgation of a new national policy of openness and renovation, or *doi moi*. In the midst of this ferment, Xuan, the researcher and educator who was also a nationally prominent scientist and elected deputy in the National Assembly, campaigned tirelessly to rewrite Vietnam's agricultural policy in favor of farmers.

By 1987, when the positive agricultural growth rates spurred by the Contract 100 system began to taper off, Xuan had already identified the more stubborn impediments to long-term growth. Many of these grew from the government's insistence upon a top-down approach to agriculture, even in situations where its knowledge and logistical capabilities were insufficient to the task at hand. For example, although the government insisted that farmers sell a large percentage of their rice to the state each year, it was not always able to purchase the contracted amounts at harvest time. The glut that resulted in private markets drove prices down, leading farmers to grow less rice. Furthermore, although the government insisted on controlling the distribution of farming inputs and tools, it was not

able to deliver these on a timely or adequate basis. This stunted production and angered farmers. In addition, government planners still told farmers what to plant and where to plant it, without taking into account the farmers' own preferences or local market conditions, not to mention soil types and other factors. Finally, and most importantly, under the Contract 100 system, farmers were still assigned their farming lots by officials. Since these assignments could be changed arbitrarily, farmers had no incentive to make long-term improvements on the land. Until these problems were addressed, Xuan argued, and especially until land tenure was secure, Vietnam could not achieve its agricultural potential.

As part of its sweeping *doi moi* reforms, the Vietnamese Communist Party paved the way for eliminating nearly all these impediments. A new contract system ("Contract 10"), introduced in 1988, decentralized the distribution of farming inputs, freed prices, and gave farmers greater latitude in choosing crops. Furthermore, a land law approved by the National Assembly introduced new land tenure provisions. Farmers would now be allotted land on the basis of long-term, inheritable leases of ten, fifteen, and twenty years. "With that," says Xuan, "many farmers were very contented." In November 1988, the Council of Ministers went even further. It declared that, after paying land taxes and commissions, farmers would henceforth have the right to dispose of *all* their products freely; they were no longer required to sell rice to the state. With this, Vietnam stopped the practice of providing rice subsidies to government employees and soldiers and gave private traders equal rights and access to the country's grain.

Almost immediately, Vietnam experienced a massive spurt in rice production. In 1980, the country produced 73 percent of its food needs. By early 1989, this figure swelled to 91 percent, although Vietnam was still importing rice. In 1989 and 1990, however, Xuan reported, "Vietnam exported close to 1.42 and 1.62 million tons of rice, making it the third largest rice-exporting country in the world."

Although these spectacular gains seemed to flow directly from the *doi moi* reforms, Xuan carefully analyzed what happened and showed that many factors had combined to produce them; some, like good weather, were purely serendipitous. A huge sale of government rice stocks also sparked the boom. Beginning in 1991, the rice surplus dwindled, but Vietnam continued to export rice. As Xuan was quick to point out, exporting lots of rice was not an altogether desirable objective, especially when the rice was being sold cheaply. It was more important to raise the productivity and incomes of individual farm families. To his mind, this is what the *doi moi* reforms had been designed to do, by freeing farmers to make rational choices about what crops to grow, and where and how to grow them. It was now Xuan's hope to wed these new freedoms (and the security of land tenure) to the growing body of practical knowledge that he and

his fellow scientists were developing at the University of Canthc and in other research centers around the region and the globe.

Xuan had long lamented his country's obsession with rice. As early as 1980, as a deputy in the National Assembly, he had argued bluntly that "if we continue to grow only rice, our farmers cannot get anywhere." However, much of this advice fell on deaf ears, as the government continued to prioritize rice production and provincial officials still competed with each other for "rice victories." Xuan approached this dilemma in the same way that he had approached the problem of collectivization: by creating a body of scientific evidence that would be persuasive. He did this through a technique called Farming Systems Analysis (FSA).

Put simply, Farming Systems Analysis involves conducting a holistic audit of a single farming unit. In South Vietnam, this was the household. In this technique, researchers study not only the physical variables related to farming per se, such as soil types, land elevation, rainfall, access to groundwater, surrounding vegetation, pests, predators, and the availability of domesticated animals, including draft animals. They also take into account the location of the household—is it near a major road, a market, a town?—and its size, age profile, talents, and resources. In the household, what contributions are made by men, women, children, elderly persons, and other relations? Do some members have external incomes—from a military pension, for example, or outside jobs? Do some have special skills, such as carpentry, tool making, midwifery, or weaving? And so on.

Xuan began applying this technique to farmers in the Mekong Delta in 1980, when he set up an "agro-ecosystems" workshop at the university. Working in small test sites, his field workers began gleaning a wealth of intimate information not only about the concrete circumstances of farming life, but also about how farmers lived and coped. After an initial appraisal, the team formulated specific recommendations, or guidelines, for improving productivity at a particular site. Then, one of Xuan's advanced students implemented the recommendations on a trial basis, in collaboration with a cooperating farmer. As the work progressed, the test site became a demonstration site where local farmers and administrators could witness the new techniques and learn them. Finally, when the student finished the research, his or her cooperating farmer stayed behind as a local agricultural promoter in the locality.

This research strategy accomplished multiple goals at once: it advanced knowledge through research; it gave budding agricultural scientists grassroots experience and training; it demonstrated useful new techniques to local officials; and it helped farmers.

Xuan pursued this line of research through the 1980s, although virtually no other university in Vietnam followed suit. But he found allies abroad. Beginning in 1987, the East-West Center at the Uni-

versity of Hawaii established an affiliation with the University of Cantho. With the assistance of Professor Terry Rambo and others from the Center, Xuan began holding workshops in several provinces to introduce an FSA methodology called "participatory rural appraisal" to fellow researchers and technicians. Building upon these exercises, he formulated guidelines to help Delta farmers adjust to the post-*doi moi* market economy. In 1988, Xuan cofounded, with Gerald Rixhon of Winrock Foundation and others, the Asian Farming Systems Association, which brought together like-minded agricultural scientists and advocates from throughout the region. Then, in 1990, with funding from the Christopher Reynolds Foundation, Xuan hosted a national farming-systems seminar at Cantho. All of Vietnam's agricultural universities were represented. As an outgrowth of this conference, he formed the Vietnam Farming Systems Network, through which nine institutions now collaborate on a broad, national, farming-systems-based research agenda. Canada's International Development Research Centre (IDRC) helps to fund the network.

The *doi moi* reforms of the late 1980s marked only the beginning of Vietnam's move to a market economy. In subsequent years, the Party lifted state controls over the distribution and sale of fertilizers, pesticides, and seeds and permitted private ownership of tools and farm machinery. In 1993, it fixed the lease term for rice and other annual croplands at twenty-five years, and for perennials at fifty years. And, as an incentive for farmers to reinvest their earnings in productive activities, it also drastically reduced the land tax. These measures have been profoundly liberating, but they have also placed a great burden on farm families who, economically speaking, must now sink or swim on their own.

This is why Xuan now works night and day to expand his farming-systems-analysis research throughout the country and to institutionalize it at every level of government. It is essential to help farmers diversify their products and, through new appropriate technologies and techniques, to maximize their incomes. In a fully diversified system, for example, a farming household, wise in the ways of the marketplace and in handling money and credit, will produce a wide range of products tailored exactly to the capacities of its land and to its own unique resources and talents: fish, chickens, ducks, and pigs; bees; black pepper, cacao, cassava; multiuse shrubs and trees such as *ipil-ipil*; flowers, perhaps; and every manner of fruit and vegetable. And alongside village crafts (pottery, umbrellas, toys), also processed foods such as vinegar, pastes, jellies, honey, candies, cakes, medicines, and wine.

Turning this vision into a countrywide reality will require a large effort. The one-hectare project sites of the eighties and early nineties will no longer do. "We must have big experiments," Xuan says. To execute province wide projects, he has helped to gain generous financial support from the International Fund for Agricultural De-

velopment (IFAD) and the Dutch government (through the Wageningen Agricultural University)—U.S.$18.3 million and U.S.$3.5 million, respectively. The European Community is funding similar projects for returning Vietnamese refugees in the Mekong Delta. At the same time, Xuan is collaborating in an IRRI project, launched in 1991 and one of eight in the country, to familiarize Vietnam's agricultural economists with market concepts and strategies. This has led to the founding of a new professional society dedicated to developing market-oriented skills, the Vietnam Society of Agricultural Economists. "When you switch over to a market-oriented economic system," Xuan points out, "you need people trained in market economics."

Xuan has been repeatedly reelected to the National Assembly and has served as vice-chairman of the Assembly's Committee on Science, Technology, and Environment. He was named vice-rector of the university in 1983. (More than once, he has declined the post of deputy minister of agriculture.) He also advises the Ford and Winrock Foundations and is on IRRI's board of trustees, as well as those of several other international organizations, including the Manila-based Asian Institute of Management and Canada's Institute of Governance. Yet he remains an active scientist. In the midst of his teaching, administering the university, organizing, and advocating—not to mention traveling—he has also published a stream of scientific papers on topics ranging from deep water rice and rice-shrimp cropping systems to brown planthopper pests and the cultivation of sugarcane and pineapple in the Mekong Delta. In addition, he has written articles on farming systems analysis, agricultural policy, and a variety of curriculum and training concerns. Indeed, he is preoccupied with upgrading tertiary education for Vietnam's rising young technocrats. Thus, Xuan remains a very busy man.

These days, as in all these years, Xuan manages his hectic life with the daily support and assistance of Le. Their three children are now grown. His elder daughter is a medical doctor, the younger one a food technologist. Xuan's son, Vo Thong Anh, has followed in his father's footsteps: He is a soil scientist.

Reflecting on his successful adjustment to Vietnam's communist government, Xuan thinks of mangoes. There are people, he says, who will not eat a mango unless they have a sharp knife. "If they don't have a knife, they won't eat a mango. But other people can eat a mango without a knife. They just peel it and eat it. "A goal in life," he says, "you can reach it in many ways."

Xuan never joined the Communist Party, but he came to respect it. It impressed him during the difficult years of the late 1970s and 1980s that the party made pragmatic adjustments in response to the real needs of the people, jettisoning mounds of cherished ideology along the way. "Of course, we have one party control," he says, "but the party listens to the masses." And although different in char-

acter from the Western variety, Vietnam's democratization is nevertheless "systematic and organized." The party has heeded the debates in the National Assembly, for example, leading to many of the key policy changes of recent years. Certainly in his own efforts to improve the lot of Vietnam's farmers, Xuan has found allies high and low.

To be sure, many uphill battles remain. But in his long-beleaguered homeland, Xuan wants people to know, "a good breeze is blowing."

August 1993
Manila
J.R.R.

REFERENCES:

Berdegue, Julio A. *Challenges to Farming Systems Research and Extension.* Agricultural Administration (Research and Extension) Network, no. 34. London: Overseas Development Institute, Regent's College, December 1992.

Castillo, Gelia T. *Sustainable Agriculture: In Concept and In Deed.* Agricultural Administration (Research and Extension) Network, no. 36. London: Overseas Development Institute, Regent's College, December 1992.

Duiker, William J. *The Communist Road to Power in Vietnam.* Boulder, Colo.: Westview Press, 1981.

. *Vietnam: Nation in Revolution.* Boulder, Colo.: Westview Press, 1983.

Encyclopedia of Asian History. New York: Charles Scribner's Sons, 1988.

Miller, Jon. "Turning Around Vietnamese Agriculture." *IDRC Reports* (Canada) 21, no. 4 (January 1994): 16-17.

Porter, Gareth. *Vietnam: The Politics of Bureaucratic Socialism.* Ithaca and London: Cornell University Press, 1993.

Vo Tong Xuan. "Vietnamese Farmers in Transition to a Free Market Economy." Paper presented at Awardees' Forum, Ramon Magsaysay Award Foundation, Manila, 2 September 1993.

____ . Interview by James R. Rush. Tape recording. Ramon Magsaysay Award Foundation, Manila, September 1993.

and Prabhu L. Pingali. "Vietnam: Decollectivization and Rice Productivity Growth." *Economic Development and Cultural Change* 40, no. 4 (July 1992): 697-717.

_____, Prabhu L. Pingali, and Roberta V. Gerpacio. "Prospects for Sustaining Vietnam's Re-Acquired Rice Exporter Status." Undated manuscript.

_____ and Vernon E. Ross. *Training Manual for Rice Production.* Los Baños: International Rice Research Institute, 1976.

Wain, Barry. "Timid Tiger: Vietnam Cities Roar Ahead, Leaving Farmers in Dust." *Asian Wall Street Journal,* 6 August 1993.

Wurfel, David. "*Doi Moi* in Comparative Perspective." *Reinventing Vietnamese Socialism: Doi Moi in Comparative Perspective,* edited by William S. Turley and Mark Selden. Boulder, Colo.: Westview Press, 1993.

Various interviews and correspondence with individuals familiar with Vo-Tong Xuan and his work; other primary documents.