

TDRI

Quarterly
Review

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A tree nursery in Khao Kho, Petchabun Province, North Central Thailand

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The Thailand Development Research Institute Foundation was established in 1984 to conduct policy research and disseminate results to the public and private sectors. TDRI was conceived, created and registered as a non-profit, non-governmental foundation, and is recognized as such by the Royal Thai Government. The Institute does technical and policy analyses to support the formulation of policies with long-term implications for sustaining social and economic development. TDRI has seven research programs: Sectoral Economics; International Economic Relations; Macroeconomic Policy; Natural Resources and Environment; Human Resources and Social Development; Energy, Infrastructure and Urban Development; Science and Technology Development; and two special research projects: "Thailand in the Year 2010" and "Thailand and Economic Cooperation in the Asia-Pacific Region."

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The TDRI 1991 Year-End Conference

“Educational Options for the Future of Thailand”

Sustaining Thailand’s economic growth and achieving a more equitable distribution of income requires attention to the country’s human resources and their further development. This is a critical area and needs both improvement and reform. It is a priority objective of Thailand’s National Economic and Social Development Plan.

Modern industries and services are increasingly demanding better educated and trainable workers, who can adapt to rapid technological changes and new production techniques. How can Thailand reach this goal while the statistics show that almost half of the Thai children who finished primary education do not go on to secondary education, that the country’s gross secondary enrollment ratio is the lowest in ASEAN, and that more than 80 percent of the Thai workforce finished only primary education or less?

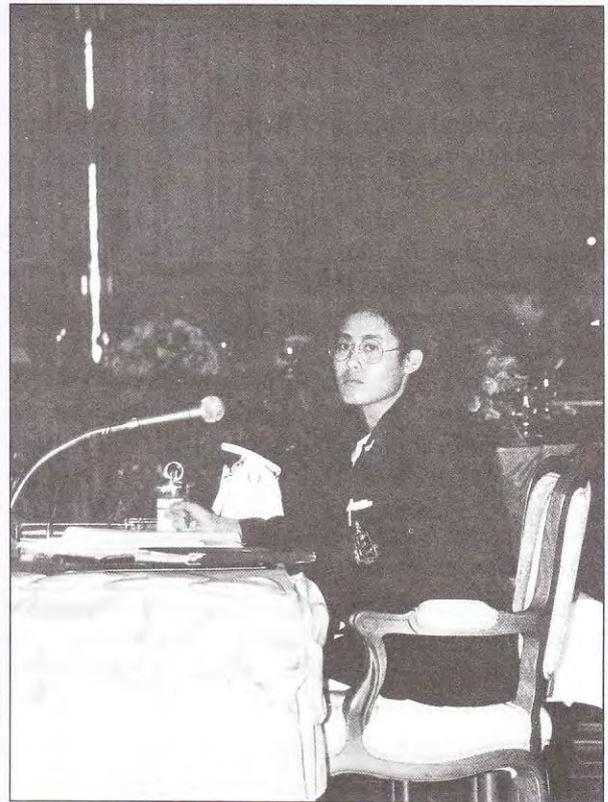
In recognition of these problems, the Chai Patana Foundation and the Thailand Development Research Institute selected the theme “Educational Options for the Future of Thailand” for the TDRI 1991 Year-End Conference. The Conference was the outcome of a major research effort on the Thai formal education system, the non-formal education system, training, and on-the-job training.

Held from December 14-15, 1991 at the Ambassador City Jomtien, Chon Buri, the Conference was attended by a total of 431 participants, including representatives from government organizations, state enterprises, academic institutes, private agencies, international agencies, non-governmental organizations, and the media.

Participants were gratified and indeed honored by the presence of Her Royal Highness Princess Maha Chakri Sirindhorn, who graciously attended the Conference, presiding over the Opening and Closing Ceremonies.

In her opening address, Her Royal Highness said:

Continuing and sustaining the country’s social and economic development will depend on the labor, knowledge, and skills of people from every profession. The quality and efficiency of the Thai people is shaped by the education system. Education also plays a significant role in instilling appropriate social and cultural values in Thai youth, especially at a time of rapid social and economic transition.



Her Royal Highness Princess Maha Chakri Sirindhorn graciously attended the Conference, presiding over the Opening and Closing Ceremonies.

Moreover, education provides an opportunity for the poor and disadvantaged to gain knowledge and skills which can be used to improve the standard of living for themselves and their families. During the past few years, Thailand’s economic growth rate has been satisfactory. Income distribution, however, has not improved. This is partly because the present educational services do not provide adequate opportunity for all of the Thai people. Many children are unable to continue on to higher education, leading to a widening income gap in Thailand. It is now vital that the Thai education system be restructured so that it harmonizes with socioeconomic changes. For solutions to these problems, all viewpoints and aspects must be considered.

Summary of the Synthesis of Research Findings*
The TDRI 1991 Year-End Conference

“Educational Options for the Future of Thailand”

Education and training of people is the single most important investment a nation makes. The nature of this investment—the amount, distribution and quality—affects the capacity of a people and the resilience of a culture to adjust to rapid change. It determines the future competitiveness of the economy. It affects changes in social structure, the distribution of income, the overall quality of life.

This paper is a summary of the synthesis of research and recommendations on educational options for the future of Thailand presented at the 1991 Chai Pattana Foundation/TDRI Year-End Conference. Among the most important findings of the research are the following:

- Rural primary schools, teachers, and the curriculum are strongly affected by pervasive social change and yet must play a special role in helping people cope with this change;
- Quality variations among primary schools are high, and equity of access to good quality primary and pre-primary schools is low;
- There has been a cumulative under-investment and under-enrollment in secondary education which has led to a growing imbalance between the educational attainment of the labor force and current and future needs of the economy. This imbalance is likely to threaten the future competitiveness of the economy, the distribution of income, even social structure and social cohesion;
- The overall fit between the education and training system and the economy is weak and not improving: secondary enrollments remain low, vocational school graduates do not have the skills employers seek, worker training and up-grading in industry, services and agriculture is less than needed, and the university system cannot graduate sufficient numbers of people in the fields the private sector demands;
- The formal public education system needs to be more flexible and responsive to users—to students and employers of graduates;
- Private schools appear to be more flexible, responsive, effective, and efficient, but at most levels (particularly the secondary level) have been over-controlled and constrained; the constraints should be removed;
- Changes in formal education—particularly increased enrollment at the secondary level—will affect the economy, income distribution, and social structure, only after a lag of a decade or more; an intensive program of worker up-grading is needed in the meantime.

Thus, a shared conclusion of the research is that there is an accumulating and interrelated set of problems which affects and will affect Thai development, equity, social values and social structure. Recognition and analysis of the problems creates the opportunity and options to solve them.

The research findings for the 1991 Year-End Conference can be synthesized into six parts.

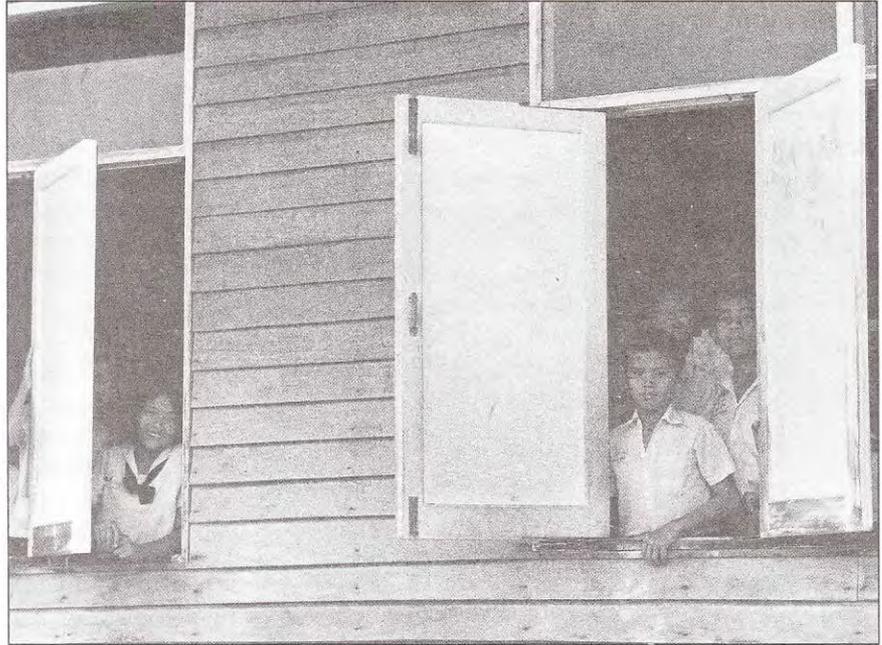
PART I Formal Education: The Historical Context

summarizes three phases in the development of modern formal education in Thailand. The first phase was a response to Western imperialism and to the reform of the central government and provincial administration. The second was the building of a national consciousness among the Thai people. The third, the present one still continuing, is the profound change from an agricultural to industrial society.

The roots of at least four current problems in education are seen in the earlier phases: (1) status and educational disparities between the capital and the provinces,

* This is a summary by Chalongphob Sussangkarn and Charles N. Myers of the revised synthesis of the 1991 Chai Pattana Foundation/TDRI Year-End Conference on “Educational Options for the Future of Thailand.”

There is no justification for discrimination against private schools and much potential for private schools to create additional secondary places in the cities and towns, so that more public resources can be devoted to promoting and subsidizing enrollment of rural children in good quality secondary schools.



between the elite and the rural population; (2) the view that the lower levels of education are only stepping stones to the top level, with little value in themselves; (3) strong government control of private schools; and (4) assumption by rural primary teachers of the responsibility of teaching and promoting values.

PART 2 Roles of Teachers and the Nature and Quality of Primary Education analyzes new pressures and expectations of rural primary school teachers, and risks to their status and motivation. The expectations include implementation of a curriculum which is to be student-centered not teacher-centered, other improvements in school quality and student achievement (to increase the value of primary school to graduates and the number of graduates who go to secondary school), and teaching of ethics and values in a period of rapid social change.

The risks are that teachers' formerly high status and motivation are being diminished by the rapid social change which is making their jobs both more important and more difficult.

Research results show that strong teacher-student and school-community relationships are needed for successful implementation of the new curriculum and improvement in school quality and student achievement, and for teachers' sense of efficacy. The quality of the school principal is found to be critical for these outcomes. But other incentives designed to help restore teacher status and motivation may be needed from the Ministry of Education as well.

Finally, there is analysis of the role of teachers in promoting and teaching values and ethics in a period of rapid change, mass media, growing materialism, in-

dividualism and competition. Critical thinking skills and learning how to learn, combined with traditional Thai values of moderation, patience, compromise and social harmony, may be the most desirable mix.

PART 3 Secondary Education and Educational Attainment of the Labor Force: A Growing Imbalance

analyzes the key imbalances between education and educational attainment of the labor force and the needs of the economy. Almost half of the children who complete primary school do not continue on to secondary education. In 1990, 83 percent of Thai workers had completed only primary school or less. Low secondary enrollment and the high share of the labor force with primary education may be the key constraints to achieving sustained growth and better income distribution in the future.

Next there is analysis of government pilot projects to increase rural enrollment in secondary schools and of the potential of private schools.

The Ministry of Education offers lower secondary education in some rural primary schools with excess classroom and teacher capacity. There are no fees or tuition. Uniforms and textbooks are made available free to students. This experiment was evaluated in village interviews in the Northeast. The program was found to reduce the main barrier to rural enrollment in secondary schools—the high private costs. Students who otherwise would not have gone on to secondary school are now enrolled. The main concerns of parents interviewed had to do with curriculum and quality. The schools do not offer the normal secondary curriculum (for example, vocational classes are offered) and do not require examinations. Most parents had high occupational aspira-

tions for their children. They were concerned that the lower secondary certificate from these schools would not be recognized and that their children would have difficulty passing the exam for admission to upper secondary school.

The shares of enrollment in private schools at most levels below higher education decreased between 1980-1990, most importantly at the lower secondary and academic upper secondary levels. The reasons for the decline were regulations of private schools, mainly a tuition ceiling. Public schools remained heavily subsidized and able to charge much lower tuition and fees. One existing study and one new study comparing the relative effectiveness of public and private schools—after controlling for differences in student characteristics—found that the private schools are at least as good and probably better than the public schools and more cost effective as well. Analysis of the occupations of parents showed that enrollment inequities were as large in the public schools as in the private schools. Thus there is no justification for discrimination against private schools and much potential for private schools to create additional secondary places in the cities and towns so that more public resources can be devoted to promoting and subsidizing enrollment of rural children in good quality secondary schools.

Finally, there is simulation to the year 2000 of the economic and income distribution consequences of differing transition ratios between primary and secondary school (the proportion of primary graduates going on to secondary school). Three scenarios are examined: the Seventh Plan target of 73 percent by 1996, 100 percent by 1996, and 100 percent in 1992 (an ideal case, for analytic purposes). Gross Domestic Product (GDP) growth is forecast at about 7.5 percent in the first case and somewhat lower in the second and third cases as having more children in school reduces the size of the labor force in the near term. Income distribution worsens in the first case and shows only slow signs of improvement toward the end of the decade in the second and third cases. Thus increases in formal education enrollment have an effect only after a long lag.

PART 4 Training and Upgrading of Workers: Righting the Balance proposes and analyzes a strategy to up-grade or “convert” the productivity, trainability and learning skills of workers with only primary education to levels comparable to workers with lower secondary education.

First there is analysis of current training and training needs in industry and services, and in agriculture. In industry and services, most training is informal and given on the job. There is some, more intensive formal training offered mainly for new workers. High labor mobility, labor poaching, and disincentives faced by the many small firms lead to less training in industry and services than would be socially optimal.

There are new training and information needs in agriculture due to structural changes in the rural economy including crop diversification, increased mechanization and use of agro-chemicals, and the increasing average age of farmers. Future extension work by the public sector will need to be by system rather than crop based, include machine maintenance and safety in the use of agro-chemicals, and make use of television in combination with existing training programs and the training and visit (T&V) system.

Based on what is being done and needed in all three sectors of the economy, a strategy of intensive worker training is proposed. The objective would be to upgrade enough workers with primary education to lower secondary level so that the proportion with only primary education would be 55 percent in the year 2000. This means up-grading or “converting” 7.4 million workers over the next nine years. The research on training in industry, services and agriculture suggests that about 300,000 are upgraded per year now, meaning that the effort needed is 2.5 to 3 times the current level. The estimated total cost of the strategy to the year 2000 would be 42,100 billion baht (in 1990 baht). Simulations indicate that the real GDP gain produced by such a strategy would be three times the cost. There would be a significant improvement in income distribution as well. Thus, the proposed strategy may be one of the best investments Thailand could make. The purely economic benefits would swamp the costs.

PART 5 Education for Science and Technology and Research and Development projects future demand and supply of technical engineering and scientific manpower, analyzes demand signals and supply response on the part of users and producers of science and technology (S&T) manpower, and proposes short-term and long-term policy and other changes, including restructuring of the vocational/technical track of the education system.

Demand for technicians, engineers and scientists has been strong. Shortages are evident. Demand projections to the year 2000, based on past trends in South Korea and supply projections based on current and planned capacity, indicate some shortages at the technician level and persisting excess demand for engineers. If research and development (R&D) is to grow, there will also be a need for more post-graduates in all scientific and technical fields over the next decade.

Group and individual interviews with users and producers of S&T manpower indicate that (current) signals from employers are clear but that suppliers' response is constrained.

In particular, the public educational institutions producing S&T manpower have severe resource constraints, both in terms of financial resources to maintain up-to-date programs and facilities, and in terms of quality staff to teach and to administer them. The prob-

lem is particularly severe in the S&T manpower area due to the much higher costs of operation and keeping up with new technologies (new equipment, materials, etc.) and the much higher salaries for S&T personnel in the private productive sector, creating a brain drain from the educational institutions to private industry.

In general, private-sector producers, for example the private universities, when unconstrained by policy regulations and other artificial measures such as tuition ceilings, respond relatively well to signals. However, the large investments and commitments required to implement a long term S&T manpower production strategy must be led by a clearly committed and better financed public sector. Higher fees, coupled with scholarships for needy students, is an obvious and overdue first step.

Finally it was found that both the supply and demand sides of the S&T manpower equation take only a near-term view toward education and training. Foresight and vision seem virtually non-existent.

PART 6 Educational Options for the Future of Thailand summarizes the policy recommendations and policy options presented in each of the individual research reports contributing to the 1991 Year-End Conference. There are four common themes in the recommendations and policy options.

First, there must be more user control, or in the jargon of economic theory: "consumer sovereignty." Students, parents, communities, and the employers of

graduates must have more impact on education, and the producers—the institutions and the educational bureaucracy—less.

Second, there must be more flexibility. That is, the education system needs to be more free of regulations and other constraints to respond to the demands of parents, students, communities and the employers of graduates.

Third, there must be greater choice. Private education should be free of unnecessary and unjustifiable constraints. Subsidies (if any) should be given to students—in the form of vouchers or coupons—not to schools.

Finally, new public investment and intervention should be highly targeted, supporting activities and developing new programs which neither the market nor a much more flexible system of education will supply. Interventions which meet this test include: a program of incentives to restore the prestige, retrain and up-grade rural primary teachers and rural primary schools; experiments with curricula and teaching methods to promote critical thinking and learning skills; promotion of enrollment of rural children in good quality lower secondary schools; incentives to increase private-sector training in industry and services; support for a new system of training and information for farmers; and, above all, support for a 10-year program to upgrade the productivity, trainability and learning skills of workers with only primary education in all three sectors of the economy.

Reforestation as a Carbon Sink: Toward Slowing Global Warming?

Somthawin Sungsuwan-Patanavanich*

Despite a very slim chance for a legally binding forest convention to be discussed in the 1992 United Nations Conference on Environment and Development (UNCED), the problem of forest management will continue to be a significant global issue in the next decade. For deforestation does indeed contribute to degradation of the global environment. Many proposals will no doubt call for significant reductions of deforestation, as well as measures for increasing forest cover through both afforestation and reforestation. The general agreement is that the world should conserve its natural forests and that any possible increase in forest cover will be of benefit to all nations.

Numerous debates have arisen over why *tropical* deforestation is singled out, while insufficient attention is given to deforestation in temperate countries. Another debate concerns the level of responsibility each country should take for the release of carbon caused by its own deforestation.

Many countries hesitate to discuss such responsibilities because of inadequate and poor quality forestry statistics and information. Nor do all countries define the relationship between deforestation and associated carbon emission in the same way.

With sincere commitment to arresting global environmental problems, Thailand has been actively involved in preparations for UNCED. Thailand has also conducted research relating its economic development to the global warming phenomenon. This study reflects one of Thailand's greenhouse research initiatives.

RESEARCH METHODOLOGY

The CO-PATH Model

The CO-PATH model used for estimating the carbon flows associated with forest areas in this study was first developed at the International Energy Studies Group, Lawrence Berkeley Laboratory, and has been described in detail by Makundi et al (1991).

The model is divided into two main parts: BASIS and FORECAST. BASIS takes specific information about the forest and computes the stored carbon, emissions and uptake for the base year. FORECAST takes the base year estimates and by applying various assumptions on the projected states of forest resources, forecasts the extent of future carbon emissions and uptake.

The forecast is subdivided into four modules which undertake the computation for each major mode of deforestation, i.e., conversion to agriculture; conversion to grazing land; various management regimes guiding forest harvesting policy; other land uses such as dams, roads, and mining; and forest fires. The totals are summed-up to obtain the emissions and uptake for any given forest type. The process is repeated for each forest type and then added up for the country as a whole.

Key parameters employed in this study include:

- Forest area and land-use activity
- Carbon stored in vegetation
- Carbon stored in soil
- Production of biomass from reforestation
- Decomposition rate of biomass
- Forest fires

ESTIMATION RESULTS AND FORECASTS

Carbon Stored

In Thailand, the total amount of stored carbon can be divided into two parts, carbon stored in vegetation and carbon stored in soil. The carbon stored in vegetation was computed by multiplying the dry biomass density with the carbon content of the dominant species. Carbon stored in soil in this study was converted from the soil organic matters.

For the base year 1989, the total stored carbon estimated by using the CO-PATH model was approximately 3.5 billion tons, including 2.7 billion tons of carbon stored in vegetation and 0.7 billion tons in soil.

* The author is a research associate of TDRI's Natural Resources and Environment Program.

Table 1 Prompt Carbon Release Due to Land-use Conversion Modes in Various Forest Types in Thailand, Base Year 1989

(million tons)

Land-use activity	Tropical Evergreen	Mixed Deciduous	Carbon release			Total
			Dry Dipterocarp	Pine Forest	Mangrove Forest	
Agriculture	6.6	1.6	1.4	0.1	-	9.7
Pasture	0.3	0.08	0.06	0.0		0.4
Harvesting	0.7	0.3	0.2	0.03	0.1	1.4
Other land use and forest fire	7.0	2.2	2.0	0.1	1.0	12.3
Total	14.6	4.2	3.7	0.2	1.1	23.8

The results show that more than 50 percent of the stored carbon is in the Tropical Evergreen Forest, which covers about 43 percent of Thailand's forest area. The estimates of carbon stored in soil follow the trend of the estimates of carbon stored in vegetation.

Carbon Released

When deforestation takes place, carbon is released in two stages: combustion and soil disturbance. The remaining biomass-based carbon is released through decomposition over a period of time. The amount of the carbon release varies according to the mode of forest conversion and the type of forest. In the CO-PATH model, carbon released refers to the sum of emission from combustion and decomposition of biomass cleared in the current year, together with releases from soil disturbances.

The total prompt carbon release due to deforestation is estimated at approximately 24 million tons (Table 1). Of this, 60 percent is from the conversion of Tropical Evergreen Forest. Of the four main land-use conversion modes, unclassified land utilization and forest fires contribute the highest prompt carbon release (52%). This is because all activities other than agriculture, pasture or harvesting are unclassified. Dam construction, mining, shrimp farming and salt-fields are examples. Forest conversion to pasture contributes the least carbon emissions, since grazing is not a major problem in Thailand.

Carbon Uptake

The amount of carbon sequestered after converting forest area to other uses depends on the type of vegetation replacing the primary forest. If a forest is converted into permanent agricultural land or permanent grazing land, the uptake potential is negligible, due to lack of woody vegetation. In this study the uptake of carbon is estimated, given the case that the land was abandoned after a number of years and reclaimed by natural secondary vegetation or reforestation. In the case that the land

is covered with perennial agricultural crops or fruit trees, the carbon uptake is considered similar to that of forest trees.

Thailand's total carbon uptake by vegetation after deforestation is approximately 0.4 million tons. As shown in Table 2, the uptake is highest when Tropical Evergreen Forest (0.2 million tons) land has been converted to para-rubber plantation (in this study the amount of carbon is assumed to be the same as that of forest trees). The carbon released is approximately 60 times higher than the carbon uptake. Thailand's net carbon release through deforestation is estimated at 23.4 million tons (Table 3), less than one percent of the world carbon release estimated by other researchers (Houghton et al 1987, Myers 1989). Assuming that Thailand's population totalled 56 million in the base year 1989, then the net carbon release from this source would be 0.4 million tons per capita. The estimates in this study are much lower than those given by Myers (1989) or the figure reported by the World Resources Institute.

Forecast

In this part of the analysis, sequestration by growing forests from past regeneration and emissions from past deforestation are not taken into account. The estimate of future net release is based on the knowledge of deforestation in the base year, decomposition period,

Table 2 Estimated Carbon Uptake in Different Forest Types after Forest Conversion

Forest type	Carbon uptake (million tons)
Tropical Evergreen Forest	0.177
Mixed-Deciduous Forest	0.062
Dry Dipterocarp Forest	0.095
Pine Forest	0.004
Mangrove Forest	0.024
Total	0.362

Table 3 Forecasting the Carbon Release and Carbon Uptake in Thailand, Assuming 1 Percent and 0.3 Percent Rate of Deforestation

Year	Years of deforestation	(million tons)					
		Carbon release		Carbon uptake		Net carbon release	
		1%	0.3%	1%	0.3%	1%	0.3%
1990	1	23.7	23.7	0.26	0.26	23.4	23.4
1991	2	31.1	30.1	0.53	0.53	30.6	29.6
1996	7	49.6	35.4	2.22	2.24	47.4	33.2
2001	12	33.5	22.6	3.07	3.10	30.4	19.5
2006	17	14.0	10.6	2.39	2.41	11.6	8.2
2011	22	4.0	3.5	1.39	1.41	2.6	2.1

rate of growth of secondary vegetation, rotation age and the change in the rate of deforestation. The net carbon release is the sum of prompt release and emissions from annual decomposition, less the amount sequestered in the year under consideration.

It is assumed that the deforestation rate is one percent, which was the rate of deforestation before the logging ban was announced and 0.3 percent, the present deforestation rate. From the forecast, the figures show that if deforestation is one percent, the future net emission will be as high as 47 million tons (double the 1990 level) within six years (1996). If the government can keep the rate of deforestation to 0.3 percent, the net carbon emissions in 1996 will only be 33 million tons. In the meantime, increasing forest area by reforestation will help to cope with future increases in net carbon emissions. The forecast shows a decreasing trend of net carbon release in the forest sector.

POLICY IMPLICATIONS

Policy Issues

In Thailand, forests and forest lands are all state-owned. The responsible body is the Royal Forestry Department (RFD), established in 1896. Initially, this Department was under the Ministry of Interior and exercised control over teak production in the Northern region. Subsequently, forest laws were introduced and the Royal Forestry Department became part of the Ministry of Agriculture and Cooperatives. Twenty-one Regional Forest Offices and 72 Provincial Forest Offices form part of this Department and are responsible for forest control and management at the regional and provincial levels.

Although the primary objectives of forest control and management are to maximize forest use for the greatest number of citizens for both forest production and environmental benefits, many problems have arisen from government control and management. Sources of these problems include the ambiguity of forest laws and

regulations, inefficient management and weak enforcement. As a result, Thailand has experienced a very high rate of forest loss. The deforestation rate was 3 percent a year during the 1960s and 1970s (or approximately 480,000 ha per year). In the early 1980s, however, the rate fell to 2 percent with annual losses of 240,000-400,000 ha per year. The evidence indicates that, according to legal classification, forest reserves are lost at a higher rate than national parks or wildlife sanctuaries. This is due not only to the higher accessibility of forest reserves, but also to better surveillance in national parks and wildlife areas.

As of 1989, Thailand had 1,218 separate forest reserves, covering an area of about 230,000 km². In addition, there were 149 areas of preserved forest, covering an area of 34,000 km². Due to weak law enforcement, however, the actual forest cover of the whole country in 1989 was only some 140,000 km², or much smaller than the reserve area announced by the government.

The ambiguity of forest laws and regulations has been an issue for some time. An important problem is the inadequate categorization of protected forests. The legal definition of a protected forest did not, until recently, differentiate between upper watershed forest, now facing destruction, and other protected forests. The definition of exactly what constitutes a forest area is also not clearly spelled out. According to the Forest Act of B.E. 2484 (1941), "forest" is defined as "unowned" land and classified under the Land Act. This gives the false impression that such "unowned" land, even though forested, can be cleared for settlement, thus leading to endless conflicts between settlers and government officials.

The most controversial issue arose from some areas being legally declared forest reserves only after the forests had already been cleared and settled by low-income farmers. It is believed that the number of people who live in official forest reserves is as high as 7.8 million (Panayotou and Parusuk, 1990).

Although RFD attempts to enforce the Land Act and claims rights over these areas, it is generally under-



Slowing the rate of deforestation and expanding the forest area are expected to be important in slowing the atmospheric buildup of carbon dioxide.

stood that if an individual has occupied a piece of land for at least 10 years, then he or she is entitled to legal ownership.

Government attempts to manage and control the use of forest resources have continued since 1960. For example, in the first four National Economic and Social Development Plans, the government imposed forest reserve and forest exploitation control laws in many areas. In the Fifth Plan, the target for forest product growth was set at 0.3 percent. Moreover, the government is planning to reforest certain areas, in the North and Northeast in particular.

Other important forest policy changes include:

In 1960, the government established the National Land Classification Committee to carry out soil surveys and subsequent land classification. This committee implemented land classification in 1961 by establishing a center attached to the Land Department. The first National Economic and Social Development Plan (1962-1966) declared that 25 million ha of the existing 30 million ha of natural forest would be reserved as national property, while the remaining 5 million ha would be available for farming. Since 1964, this task has been handled by the Department of Land Development. In 1964, the National Forestry Reserve Act was passed, prohibiting encroachment on forest reserves. The Royal Forestry Department was assigned the task of setting forest reserve boundaries.

From 1962 to 1966, a total area of 26 million ha was classified as permanent forest. Permanent forests should later be gazetted by Royal Decree as forest reserves under the National Reserve Forest Act of 1964. In 1985, a National Forestry policy was enacted. The new policy reduced the targeted forest area to 40 percent of the Kingdom's total land area, subdividing it into conservation forest and economic forest (15% and 25% of the country's total area).

Despite the National Forest Reserve Act being put into law, forest encroachment has continued unabated. Since 1979, the gap between the declared forest reserves and the remaining natural forest has become ever wider. It is clear that a new approach to forest resource management is urgently required. This means getting to the root of the problem, and establishing the real causes underlying deforestation.

Causes of Deforestation

A systematic explanation of the causes of forest depletion has been offered by Panayotou. This 1983 study reviews the deterioration of natural resources and gives some of the underlying causes. It stresses the importance of using renewable resources. The cause-and-effect chain of forest depletion, and the relationships between resource degradation, yield decline and poverty, are also discussed and some hypotheses are suggested.

Among the causes of deforestation, the problem of open access is considered of primary importance (Panayotou, 1983).

Panayotou's point regarding open access is particularly compelling. Open access, or the impossibility of policing entire forests, results in the classic "tragedy of the commons." Individuals seek to maximize the benefits they personally derive from a common good, in this case, the forest, without taking into account the combined effect of their actions, i.e., deforestation. Such behavior has strong negative implications for both Thailand and the international community. Unfortunately, there are few proven solutions to open access problems.

Panayotou also conducted some preliminary tests for Thailand. One of the tests attempts to explain deforestation using population, irrigation, fertilizer use and crop prices as variables. Although the preliminary

results reported were inconclusive, the study contributes some systematic suggestions for further research.

The most recent study on deforestation by TDRI argues that the main historical causes of deforestation are poverty, population growth and the price of cash crops (Tongpan et al, 1990). These results are in line with an earlier study by Sungsuwan that identified population, price of forest products, poverty, rural road networks, irrigation infrastructure, and crop prices as the main causes of deforestation in Northeastern Thailand (Sungsuwan, 1985). Both studies employ econometric models to analyze and explain the variation of forest cover. The two studies describe the relationship between rural poverty and deforestation as a vicious circle and conclude that any attempt to halt deforestation and to accelerate reforestation must deal with poverty first, or at the very least concurrently. It should be clarified that "poverty" reflects a government's inability to solve problems of unequal income distribution. It is extremely unfair to superficially blame the rural poor for deforestation. There is no doubt that Thailand's past development plans have worsened the income gap. This was also confirmed by the first presentation of the country's Seventh Plan in early September, 1991. To deal with poverty means to elevate income, as well as to solve the unequal income distribution problem. The elimination of poverty in absolute terms does not decrease the amount of deforestation.

Despite the recent introduction of intensive agricultural methods, relying on increased use of fertilizers and more frequent crop cycles, pressure for additional land remains acute. Pressure for cultivatable land is expected to level-off, however, within the next five to 10 years as, for the first time in its history, Thailand's rural population will decline in absolute terms. Unfortunately, much of Thailand's richest agricultural land is under increasing pressure from other types of economic activities fueled by urban growth, including industrialization in the urban fringe areas, land speculation and, even, the building of golf courses.

In sum, the primary causes of deforestation appear to be rural poverty, forest degradation, yield decline and the lack of effective enforcement by the RFD. Contributing causes also include the ambiguity of law and continuing high population pressure. Finally, new roads and other infrastructure, opening up previously inaccessible areas to encroachers without a compensatory increase in RFD resources to enforce forestry laws, must also be singled out as another cause of Thailand's current dilemma.

Reforestation in Thailand

The concept of reforestation was introduced into Thailand more than 80 years ago. Initially, most tree plantations were designed to increase timber production. Teak plantations, for example, proliferated

throughout the North. Since 1967, two government agencies and one state enterprise—the RFD, the Forest Industry Organization and the Thai Plywood Co. Ltd.—have launched plantation projects. Only in the last decade has the private sector become involved in the reforestation program.

By the end of 1989, the total planted area came to approximately 697,000 ha (Royal Forestry Department, 1989). Reforestation policies have also been incorporated into all of Thailand's National Development Plans. The targets were set at 12,480, 22,400, 38,800, 400,000 and 264,000 ha during the First, Second, Third, Fourth and Fifth Plans, respectively. In the Sixth Plan, the target was not specified in terms of ha per year. The government instead stated that the Kingdom's forest cover should be increased from 28 to 40 percent (15% for protected forests and 25% for economic forests) of total land area. This target was reversed in the Seventh Plan, i.e., 25 percent for protected forests and 15 percent for economic forests.

Recognizing that it did not have the resources to accomplish this target on its own, the RFD promoted private-sector involvement. Encroached land in forest reserves is thus rented to private companies for eucalyptus plantations at a rate of 10 baht per rai (6.25 rai equals one hectare). The government also grants promotional privileges to participating companies through a Board of Investment (BOI) promotion program. This policy has led to a major controversy as private firms have to pay farmers living on encroached land to move out. If this policy were widely implemented, the primary complication would be ensuring the welfare of the approximately 7.8 million poor farmers now living in forest reserves. The National Forest Reserves Act of 1964 cannot be enforced unless the government finds a way to deal fairly with such a large number of settlers. Past experience has shown that driving people out of the forest reserves without appropriate compensation is a sure recipe for trouble.

Factors obstructing the progress of reforestation programs include the lack of political will to protect the natural forest, financial problems, and the identification of suitable land. That is to say nothing of caring for the welfare of farmers.

Although the concept of reforestation, accepted in Thailand for almost a century, led to the first teak plantation in Prachin province in 1906, the government did not come up with a clear reforestation plan until its First Plan in 1961. Moreover, for the first five Plans, the budgets allocated to the RFD for reforestation were much too small.

During the past decade deforestation has become a major issue in Thai agriculture. The Thai government, in response to dramatic changes in soil conditions, widespread flooding, and other unhappy afflictions, was compelled to act promptly to save at least a part of the remaining Thai forests. A decision to ban logging was

made and took effect in February, 1989. But such a ban should probably be viewed as only a temporary expedient and as a means of regenerating resources. It is economically sub-optimal and usually ineffective over the long term. Critical forest depletion has also forced the government to accelerate reforestation programs. Unfortunately, by the time the government begins to reforest encroached land, it is practically always already settled by farmers.

The government has tried to solve its forest problems by implementing two programs – commercial plantations of fast-growing trees, and community, or “social,” forestry. Commercial plantations are intended to mobilize resources from the private sector to reforest large areas of encroached land. The government has promoted fast-growing species, hoping this will quickly increase forest cover as well as provide greater rural employment. Social or community forestry attempts to offer a better way to foster local participation in forest management. The premise here is that local people know best how to protect their own forests and have more incentive to do so than anyone else.

Whether these two policies are viable is still highly controversial. Assessment, however, should be based on how well these policies work in improving the standard of living of farmers and in solving income disparity.

Global Policy Implications

In recent years, concern over deforestation has gone well beyond the issues of biological diversity, watershed protection, and the supply of forest products. At the global level, forest resources are now viewed as a crucial carbon sink. Slowing the rate of deforestation and expanding the forest area are expected to be important in slowing the atmospheric buildup of CO₂ (carbon dioxide). At present, a number of international initiatives are being prepared for the 1992 UNCED Conference to be held in Brazil. Issues of particular interest include the possibility of international protocols for forests in response to the need to increase the role of global forests as a carbon sink, as well as a source of genetic material and as wildlife habitats. Many international instruments – Declarations, Charters, Agreements and Conventions – are also being considered (Maini, 1991).

Growing support for the idea of having more forest to help sequester CO₂ in the atmosphere was clearly reflected in the Declaration of the Noordwijk Conference of December 1989. That conference also proposed a target of 12 million ha global net increase per annum in forest cover.

Thailand is one of the few developing countries with a clear forestry target. Forty percent of the Kingdom's total land area has been set as Thailand's target. This much is needed to protect the country's watersheds and to reverse soil erosion.

A study by Thaiutsa indicates four different estimates of the additional annual forest cover required under the following assumptions:

1. According to Sir H.G. Champion, if every citizen demanded at least 0.4 ha of forest and Thailand's population remained at the 1988 level, an additional 8.5 million ha of forest would be required. This implies an annual reforestation rate of 0.4 million ha for a period of 20 years.
2. Following the national target of 40 percent forest cover, it is estimated that 0.32 million ha per annum should be planted for the next 20 years.
3. If the sustainability of timber production were applied as the criteria and all incremental products were domestically consumed, then no new timber plantations would be required as the RFD reports that Thai per capita timber consumption is only 0.047 m³/person/year.
4. Assuming that the rate of deforestation is 0.53 million ha per year (the average for 1961-1988), maintaining the present forest area, then 0.5 million ha per year would have to be planted. If Thailand wanted to conserve all existing natural forest and also meet the 40 percent target in 20 years, then as much as 0.9 million ha of plantation would be required each year for 20 years (Thaiutsa, 1988).

To see the implications of CO₂ reduction for the forest cover requirement, it is important to be able to assess the relationship between changes in forest area and emission of CO₂. This was first quantified in Thailand at the end of 1990 by TDRI. TDRI's preliminary findings indicate that if 0.16 million ha is planted annually with a deforestation rate as low as 40,000 ha per year, then in 40 years there would be enough forest to absorb all CO₂ emissions from fossil fuel burning (Chongpeerapien et al, 1990).

In this study, the application of the CO-PATH model indicates that in 1989 changes in forest land use contributed some 24 million tons of carbon to the atmosphere. The forecast shows estimates of 30, 33, 20 and 2 million tons in 1991, 1996, 2001, 2006 and 2011, respectively. TDRI's 1990 estimates showed that carbon released from energy consumption in the corresponding years were 24, 35, 50, 70 and 100 million tons. This means that the total carbon emissions are estimated at 54, 68, 70, 78 and 102 million tons by the end of the Sixth, Seventh, Eighth, Ninth and Tenth Plans.

If we want to control atmospheric carbon by requesting all nations to find ways to stop further emission, then Thailand would need an additional reforested area of about 3.7 million ha. If 0.16 million ha per year target

can be achieved, it will take 23 years, until the end of 2014, for Thailand to generate enough forest cover to absorb this amount of carbon. This implies that Thailand's forest should cover as much as 35 percent of the country's total land area by 2014. It should be noted that with a reforestation rate of just 0.16 million ha per year, Thailand will not be able to rely on its newly planted trees as a carbon sink. In other words, Thailand needs an additional 2.4 million ha of forest immediately if it wants to have enough forest to absorb the 1991 total carbon emitted from all sources. If Thailand has to stabilize its carbon emissions at the 1991 level (54 million tons), then it must have enough forest cover to absorb 48 million tons of carbon. With the absorptive capacity of 2.5 tons per hectare, Thailand will need to have 16.8 million ha, or about 33 percent of the country's land area, of forest cover.

The assumption of achieving 0.16 million ha, or one million rai, of reforestation every year seems optimistic though not impossible, provided barriers now obstructing reforestation programs are overcome.

Major barriers to the implementation of reforestation programs in Thailand can be summarized as follows:

The encroached forest reserves, some of which have been rented to private firms, cannot be considered a promising supply of land for tree plantings because of the immense difficulties of dealing with some 7.8 million settlers. Although there is some still identified unused land, it is not necessarily true that it will be available for reforestation. The opportunity cost of converting such land into tree plantations must also be taken into account.

Financial and technological problems will also affect the rate of growth in forest cover. A national effort is, of course, necessary but external funds will also very much be needed.

CONCLUSIONS

The principal conclusion drawn from this study is that if carbon emission is to be stabilized at the current level, then approximately 33 percent of the country's area must be covered with forest. While the national target of 40 percent established by the government has already accommodated the global warming concern, the reverse is not true. In other words, reforestation should not be considered as only a policy response to CO₂ reduction. Solving major problems in protecting Thailand's remaining forests and increasing its forest areas for the country's benefit should be given priority. Clearly, progress toward obtaining a better understanding of the basic issues and of formulating more coherent policies should be made. A review of the

overall impact of conservation and protection policies is badly needed and long overdue.

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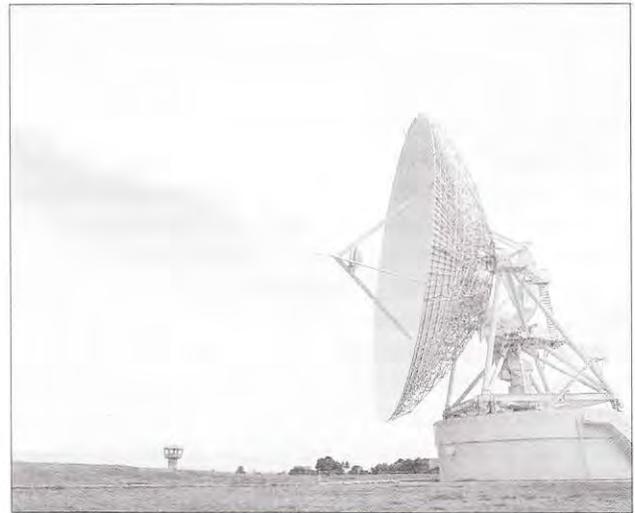
The Thai Telecommunications Equipment Industry: Obstacles and Opportunities

Sumeth Vongpanitlerd*

Prior to a few years ago, telecommunications equipment manufacturing was a relatively obscure sector in Thailand's electronics industry. To begin with, the number of firms manufacturing electronics in Thailand before 1986 was small. Only 50 projects had received Board of Investment (BOI) promotion and these represented almost the entirety of the industry. The remaining handful of very small firms contributed only marginally to the industry's total output.

The majority of these BOI-promoted firms during that period were concentrated in the consumer electronics sector, producing radio, television and electronic parts, in response to the government's import-substitution policy. In the 1970's came component manufacturing, primarily in circuits for export, followed by computers and peripherals in the early 1980's.

The most conspicuous presence in the Thai telecommunications equipment field was radio transceivers, produced by seven Thai firms, each with a history of over 20 years. This group has since dwindled to only two. Production was mainly for the local market, with a small fraction for export to neighboring Southeast and South Asian countries. In addition, one foreign subsidiary assembled telephone sets for the Telephone Organization of Thailand (TOT) and one Thai firm made small satellite antenna dishes.



As in most countries, the much underdeveloped telecommunications equipment industry was the result of strict regulations imposed by the Thai government through the Post and Telegraph Department and TOT. Changes to these restrictions only began in 1984, following deregulation of telecommunications services in the U.S.

Table 1 Telephone Investment in Thailand

	1985	1986	1987	1988	1989	1990
Investment (million Baht)	-	5,799	3,355	6,098	8,042	9,802
Line Capacity Increase ('000)	-	177	244	134	108	192
Total Line Capacity ('000)	830	1,077	1,251	1,385	1,493	1,685
Main Telephones ('000)	799	902	1,005	1,158	1,325	1,519
Telephones/100 population	1.19	1.54	1.67	1.84	2.09	2.40

Source: Telephone Organization of Thailand, *Telephone Statistical Report 1990*.

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SOME RECENT KEY DEVELOPMENTS

In October 1986, TOT took the first steps in liberalizing the telecommunications equipment market by allowing consumers to purchase equipment for their own premises, initially telephone sets and, more recently, facsimiles. At the same time, TOT began to seriously build up a much needed telephone network to cope with the surging demand for telephones, and to shorten the long waiting list of almost half a million applicants and reduce the waiting time of several years. As Table 1 shows, from 1986 to 1990 a total investment of over 33 billion baht was used to double line capacity from 830,000 to over 1.6 million lines and to raise the telephone density from 1.19 to 2.40 per 100 population.

TOT's expansion was substantial and rapid, considering that, when the organization was set up in 1954, it had a mere 10,000 line capacity for the whole country. Even so, TOT is still unable to adequately meet the continual rise in demand and the official waiting list remained at 451,063 as late as 1989. At the present rate of capacity expansion, it takes an applicant about three years on average to obtain a telephone. This inability to meet the rising demand for telephones basically stems from lack of sufficient internal resources on the one hand, and imposition by the Ministry of Finance of a maximum foreign loan ceiling of US\$ 1.5 billion on the other.

In spite of various significant developments resulting from the opening up of the huge U.S. telecommunications equipment market, as well as TOT's rapid infrastructural expansion in the local market, the local industry has not significantly benefitted, probably because the industry is in much too weak a position to respond. There has been no substantial increase in the number of new firms in the telecommunications industry, including related parts and component manufacturers, nor of the necessary supporting industries.

The product range offered by the small group of firms in the telecommunications field is thus narrow and concentrates on a few products, based largely on imported CKD (completely knocked down) parts aimed at small local markets. Despite their lengthy existence, firms remain small and incapable or not willing to undertake costly technological investment. They are consequently weak in terms of technological endowment and

capability (Akrasanee, 1991). Thus, barriers to entry remain substantially high, even for such relatively unsophisticated products as telephone sets. This is evident from the import and export statistics in Table 2 which show that Thailand's export volume, though increasing, remained meagre at 86 million baht in 1986 compared to imports, which continued to rise substantially from 1,991 million baht in 1985 to 4,540 million baht in 1986.

Major beneficiaries of the U.S. deregulation were initially the Asian NIEs (newly-industrialized economies), Korea and Taiwan in particular (Mody, 1989). Following a sharp appreciation in the currencies of Japan and the Asian NIEs, coupled with the rapid rise in production costs and the loss of GSP (General System of Preferences) privileges, labor-intensive manufacturers in these countries began to relocate their production processes to take advantage of lower labor costs elsewhere, such as in Thailand.

A large influx of foreign investment (FDI), predominantly from Japan and Taiwan, poured into Thailand throughout the latter half of the 1980s. From 1987 to 1990, BOI approved 430 electronics projects, with a combined investment of 106 billion baht, as compared to only 50 projects, with a combined investment of just 16 billion baht, during the two and a half decades from 1960 to 1986. As a result of this influx of foreign investment, some 30 telecommunications equipment and parts manufacturers are now in operation (Sripaipan, 1991). In addition, a small number of Thai firms have recently entered into the small PABX market.

From an initial narrow range of products, many new items are now being produced in Thailand, including cordless telephones, telephone answering machines, key telephones, small PABX, facsimile machines, as well as an increasingly wide range of parts and components. Practically all of these products, however, are exported; the main reason for relocating to Thailand in the first place was to take advantage of the country's low labor costs, promotional incentives, GSP privileges, and to side-step looming trade friction. At the same time, cumbersome procedures and the complicated records required to keep exports separate from local sales for import tariff and tax settlement purposes, greatly discourage these manufacturers from selling part of their quota on the local market. Exports of telecommunications products grew dramatically from just 86 million

Table 2 Imports and Exports of Telecommunications Products

	(Million Baht)									
	1970	1975	1980	1985	1986	1987	1988	1989	1990	
Imports	230	259	1,382	1,991	4,540	4,531	6,021	8,683	10,889	
Exports	0	0.1	9	26	86	141	284	2,108	5,153	

Source: The Customs Department.

baht in 1986 to over 5,000 million baht in 1990, while imports more than doubled—from 4.5 million baht to 10.8 million baht in the same period to meet growing domestic demand (see Table 2).

In spite of the recent high growth due to the influx of FDI, a recent TDRI study (Akrasanee, 1991) concluded that the local industry has not gained substantially from technological spill-overs and other benefits associated with a strong FDI presence. Domestic firms have yet to achieve a strong export capability. At the same time, although the investment momentum appears to have weakened considerably, as yet, it has not completely halted. The next section discusses a number of major causes now at work.

MAJOR OBSTACLES

The Case of Below Par Technological Spill-overs

FDI has contributed significantly to the recent economic boom in Thailand and still remains of considerable benefit to the Thai economy. FDI not only generates employment and provides capital, it can also be a source of acquiring foreign technology and opportunities in the export market.

Two obstacles prevent Thailand from realizing the fullest possible benefits from FDI and, furthermore, are likely to discourage and limit future new investments if left unresolved. The first is an inadequate supply of technical manpower, both in quantity and in quality. The second is a general lack of linkages between the parts and components industry, including various other supporting industries, and the equipment and finished products industry. These are important ingredients for the transfer and diffusion of technology—both production and design—and management skills from foreign investments, thereby substantially increasing the benefits a country can gain from FDI over and above just export earnings and employment generation. Increasing linkages and subcontracting would lead to less reliance on importing parts and components, as well as encouraging more local Thai suppliers. In turn, the stronger presence of Thai firms would generate greater technological spill-overs.

Infrastructural Bottlenecks and Policy Constraints

The sudden surge in foreign investments has also created a number of problems. Notable among these are bottlenecks in the country's physical infrastructure—transportation, power supply, port facilities, and telecommunications services.

While a highly-qualified technical workforce is certainly essential for absorbing technology transferred through foreign investments, an adequate supply of skilled labor is also necessary to meet increasing demand and to maintain production levels of quality products.

Another important element for ensuring quality control and diffusion of technological knowledge is an adequate technological infrastructure which involves, among other things, basic metrology, improved standards, certification and product testing capabilities, and a good information system on technology and market trends.

Though low production costs and high quality are certainly major factors in international competitiveness, another important factor has emerged as a result of rapid technological change and shortening product life cycles: the need for rapid delivery times. This certainly calls for good support infrastructure, efficient transportation, simpler customs procedures, and adequate telecommunications services. Thus the third obstacle is the generally poor technological and support infrastructure, presently reigning throughout the country.

These various problems are not confined to the telecommunications equipment industry. They apply to the electronics industry as a whole and indeed to most other industries. Another main issue, specifically relevant to the industry under discussion, is the government's telecommunications regulations and policies.

EMERGING OPPORTUNITIES

Currently TOT is undertaking a massive expansion of the nation's telephone network. As TOT's own investment capability—already pushed to the limit in doubling its network capacities during 1986 to 1990—is not able to meet the ever-increasing demand for telephones, the government has taken another drastic policy change in allowing TOT to award concessions on a B-T-O (build-transfer-operate) basis to TelecomAsia (formerly CP Communications), a private Thai firm, to install two million lines in the Bangkok Metropolis within five years. A similar deal for one-million lines in the provincial areas is to be awarded in the first quarter of 1992. These, together with TOT's own annual investment, should bring the present telephone density of just under three per 100 population to about 10 per 100 population by 1996, a target aimed for in Thailand's Seventh National Plan.

Apart from investment plans, several other major telecommunications development plans of both TOT and the Communications Authority of Thailand (CAT) are expected to materialize in the near future. They include a national ISDN (integrated services digital network), at least one teleport, national and international optical fiber networks, and a satellite communications network (Sripaipan, 1991).

An ISDN is a modern telephone network capable of providing various services using the same telephone line. A single ISDN can offer such services as telephone, facsimile, data communications, and a range of new services, such as cable TV, video-phone, video-conferencing, videotext and other telematics. A number of

countries have experimented with, or are already operating, an ISDN. TOT plans to introduce the service within 1992.

The teleport project aims to initially complement the Eastern Seaboard Development Plan, for which an investment of 1,466 million baht on the part of TOT and 670 million baht by CAT is called for. TOT will install two ISDN exchanges, one each at Mab Tapud and Laem Chabang with an initial 5,000 ISDN lines. CAT will install 1,000 trunk circuits for an international transit switching center at Sri Racha. These investment are to be carried out during 1991 and 1992.

Presently, CAT has only one coaxial-cable linking Thailand to Malaysia, and then on to Singapore. With the growing traffic in international calls, CAT plans to build a new submarine high-speed optical-fiber cable to Malaysia by 1993. Another project involves a joint-venture between TOT and the State Railway of Thailand (SRT) to install a 3,000 kilometers optical fiber cable network along the four railway routes to the North, Northeast, East and South of the country by 1995.

Thailand currently uses INTELSAT satellites for international communications and Indonesia's PALAPA satellite for television broadcasting and domestic communications. By 1994, the country is expected to have its own satellite with at least 12 transponders capable of handling 2,000 telephone circuits per transponder. The Shinawatra Computer Group will invest 4 billion baht under a 30-year concession to operate the system on a revenue-sharing basis.

With the above major telecommunications investment plans over the next four to five years, a host of new opportunities will be certain to arise. They can only help strengthen the local telecommunications industry.

Take, for example, the massive 100 billion baht project to install two million telephone lines in Bangkok. The cost breakdown estimate is 57 percent for switching and transmission equipment, 33 percent for outside plant equipment, and 10 percent for customer support service systems. Thus the bulk of the cost goes to electronic switching and transmission equipment. Outside plant equipment comprises copper cables, metal

cabinets and ducts, and civil works. Customer support service systems include both computer hardware and software. Since only a few of the top telecommunications corporations in the world are capable of producing switching equipment, the local industry could be expected to supply only some 5 billion baht worth (or 5% of the project cost) of products, mostly for PCBs, PCBAs, electronic components, wires and cables, and subscriber loop carrier products (Vimolvanich, 1991).

The greatest benefit, however, lies not with the actual project implementation itself, but in the subsequent supply of such customer-premise equipment as telephone sets, PABX units, and facsimile machines. This is where the greatest emerging opportunities lie. An estimate of the likely demand for customer-premise equipment associated with the availability of an additional three million phone lines is given in Table 3. A question naturally arises: How can some or all of the obstacles facing the industry be overcome so that manufacturers, particularly local ones, can capitalize on these forthcoming opportunities? The next section attempts to provide some development strategies that may partly answer this question.

STRATEGICAL OPTIONS FOR DEVELOPMENT

- **Promote FDI and encourage OEM (original equipment manufacturing) subcontract manufacturing.**

In the next three to five years, Thailand should continue to attract foreign investors in telecommunications-related industries, particularly in the parts and component manufacturing sector and supporting industries. This should be a first step in enlarging the value-added chain, and building a strong parts and components and equipment industries, as well as boosting exports.

At present, the industry is largely engaged in assembling final products or intermediate goods, with heavy reliance on imported parts and components. While there is a lack of breadth in the support industries, including parts and components, there is

Table 3 Demand Estimate for Terminal Equipment Expected from 3-Million Telephone Lines

Item	Metropolitan	Provincial	Total Demand
Line Capacities	2,000,000	1,000,000	3,000,000
- Small business/residence	1,815,000	985,000	2,800,000
- Large business PABX	185,000	15,000	200,000
Telephone Handsets	3,103,000	1,362,000	4,465,000
- Small business/residence	2,178,000	1,182,000	3,360,000
- Large business/PABX	925,000	180,000	1,105,000
Facsimiles	40,800	10,400	51,200

little evidence of any substantial backward linkages between whatever support industry there is and the final product assemblers (FIAS 1991). Measures should be designed and introduced to promote greater backward linkages, as well as OEM manufacturing for foreign firms, to obtain as many spill-over benefits as possible.

As the industry matures, comparative advantages will gradually shift from low cost of production workers to low cost of engineers (based on engineering and design capability) and managers (based on marketing and management skills). Development strategies over the medium term (five to 10 years) should then focus on expanding the value-added chain's activities to research and development (R&D), as well as to cover marketing functions. If sufficient experience and production capability in local firms is accrued, both local firms and foreign subsidiaries alike should be encouraged to develop their own product designs and marketing capabilities locally. Longer term strategies, for the next 10 years, should aim at domestic firms finally making their own brand names and seeking opportunities to form alliances with multinational corporations, as is the case with the Thai CRT. In that respect, BOI's B.U.I.L.D. program could act as a broker to seek out and make arrangements for such alliances.

Build up an adequate technically-capable human resource base

The current acute shortage of technical manpower is expected to continue for at least the next three to five years, judging from prevailing conditions and the increasing level of foreign investments in the electronics industry. Drastic measures and actions need to be taken urgently, not only to avert further deterioration of the shortage situation, but also to prepare the country for sustainable development, in view of the natural progression from low labor cost comparative advantages to higher knowledge and skill-intensive competitiveness.

Apart from initiatives to accelerate the training of technical manpower, from skilled craftsmen to technicians and university graduates, the country should consider schemes to institutionalize some sort of certification system to rank workers without formal education according to technical skill and proficiency. Such schemes could be aimed at specific skills, for instance, general electronics trouble-shooting and PCB repair, telephone line-fault rectification, and computer literacy. Similar national certification systems in many fields, including electronics, have been a great success in Taiwan and South Korea.

- **Target segments or products of the industry and accord priority status to these for a more focussed approach to development**

As the country is encountering severe and worsening infrastructure bottlenecks, both physical and technological, plus a severe shortage in skilled technical manpower, it is essential that a more focussed approach to industrial development be adopted. Thus maximum benefits could be realized from local resources without spreading these resources too thin. Some sort of industrial development plan with more specific and measurable goals in implementation should be forthcoming.

For the telecommunications industry, selection criteria could be based on consideration of market needs for both the export and domestic markets, large linkage effects, and high value-added. A detailed study, for example, taking into account the country's short and long term telecommunications infrastructure expansion plans (on the demand side) and the domestic telecommunications and related industries (on the supply side), on both current and future prospects, could be undertaken to target segments and products.

- **Use government procurement in telecommunications expansion projects as an instrument to promote local industry**

The government should consider procurement for future telecommunications expansion to help nurture local firms, promote industrial linkages, access and acquire foreign technology, and maximize spill-over effects.

In a recent World Bank study (World Bank, 1990) on the role of government in the development of the electronics sector in four developed economies (U.S., U.K., France, and Japan) and seven developing economies (Brazil, China, India, Korea, Taiwan, Singapore, and Hong Kong), nine of the 11 countries have made extensive use of government procurement guarantees for specific products. The two exceptions are Singapore and Hong Kong.

Government procurement should, however, be used as an instrument to promote local firms and must be designed to nurture local firms, promote the use of inputs manufactured by the country's highly-competitive parts and components suppliers (mostly FDI firms), access and acquire foreign technology, and diffuse and adapt such technology.

The government should also encourage more private sector participation in TOT and CAT expansion projects, by not simply relying on a turn-key purchasing basis, but involving their own engineers,

for instance, in network design and software specifications. Suppliers of major equipment should also be obliged to provide specific training programs as part of procurement deals, and so on. In this respect, the government may consider the following immediate measures:

- announcing future telecommunications expansion plans
- releasing full project details and technical specifications well in advance
- giving greater preference to local firms able to meet the specified technical requirements
- attaching technology transfer conditions to future procurement packages, such as training programs and hardware and software design and capability building

As longer term measures, the government should consider the following measures:

- gradually increasing local content requirement to match demand with the local supply
- establishing R&D laboratories and programs, as the National Electronics and Computer Technology Center (NECTEC), TOT, and CAT have done.
- acquiring and diffusing new telecommunications technology to the domestic industry
- developing indigenous R&D by establishing R&D laboratories, or jointly with private sector firms, to meet the needs of the future telecommunications projects where ap-

propriate, both for the telecommunications networks and the user equipment markets.

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The Public Policy Process and Political Change in Thailand: A Summary of Observations¹

Scott Christensen*

Thailand's race toward newly-industrialized country status has been accompanied by more and more political pluralism. But it is hardly certain whether such pluralism translates directly into more equitable industrialization. Indeed a preliminary reading of the evidence suggests not. To what extent might this be attributed to the *process* of decision making in Thailand? What institutional and political variables are relevant?

This brief discussion of broad national trends presents two findings. First, changes in the framework of decision making in recent decades have strengthened the voice of private business, and in particular of urban industry, in the policy-making process. This has resulted in the formation of a loose coalition of official and industrial interests which now dominates development strategy in Thailand. Second, because of the influence of this coalition over policy, proposals to spread the fruits of growth to the countryside favor industrialists over farmers, although farmers constitute the majority of the labor force. While electoral politics constitutes one means to broaden the range of participants in decision making, democratization of the policy process has worked primarily to the advantage of industry.

EVOLUTION OF THE FRAMEWORK OF PUBLIC POLICY

A number of developments have introduced increasing pluralism into the framework of Thai public policy since the 1960s. One is the diversification of the manufacturing sector and the organization of business into professional interest groups. While the state provided infrastructure and incentives, the private sector became the engine of economic growth. Under an import-substitution policy, firms diversified rapidly from banking and commerce into manufacturing of consumer goods for the domestic market. Economic growth averaged 7 percent per annum during the 1960s, while

growth in manufactured exports averaged over 9 percent between 1960 and 1973.

A parallel development is democratization after 1973. While elected governments tend to be unstable or even short-lived, continuity lies in the fait accompli that elected representatives now participate in key national decisions. This affords more avenues for the population to express its varied interests, and it places more distributive pressures on the allocation of national resources. A third development is the professionalization of the bureaucracy and the rise of economic technocrats in key policy making positions.

Two variables concerning these developments are relevant to the substance and process of decision making. The first involves the organization of these participants and the methods by which they voice their preferences. Second we consider how their preferences are introduced into the decision-making process.

Organization of Policy Participants

In terms of formal political organization, business participates in policy making at three levels. Nationally, "peak" associations—the Board of Trade, the Thai Bankers' Association, and the Federation of Thai Industries—were created in the 1960s to facilitate formal consultations with senior government officials. Already during the Third Development Plan (1972-1976), peak associations participated regularly in policy subcommittees of the national planning board, or NESDB (National Economic and Social Development Board). At the regional level, provincial chambers of commerce proliferated during the 1980s, increasing from seven in 1981 to 67 in 1986. And at the sectoral level, trade associations representing specific industries grew from 48 in 1967 to 233 in 1987. These venues have enabled private business to become an advocate in goal setting and policy implementation.²

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For electoral politics, party organization can represent interests in a variety of ways. At least since the demise of the Left in the early 1980s, Thai parties by and large have not split along class, ethnic, or ideological lines. This differs, for example, from some Latin American countries where labor parties vie against conservative or middle-class parties. Thailand's are "catch-all" parties, meaning they cut across these socioeconomic divisions and capture votes from all strata of the population.

This mutes urban-rural or class divisions, especially in the provinces. But, because constituencies are so broad, this also discourages the formation and feasibility of coherent policy platforms among the parties. In other developing countries, catch-all parties that promote sweeping land reforms may lose support from landowners. Or parties proposing an import-substitution trade regime may lose backing from farmers and traders producing for export. In Thailand during 1975, parties promising crop subsidies to rural voters drew protest against higher food prices by urban voters, rendering the policy invariable. And so on.

Finally, professional technocrats have acted as key players in decision making at least since the 1950s. Reforms carried out in 1958-1960 saw the creation of the national planning board and an independent Bureau of the Budget, along with the strengthening of the Bank of Thailand and the Ministry of Finance. Fiscal and monetary policies were insulated from bureaucrats and politicians alike. Structural adjustment requirements during the 1980s resulted in officials from these agencies participating in the Cabinet with almost unprecedented authority. While the role of technocrats in any one government tends to be subject to political fashion, the technocrats' control over the national budget and monetary issues remains firm.

Representation in Decision Making

The private sector is factored into policy making in both regularized and ad hoc fashion. Peak associations participate mainly through the Joint Public-Private Consultative Committee (JPPCC), created by the NESDB in 1981. This is not a formal decision-making channel but a venue in which peak representatives can voice their opinions about current or future policy.

Peak consultation deals more with broad policy issues, such as taxes and tariffs, than with specific sectoral issues. The latter are managed by sectoral committees. These committees involve senior civil servants, Cabinet ministers, and members of trade associations. Unlike the JPPCC they act as formal decision-making venues. Trade associations or individual businesses also lobby elected members of parliament (MPs) on an ad hoc basis. The strengthening of parliamentary committees during the previous government opened more channels for this style of input. In an elected government,

peak associations, too, consult frequently with elected ministers and collaborate with parliamentary committees.³

The hallmark of the parliamentary form of government is, of course, the elected Cabinet minister. An elected minister participates in nearly all aspects of policy making at the national level. Discretionary powers conferred on the minister by his or her portfolio send signals to voters that there are policy distributions available within the realm of laws and measures at the minister's disposal. Because Thai party policies are vague or nonexistent, party leaders sway voters not with ideology or platforms which suggest ways that discretionary powers will be used, but simply with promises that the party will join a coalition and hold Cabinet posts.

Policy measures available to elected politicians are concentrated at the national level and primarily in the Cabinet. Since local representatives do not hold posts in provincial administration, there are few channels at this level, indeed if any, for the average citizen to influence policy formulation. This generates a bevy of demands from the localities that beckon attention from ministers far away in the capital. Combined with the catch-all nature of the parties, such demands place great pressure on elected ministers to deliver favorable policies to a vast strata of interests. The complexity of these pressures is accentuated by the fact that many MPs are funded by Bangkok business elites but they are elected, in the main, by rural voters.

Conspicuously absent in this "democratic" structure are laborers, farmers, the poor generally. Independent farm and labor associations were oppressed by the State in the mid 1970s. The only group to establish a firm presence in policy making is the sugarcane farmers, and this group is led and funded by large, commercial growers. Together with sugar millers, they have pressured the government to raise consumer prices of sugar to their own benefit. Large oil palm producers have made some strides in the same direction. But formal associations have been forbidden to most other farmers. Instead those farmers rely on their politicians to deliver a piece of the surplus harvested by the central government.

The role of technocrats — meaning top planners and advisers — has undergone periodic modification. They usually are accorded a strong voice during worsening economic conditions. Examples include the 1958-1960 period, when measures were taken to curb fiscal mismanagement, and 1980-1988, marking a period of structural adjustment and external debt moderation. But several agencies enjoy a continuously strong role, including the Central Bank, the Budget Bureau, and the Ministry of Finance. The NESDB, which was given great powers to vet investment and policy decisions during 1980-1988, has been more subject to political fashion.

The administration elected into power in 1988 reduced the role of top planners, notably of the NESDB.

Arguments were made to the effect that, in a democracy, key decisions ought to be managed by elected officials. Use of the JPPCC was moderated as well to give more space to elected ministers and sectoral committees. The present interim administration again gave technocrats discretion to manage legal and bureaucratic reforms deemed necessary for sustainable growth. But elected leaderships are hardly adverse to technocrats. Experts in various policy issues almost always become advisers to elected prime ministers.

PERFORMANCE AND CONSEQUENCES OF POLICY

What results have these changes in the policy framework produced? On the surface the evidence suggests that the framework of policy in Thailand is quite flexible and responsive to a broad cross-section of interests. It also suggests competence in the management of the country's affairs, and Thailand's economic performance implies as much. Are current institutions and processes fit to meet new developmental challenges such as the growing gap between the rich and the poor, or disparities between industry and agriculture? How has public policy performed in these areas thus far?

Macroeconomic Versus Sectoral Policies

Thailand is praised repeatedly for its sound, conservative monetary and fiscal policies. Good performance in these areas is due partly to the relative independence of the Central Bank and the Budget Bureau from "political" interference, and partly to the ability of senior technocrats to take difficult measures at appropriate times. The oft-cited example is the devaluation of the baht in 1984, when central bankers faced opposition from within and outside of government.

Government finances are guarded in a number of ways that are unique when compared to other market economies in Southeast Asia. Since 1958, laws governing credit allocations have prevented the Thai government from guaranteeing private sector debts. Thai firms, by and large, have relied on private credit at commercial rates rather than hand outs from political patrons.

The management of fiscal policy is praised in the same respects. Thailand has an extremely rigid budget process that affords the Budget Bureau overwhelming authority. Parliament, for example, has influence only on the allocation side, after funds have been appropriated for competing agencies. This rigidity is said to moderate debt-creation because the Budget Bureau enjoys autonomy from the agendas of specific governments in power. Moreover, it curbs incentives, familiar to Latin American countries with large income gaps between the rich and poor, "to use macroeconomic policies to raise the incomes of lower-income groups, which in turn contributes to bad policy choices and weak economic per-

formance."⁴ Even with the recent fiscal surplus, successive governments have adhered to discipline. This contributes to low inflation and Thailand's reputation among international investors for "getting the incentives right."

While the "insulation" of the budget prevents electoral cycles from generating periodic spending sprees, the record of austerity is, however, mixed. The budget process is less immune to demands from other government agencies than to the demands of politicians. External debt became a serious concern only in the late 1970s, following American military retrenchment from the region. This encouraged successive governments to launch a rapid weapons build-up. Budget constraints led to the financing of this effort with foreign loans. These expenditures are now cited as a main cause of deteriorating external accounts in the early 1980s.

A political consequence of rigid macroeconomic policies is that elected ministers rely on sectoral policies to deliver those benefits that quite naturally are demanded by interest groups and voters alike. These policies involve four principal areas: trade and industry, including quotas, licensing, and factory promotions; price subsidies for agricultural commodities; procurement; and infrastructure contracts. Elected governments have done better at giving organized cartels access to these resources than at using these policies to create programs for the electorate at large.

In rice policy, for example, politicians were far more eager to deliver ad hoc subsidies to target recipients than to eliminate export taxes and thereby raise prices for every farmer. Part of the reason was that influential rice millers "captured" these schemes by lobbying politicians for subsidies, claiming they would pass higher prices on to specific groups of farmers who often resided in strategic voting districts. Only on occasion did farmers receive higher prices.⁵

In this case the formal policy framework facilitated such an outcome. While rice farmers were allowed no trade association for articulating their demands, millers speak formally through the influential Rice Millers Association. This case suggests that the policy process has done a relatively poor job at enhancing opportunity for the economically weakest of the population while it can enable more powerful groups to grab resources from the public trough. A similar logic could be applied to state reforestation schemes, in which untitled farmers encroaching on public forest reserves are evicted, often forcibly, and the properties are leased in turn to commercial tree planters for only a marginal fee.

Effectiveness of Public Agencies

It has become common and often convenient to blame politicians for perceived inconsistencies in policy. But it is important not to leave the quality of the machinery that manages policy free of scrutiny.

The literature on bureaucracies in developing countries offers two contrasting ideal types. On the one hand there is the “developmental state,” based on the Japanese model.⁶ Rigorous exams restrict entry into the civil service, promotions and relationships stress achievement, and collaboration between industrialists and administrators creates consensus over goals and facilitates sustainable growth. On the other hand there is the “predatory state.” Civil service posts are purchased, promotions are based on personal loyalties, and relations between industrialists and administrators turn on market-like exchanges in which policies are sold and profits are shared. Predatory states are said to contribute to the quick plundering of resources and they impact negatively on economic performance.⁷ How does the Thai bureaucracy perform?

Incentives: Work incentives and promotions have changed significantly from the day, many decades ago, when the civil service was regarded primarily as an estate conferring elite status and privilege. Irregular incomes appear to have lessened in significance as an incentive for joining the service. Educational achievement is pervasive. In 1987, 61 percent of rank C9 through C11 officials had achieved a Master’s degree or higher. The vast majority of those degrees were earned abroad. And over one-fourth of serving permanent secretaries held Ph.D.’s in their fields of service.⁸ But recently “brain drain” is a widespread concern as qualified officials leave the service for more lucrative positions in the private sector.

Incentives remain for officials to shirk public duties and to grab opportunities for personal gain. Codes of conduct are defined by ambiguous standards. A casual glance at official listings shows that most senior officials, notably in the economic ministries, sit on the boards of major corporations. This gives the appearance of a very thin line between public service and the private interests of officials. Some officials interviewed claimed that the auctioning of office promotions persisted in some departments, albeit on a limited basis.⁹ Such an environment gives incentives for officials to use their positions to generate private revenues, or to engage in those market-like exchanges associated with the predatory state.

Institutional Structure: While staffed with considerable expertise, the bureaucracy does not act as a unified entity with a common or even clear developmental purpose. Multiple agencies involved in common policy issues—such as land and irrigation—operate as separate organizations. This segmentation and duplication of functions creates enormous incoherence in policy formulation and implementation. Moreover, legal mandates empower agencies with authority that is autonomous from the remainder of government. These factors combined allow many agencies to define public policy according to narrow agency goals. The Commerce Ministry, for example, enjoys a legal status similar to that

of a state enterprise. In its management of government-to-government rice sales, the Ministry has legally defined “public” objectives in terms of income to the Ministry from rice trading.

Not all areas of policy produce losses or inefficiency. Thailand’s exploitation of natural gas reserves is an example of state intervention that successfully spearheaded the development of an industry—petrochemicals—in which Thailand had no previous comparative advantage. In this case risk was spread between the state and private investors, and state enterprises facilitated the adoption of new technologies. This effort was supported by close consultation between the state, commercial bankers, and domestic firms. Coordination was imposed on government agencies by a coordinating committee. Consultations were transparent.

In other cases the policy framework empowers well-connected entrepreneurs to confiscate public goods for private use. Examples abound of instances in which dams and reservoirs were created while title deeds to adjoining farm properties were delivered to resort and golf course developers who exploited the new water resources. While these practices could be rationalized as unfettered supply and demand, they amount to nothing less than outright subsidies to the rich at the expense of every taxpayer. Another example is the Commerce Ministry’s practice of buying rice at target prices and selling it at a loss. Often the rice is sold to Thai commodity exporters who in turn peddle it for profit. In this case the taxpayer subsidizes wealthy merchants while only marginal gains, at best, accrue to the rice farmer. These transactions escape the bounds of normal budget procedures and hence there is no way for an elected parliament to scrutinize them even on the allocation side.

Agriculture and Industrialization

There can be little doubt that development policy has been governed by a push toward rapid industrialization. Despite frequent conflicts among firms, interest groups, and public agencies over specific policy allocations, common fortune is found in this ruling national project. Tariff exemptions, export subsidies, infrastructure, licensing, and tax policies have favored industry over agriculture. For decades Thailand taxed the rural sector to generate revenues for the State and to keep prices of foodstuffs low for urban wage earners. It was only in 1985, after the U.S. government began subsidizing American rice exports, that taxes on rice exports were reduced to zero.

For most of the period after 1950, rural spending concentrated on irrigation, roads, and electricity. While enabling diversification and distribution of farm commodities, these public goods served primarily to shore up the State’s rural tax base. As a food surplus country, policies were never geared toward the goal of maximiz-

ing production and self-sufficiency. Most irrigation was confined to the Central plains. Spending on research and extension services rose considerably after the 1970s, but yields on major crops remain among the lowest in Asia.

Nonetheless, agricultural output expanded steadily during this period, partly because of land abundance, and partly because of foreign demand for Thai commodities. These factors, combined with the resourcefulness of Thai farmers, have enabled Thailand to become the world's top rice exporter and to rank among the world's leading exporters of cassava and sugar. But Thailand must achieve a "second wave" of diversification into horticultural crops and aquaculture if it is to diversify farm incomes and remain competitive. This wave requires more technology, research, and policy coordination than what governed the "first wave" out of rice. The urgency of a refurbished approach is equally pressing in light of demographic trends. Assuming current population growth, over 40 percent of the labor force will reside in farm households in 2010, compared with roughly 65 percent today.

The demands of the "second wave" have not been lost on senior policy makers. Officials at the Ministry of Agriculture and Cooperatives and the NESDB advocate more crop research and tangible support for farmers. While there is little agreement over a specific strategy, officials appear to agree that problems *stem from a shortage of commercialization*.¹⁰ This assumption was articulated as early as 1975 when the newly-elected government took measures to support agriculture. A major part of that effort was the mandate that commercial banks lend a set portion of their portfolios to agriculture. State-subsidized credit, too, expanded through the Bank for Agriculture and Agricultural Cooperatives, or BAAC.

Measures proposed to achieve the "second wave," and the process through which proposals were arrived

at, reflect the rather marginal value conferred on the farmer by the industrialization process.

Privatization Strategy: Top planners now identify large agribusiness firms as a tool in the stated effort to speed up commercialization and to tackle the "second wave." In theory, large firms provide at least two resources now in short supply. First, they are more equipped to provide long-term capital than the average smallholder growing rice or cassava. Such "risk" capital is required for expansion into tree crops, livestock, and aquaculture. And second, the second wave is far more research-intensive than the first. Private firms may be able to absorb research costs and thereby relieve the strain on the public research apparatus implied by more sophisticated crop production.

The decision to incorporate agribusiness was made by planners, senior Ministry of Agriculture officials, and businessmen. Farmers had no input, not even indirectly through elected representatives, though such a strategy is sure to affect their livelihood. How? A stronger role for large firms implies at least two things in the countryside. First, it could result in the promotion of large plantations. The decision to make lands available for such an activity would be negotiated by investors and by land and forestry officials. The latter have repeatedly demonstrated their lack of interest in hearing out the farmer's position on what should be done about degraded forest reserves, the likely location of commercial plantations. And second, it implies more contract farming, the arrangement in which farmers produce select goods for the company at a fixed price in exchange for inputs such as fertilizer, seed, and credit at a fixed cost. The arrangement is said to promote adoption of new inputs and to cut brokerage and marketing costs. But because contracts are binding the farmer loses, for example, when the weather is unfavorable or when the free market offers higher prices.

The National Agricultural Council could relegate independent cultivators to the status of wage laborers on their own land.



National Agricultural Council: Proponents of this proposal argue that farmers would have more influence over the above decisions. Farmers would participate with officials and business executives in production planning and price setting. Curiously, however, farmers were not consulted regarding this proposal, either. Farmers who volunteered their opinions to the media supported the idea of participation but disagreed with the Council's proposed substance. Most importantly, they argued against the process by which farmers' representatives would become members of the Council. Farmers would not select their own participants. Selection would be carried out bureaucratically, under the direction of the Ministry of Agriculture. In contrast, many farmers stated they would prefer to participate in such a council as one or more formal trade associations, which would give them legal bargaining leverage on par with industry.

But as proposed, the decision-making process would facilitate what the Council appears to be designed to do: empower officialdom and agribusiness to implement commercialization of the "second wave," while engineering compliance among rural labor. The evidence points in this direction. With vast powers to regulate, tax, and coerce, the Council implies severely limited choice for the average farmer. It would decide what crops would be produced nation-wide, it would have the right to levy commodity taxes and to use the proceeds for research and crop support on a selective basis, and it would punish farmers who shirk contract-farming obligations. Tax burdens would be passed down to the farmer, just as under the rice premium. Backed by officialdom and agribusiness, the Council offers no effective mechanism to make it accountable to the independent interests of the average farmer.

CONCLUSION

It should come as little surprise, then, that election campaigns court the countryside with talk of action on issues such as land and crop prices. But democratization has done little to change the substance of development policy in Thailand. Elected governments, faced with the unenviable task of pleasing a rural electorate, many of whom are poor, have been unable to forge an agenda to enrich agriculture and reduce the gap between that and industry. This has led officials and businessmen to propose a more consultative approach to policy making in the area of agriculture. Exemplified by the proposed National Farm Council, the approach resembles policy-making venues created in industrial policy areas during the past decade. While the Council's proponents regard it as an improvement over the often ad hoc aspects of electoral politics, it evidently would come at a cost: farmers could be subject to more official control and their freedom to choose could be limited substantially.

ENDNOTES

- 1 The essay summarizes a documentary report written for the "Socio-cultural Change and Political Development" module of the project "Thailand in the Year 2010," supported by the Canadian International Development Agency (CIDA).
- 2 Laothamatas (1991).
- 3 Interview with a former president of the Federation of Thai Industries.
- 4 Sachs (1990): 10.
- 5 Pintong (1984).
- 6 Johnson (1982).
- 7 The author acknowledges that this distinction is a qualitative one and that most states probably land somewhere on a continuum between the two poles. See Evans (1990).
- 8 Xuto (1987).
- 9 Interviews with officials from the Police and Royal Thai Forestry Departments, 1991.
- 10 An example of such views is Panpiemras (1991).

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The Impact of Changes in the European Community on World Trade in Agricultural Products*

Dale E. Hathaway

I am told there is an old Chinese curse that says: "May you live in exciting times." If so, then the present citizens of the European Community must feel truly under a spell, because for the third time in this century the political, economic and military map of Europe is being rewritten. Changes are under way that will affect the lives of those in Europe and outside it, just as the events following World War I affected my father's generation, and the events of World War II and its aftermath affected my generation.

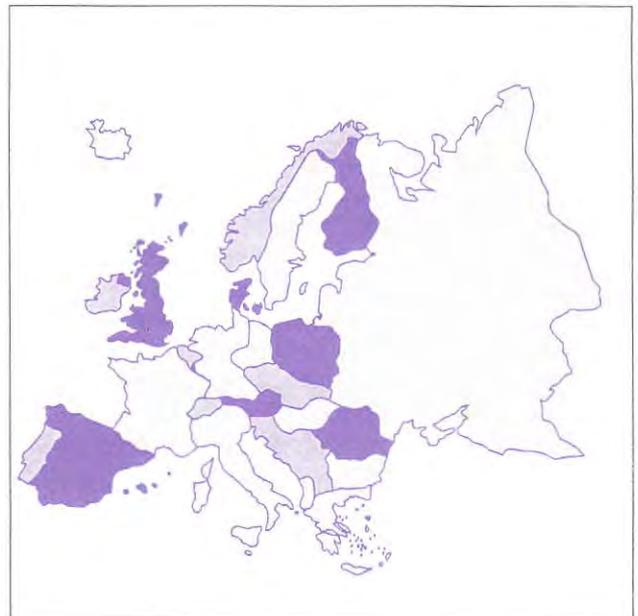
This time, however, these changes are occurring without war and military conquest. They are occurring because millions of people in Central and Eastern Europe want to have a more open and responsive political system and a more productive economic system. This is occurring at a time when the member countries of the EC already have taken major steps to deepen the economic integration begun under the Treaty of Rome more than 30 years ago. Now they must consider how they are to respond to the political and economic changes taking place on their borders. Moreover, after 40 years of successful military response to military threats from the East which were led and heavily financed by the United States, Western Europe is going to have to both lead and finance the economic and political responses to the new changes.

POLITICAL DECISIONS AND TRADE LINKS

I want to focus my comments on three issues: two are general and one is specific. First, I want to comment on the implications of the future political and economic arrangements between the current Economic Community and the newly emerging democracies in Central and Eastern Europe. It appears there are three directions the present EC can go. One is to expand its economic integration to include most or all of Central

and Eastern Europe at some point. A second option is to provide certain favored access to EC markets for some products from these countries. The third option is for the present EC to treat these former communist countries as they do the rest of the world in terms of political and trade ties.

If the decision is made to fully integrate these countries into the EC, it will mean that the countries will have strong reason to defend the EC trade policies, and little reason to be concerned with the wider world trading system. If the EC decides to establish a truly integrated trading block from the Atlantic to the Urals, it is inevitable that other countries will follow in their spheres of economic interest. It is easy to envision a Western Hemisphere Common Market and a Pacific Common Market following close behind, early in the



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next century. In that event, the interest in and support for GATT (General Agreement on Tariffs and Trade) would almost certainly decline, and the political dynamics of trade would certainly change.

Conversely, if these countries remain outside the EC but heavily dependent upon it for markets, they will continue to push for greater market access, as they already are doing. This would give them a great incentive to participate in GATT and to push for trade liberalization within that forum. If, however, the EC gives these countries some preferred access on some products, this can be used to induce countries to mute their criticism of EC trade policies, just as the EC sugar policies mute the criticism by the CAP (Common Agricultural Policy) countries by giving them favored access to the EC market at the expense of the rest of the world market.

MACROECONOMIC ISSUES

Turning to a major macroeconomic issue, it is surprising to me how little attention is being paid to the implications of having a huge geographical area with over 500 million people suddenly enter the world market system. We already have seen the impact of the reunification of Germany on world capital markets, as the savings of one of the world's major capital exporters suddenly were diverted to the former East Germany. It appears likely that this huge area, newly opened to world capital markets, will have a significant effect on the cost of capital by increasing the demand for capital and, absent an increase in world savings, driving up the real price or interest rates.

The likely effect on world capital markets is clear. The likely effect on world labor markets is less obvious. What does it mean to have a huge, relatively well-educated labor force suddenly competing in world markets? Will workers from the East replace the existing guest workers in the EC labor force? Will investors looking for low-cost manufacturing sites from which to export to Europe now invest in these countries instead of in Asia, Africa or Latin America? Many of the answers to these questions will depend on how the political leaders in the EC answer the questions regarding the future political and economic relations with these eastern countries.

REFORM OF THE COMMON AGRICULTURAL POLICY

At long last it appears that some significant reforms of the Common Agricultural Policy (CAP) are under way. These are in response to internal political problems rather than to the GATT negotiations, although they may make the GATT negotiations politically easier. I want to comment on four things: 1) What the CAP reforms apparently involve, 2) Some of the internal and external effects of the reforms if they are adopted as proposed, 3) Some problems which EC policy makers

may not expect, and 4) The effects of the reforms on trade and on the GATT negotiations.

It is said that imitation is the sincerest form of flattery. If so, the United States should be flattered, for according to the Director-General for Agriculture of the EC Commission, the new policy is modelled after U.S. agricultural policy. If that is true, the EC would do well to look carefully at some of the problems the U.S. policy has created, and consider how they can be avoided.

As I understand the proposed policy, its main feature involves dropping the EC's internal support level for grains by some 35 percent. To compensate grain producers for the decline in internal prices, direct compensation would be paid in the form of deficiency payments. In the case of producers with a larger area of grains, the payments will depend on the maintenance of a set-aside of a certain percentage of their area under grain production. The program for oilseeds would be revised to try to meet the objections of the 1989 GATT panel to the previous program. Deficiency payments would be made directly to farmers to bridge the gap between an EC reference price and the EC target price. If the world price deviates more than 8 percent from the reference price, the payment will be adjusted for the additional difference.

The internal support level for dairy products would be reduced by 10 percent, with the reduction largely in the support level for butter. In addition, the individual production quotas for milk will be reduced modestly. Farmers will be compensated via direct payments for the reductions in quotas.

The support level for beef will be reduced by 15 percent. Payments to producers using extensive beef production methods (forage) will be increased. Changes in the sugar policy were left for further consideration.

I want to examine three aspects of the proposed new policy. First, I will discuss the consumption effects of the changes. Second, I will speculate on the production effects of the changes and suggest some problems that might be encountered in light of the U.S. experience. Finally, I will comment on the trade effects of the changes and the possible links to the current GATT negotiations.

The EC has been demanding an opportunity to 'rebalance' protection at the border to reduce the demand for imported grain substitutes and to reduce the internal demand for imported oilseeds. All attempts at rebalancing by increasing the border protection on the present duty-free imports of grain substitutes and oilseeds have been rejected by the exporters of these products, although Thailand and other cassava exporters were forced to accept an export restraint agreement on cassava. The proposed CAP reform would bring about rebalancing and, moreover, it does it in a way in that exporters cannot object to or challenge in GATT.

The reform will achieve rebalancing by eliminating the distortions that created the artificial import demand

for grain substitutes. Internal grain prices will fall and EC feed users will use local grain and oilseed meals to produce the least-cost feed mixes. The least-cost mix will no longer consist of imported grain substitutes and excessive quantities of oilseed meal. The use of EC grain will expand and the cost of production of EC livestock and poultry products will be reduced. This allows the support level of dairy products and beef to be lowered, but it will have little or no effect on the retail price and the consumption of these products.

Thus, on the demand side, the effect on the demand for agricultural products within the EC will be increased modestly, but the demand for feedstuffs will be switched heavily from imported grain substitutes to domestic grains. This, in turn, will reduce the quantity of grains that enter export markets from the EC.

On the production side, the reform program does not decouple the deficiency payments from current production. It is true that the payments are not made on current individual farm yields, but they are made on the current area planted to grains or oilseeds. Moreover, since the payments are made on recent average regional yields, by definition many of the farms will be receiving higher income from growing these crops than they received before. In any case, as long as the payments are conditional on growing the crops involved, there will be a powerful incentive to continue to produce the crops concerned. The use of past regional average yields should reduce the very high levels of fertilizer application that have contributed to very high yields in the Community and to its considerable pollution problems.

The EC is depending on set-asides to reduce and control cereal and oilseed output. It is likely to be surprised at what a blunt tool this is to achieve output control. First, the EC is not requiring farms that produce less than 92 tons of grains and oilseeds to participate in the set-aside program. According to Community figures, these producers account for 80 percent of the holdings and 40 percent of the area in cereals. Thus the 15 percent set-aside required of the larger farmers will at most involve 15 percent of 60 percent, or 9 percent of the land in these crops. I would suspect that the officials will be surprised to find out how little output reduction is achieved when each farmer takes his poorest land out of production. They also may be surprised to find out that they have fewer large farms than they thought. In the U.S., when limits were put on the amount of direct payment that could go to an individual farm, a whole new legal industry grew up which made small farms out of big farms for government payment purposes. I would be surprised to learn that EC farmers or lawyers were less enterprising, or EC officials more effective, at writing regulations to prevent such circumvention of intent.

In the case of the EC, there will be less incentive to use set-asides as an effective production control tool. In the U.S., larger set-asides save public expenditures because there is no compensation to producers, but in the

EC the savings will be less because there are payments to compensate for some or all of the set-aside requirement. Since there presumably will be no export restitutions required under the new policy, there will not be appreciable savings by reducing the set-aside and there are likely to be a number of pressures to keep them low. EC officials will find that producers of inputs do not like set-asides, nor do owners of storage facilities or the owners of export facilities. Many groups develop an interest in maintaining high levels of farm output and moving the excess into export markets.

SURPRISES AND PITFALLS

When the United States embarked on its use of deficiency payments for major program crops, it did so with an established base acreage of the crops concerned on individual farms. The EC starts without such a base and I predict that they will find out that the total acreage of grains, oilseeds and protein crops claimed by producers substantially exceeds the global estimates of area in recent years. Establishing a base while paying for it is bound to lead to increases in the base.

Second, the EC is going to have to deal with the complex issues of whether size limits apply to ownership or operation, whether payments go to landowners or renters, and a series of other complex legal-economic questions. Moreover, because laws, traditions and practices vary widely between member states, there are likely to be wide differences as to national interpretation. This will raise major political problems of equity between areas.

Third, the proposed reforms are likely to affect land prices, whether intended or not. This raises the question of whether the payments go with the land or the individual. If farms with large land area are treated less favorably under the new program, the incentive for farm consolidation will disappear. That should depress land prices. However, if the stream of deficiency payments is tied to land and transferable with the land, regardless of the size of the resulting unit, it might bolster the price of small farms.

Finally, as has been the case with the U.S., the EC is bidding against itself to achieve conservation and environmental improvements. By making high payments to land in crops, they guarantee it will cost more to convert it to pasture or forest.

TRADE AND GATT

On the trade side, the CAP reform could solve one of the EC's most difficult problems—the need to use export subsidies to export an ever-increasing quantity of surplus grain. EC export subsidies have been a sore point in international agricultural trade for decades and have been a major sticking point in the present GATT negotiations. The reform would allow the EC to accept

the demands of the U.S. and Cairns Group to scale back or eliminate export subsidies. Moreover, since the export subsidies on meat and poultry products are supposed to merely off-set the higher cost of domestic feed, these could be reduced or eliminated also.

The CAP reform will make a second contentious issue irrelevant. The EC has demanded rebalancing as their price for accepting tariffication. Now they can drop rebalancing and move on to more important issues.

The CAP reform clearly revolves around the cereals policy. EC documents make several assertions and the proposed reforms clearly are based on certain assumptions. They assert that the deficiency payments are unrelated to current production, thus implying that they are decoupled and should be included in the 'green box' for GATT purposes. They assert that the oilseed reforms meet the GATT panel's objections to the current program. They suggest that land set-aside will be effective production controls for grains.

However, before becoming too enthusiastic about the reforms, one should remember that the changes do nothing to increase access to EC markets. They do not remove community preference or variable levies, so that despite claims of greater competition in internal markets there is no indication of how or why it would occur. As long as EC production policy aims at self-sufficiency or more, and pays producers well above world market prices to produce that amount, there is no great breakthrough in access in the policy.

It is true that the proposed system is similar to that used by the U.S. I would suggest that EC officials ask Thai or other members of the Cairns Group about their views of the U.S. deficiency payment system as a trade distorting policy. My impression is that they view deficiency payments on exported products as being almost as bad as direct export subsidies, and they certainly view them as trade-distorting subsidies because of their output effects.

If the proposed EC policies were to be classified as production-neutral and not trade-distorting, it would be relatively easy for the EC to agree to large reductions in trade distorting subsidies, especially if they were allowed to use an aggregate measure which aggregated all

agricultural products. I would be surprised if other countries would agree to this definition, especially as the U.S. appears to be in the process of challenging the revised oilseed program for not removing the impairment of the EC binding on oilseeds.

Thus, in summary, I would view the proposed EC revisions of the CAP as having a modest positive effect on trade because it would remove direct export subsidies as a method of export competition. It would destroy the artificial market for grain substitutes in the EC, and have an adverse impact on those dependent on that market. However, the most these exporters can expect is sympathy because their market has depended on bad policies within the EC and it is too much to expect the EC will continue to run such a policy for the benefit of others. I think the proposed changes will have only a minor effect on the ability to reach a satisfactory GATT agreement. If all that the U.S. and the Cairns Group wanted was a scale-back of export subsidies, this would go a long way towards allowing it. If, however, as I believe, they also want a substantial scale-back in trade-distorting domestic subsidies, these CAP reforms are unlikely to be accepted as a substitute for real reductions in output-increasing domestic programs. And, the reforms clearly do not allow greater access to EC markets.

On the side of political speculation, I would think that the reforms might make GATT changes harder to accept among EC producers, especially large producers. These producers already are greatly concerned by the proposed reforms. If there is an attempt to impose GATT-agreed cuts on top of unwanted reforms, it seems to me that opposition to the changes might increase to the point where EC political leaders are unwilling to enforce them. As I understand, the German government has agreed to negotiate reductions in subsidies in GATT, if EC farmers are fully compensated for any potential reductions in income. Since the proposed CAP reforms already are scheduled to increase the cost of the CAP by a significant amount, it appears that any significant GATT agreement will carry a major budget cost for the EC at a time when it wants to spend less, not more, on agricultural income transfers.

The Impact of Political Changes in Europe on Its Agricultural Policies*

Sir Michael Franklin

When the political map of Europe was abruptly changed at the end of 1989, the European Community (EC) was preoccupied with its own internal organization. Following a period of stagnation in the early 1980s, the EC had galvanized itself into a period of intense activity. At the heart of the new agenda was the plan to create by the end of 1992 the truly single market which the architects of the EC had always intended but never achieved. That program is well on the way to fulfillment but there will still be work to be done long after the end of 1992 to remove all obstacles to the free circulation of goods, capital, people and services throughout the whole EC. Once the 1992 program was on its way, the Community turned its attention to other long-standing sores and achieved some useful improvements in getting the Common Agricultural Policy (CAP) under better control and in relation to some of the inequities and inadequacies of its budgetary system. Flushed with these successes and eager for more, the EC Commission—encouraged by the European parliament and most of the member states—began to plan the next leap forward. This was to be no less than full economic and monetary union (EMU) and what were widely felt to be the necessary accompanying steps toward a political union (whatever that term turns out to mean).

Thus were borne the two intergovernmental conferences of the existing member governments—one on EMU and the other on political union—which are due to produce draft treaties which the heads of government can endorse, or argue about, at the European Council meeting in Holland next month. It seems likely though not certain that compromise deals will be struck on both subjects. Germany has made it clear that it will not agree to EMU unless there is agreement on political union. The broad outlines of the agreement on EMU are already clear. The Community will move fairly rapidly from its present position to a preparatory stage in which currencies are locked more closely together, the coordination of economic and budgetary policies will be more intense and some embryonic European central banking system will be set up. The Treaty will clearly

envisage the eventual movement to a single currency—the ecu. The difficult part of the negotiation is determining the conditions for the move to the single currency: some countries do not want to go at the pace of the weakest economy, some countries do not want to be left behind, and Britain (because of its obsession with parliamentary sovereignty) wants to leave the final decision to a later British parliament. With a single currency goes a single European central bank but just how independent it will be of national governments is another contentious issue. It thus seems reasonably certain that Europe will have a single currency one day but not for some years.

The negotiations on political union are more complex, less advanced and the subject of many cross currents. At one extreme, Germany and Italy are keen to increase the powers of the European parliament and are ready to see the competence of the EC extended to other areas, notably foreign policy and security. At the other end of the spectrum stands Britain, which prefers to leave security questions with other European organizations, wants foreign policy to remain a matter of cooperation between the states, is not keen to extend the competence of the Community and opposes giving much more power to the European parliament. On some but by no means all of these issues France has the same attitude, but what is likely to determine the shape of the final outcome is what sort of deal the French and the Germans can strike. The Franco-German alliance has long been a potent force in determining the direction of EC policy.

UPHEAVAL IN THE REST OF EUROPE

Into the midst of all this intense internal activity has come the dramatic course of events in the Soviet Union, the unification of Germany and the overthrow of the communist dictatorships in Central and Eastern Europe. The speed and unexpectedness of these events have left everyone reeling.

* Paper presented at the TDRI Seminar on "The Impact of Political Changes in Europe on Its Agricultural Policies," sponsored by the Ministry of Commerce and held at the Regent Hotel, Bangkok on November 7, 1991.

From the point of view of the EC, it was the collapse of the Berlin Wall which had the most immediate impact. Once it became clear that the East Germans wanted to unite with their West German brothers and sisters, the die was cast. As soon as the two parts of Germany became one, the former East Germany automatically became a part of the EC. Memories of the Second World War caused disquiet at the prospect of a strong and united Germany again but the German government was assiduous in assuring the other member states that Germany intended to remain a good Community partner. These political fears were also assuaged by the realization that the process of economic integration was going to be much more difficult and expensive than the first optimistic assessment. As a result, the German budgetary position has drastically worsened and the Deutsche mark has ceased to be the strongest currency in the EC. This has probably made agreement on EMU easier. The decision to join the two currencies at parity may have been politically necessary, but it has certainly rendered much of East Germany's industry uncompetitive. The process of industrial privatization has thereby been rendered more difficult. The process of transferring land to private ownership is also proving to be a tricky one. East German agriculture was historically very productive but under communist rule became inefficient and over-manned. The social desire to break up the large farms created by the communists is now doing battle inside Germany with the economic desire to avoid recreating the small-farm size which has made much of West German agriculture so inefficient. Eventually, Germany may find itself, like France, with an efficient agriculture in the North and a relatively inefficient agriculture in the South. What effect this will have on German policy toward the CAP is an interesting speculation.

The Soviet withdrawal from Central and Eastern Europe opened a veritable Pandora's box of fresh political, social and economic aspirations. Political pluralism and a free market economy became the order of the day. All looked toward the evident prosperity and technical advance of Western Europe as their new goal. Most have expressed a wish to become members of the EC. First in line come the three countries of Eastern Europe which are most advanced along the tricky path of conversion from a centrally-planned dictatorship to a democratically-run market economy—Poland, Hungary and Czechoslovakia. As a first step, they are currently negotiating special trade arrangements with the EC which have run into difficulty because of the EC's reluctance to concede adequate access for textiles and agriculture—the areas in which these countries have comparative advantage.

Still further off from eventual membership lie Bulgaria and Rumania, but the EC cannot be indifferent to the struggles they face in making the transition. In the Balkans, the withdrawal of Soviet hegemony has brought

to the surface long-standing but suppressed ethnic and tribal rivalries. The current disintegration of Yugoslavia is the most obvious symptom, but one of the reasons that the EC has been so active in trying to secure peace has been the anxiety that the disputes will spill over into neighboring countries, including Greece, an EC member.

As a result of the break-up of the Soviet Union, some of the states geographically closest to Western Europe, like Georgia, Moldavia and even Armenia, may well seek to develop closer links with countries whose neighboring countries are or are likely to be EC members. There is even talk of an independent Ukraine, a country the size of France, possibly wanting to join the EC.

THE EUROPEAN ECONOMIC AREA

While all this turmoil has developed to the East, the EC has been dealing with its nearest neighbors, notably the members of the European Free Trade Area (EFTA). The EC has for some time had close trading relations with the EFTA countries but when one of them, Austria, decided to apply for full membership of the EC, the Commission proposed instead the creation of a European Economic Area (EEA) which would share with EFTA most if not all the economic characteristics of the EC without the political and institutional obligations of membership. Negotiations to that end have continued for some time but, not surprisingly, have run into difficulty. From the EC's point of view, it looked like a device to avoid or at least postpone the unwelcome question of further enlargement. To some EFTA countries, like Austria and now Sweden, it looks a less attractive option to full membership. Even to Switzerland, which has always been most attracted by the commercial advantages of membership and most concerned lest its neutral position in Europe should be prejudiced, the attractions of the EEA now appear less evident. Norway cannot make up its mind whether it wants to apply for membership (again) or not. Other non-EFTA countries have applied to join the EC as well. In particular, Turkey's application has caused the EC some embarrassment, given on the one hand its strategic position in Europe and on the other hand its human rights record, its different cultural and religious background and its very low standard of living. The EC is likely to procrastinate.

EFTA or the EEA hold no attraction for the countries of Eastern Europe. They do not all want to embrace and certainly could not stand the competition from the free-market system personified by EFTA or the EEA. What they want most of all is political integration with the West, and that means membership in the EC however long it takes to get their economies into a fit state.

THE EC'S DILEMMA

Thus the momentous changes elsewhere in Europe have brought the EC to a crossroads. Despite the important differences among themselves, all 12 of the existing EC members are committed to a steady deepening of their already close economic and political relationships. That is their agenda. But there now is a growing queue of countries wishing to take up the EC's contractual commitment to allow any other European country to join their ranks. Once Greece and then Spain and Portugal had thrown off their undemocratic systems of government, they were welcomed into the EC despite their economic backwardness. That enlargement of the Community has been accommodated with remarkable ease. But the changes in the USSR and Eastern Europe are of quite a different order. The EC can no longer monopolize the term *Europe*. Instead the EC has to find a way to reconcile its old, sometimes introverted, preoccupation with West European integration with the challenge of political and economic reconstruction across the continent.

How that is to be done remains unclear. Should the existing EC members remain the 'hard-core' of Europe, building around them concentric circles of countries with lesser ties? Can the decision-making processes of the EC be strengthened sufficiently to absorb a gradually increasing, perhaps substantially increasing, number of new member states? Where would it be reasonable to draw the line around an enlarged EC?

It is hardly surprising that the debate about these issues has hardly begun. There is uncertainty at every turn. While the Soviet military threat which constituted the Cold War has disappeared, there remain many potential trouble spots in and around Europe to make security issues of continuing concern. Europe's ability to react to an event like the Gulf War is the subject of serious debate. New-found political freedoms are not irreversible. The traumas involved in changing the economic systems in the ex-communist countries will certainly produce political instability as events in Rumania demonstrate. Economic distress or ethnic unrest may trigger massive movements of people. Migration is likely to be one of the major issues for Europe over the next decade.

THE IMPLICATIONS FOR EUROPEAN AGRICULTURE

The current proposals for reforming the CAP are only the latest in a long series of efforts to remove the perceived defects in the EC's agricultural policies. More radical than some of their predecessors, they would nevertheless leave the basic framework of the CAP intact. The Commission has felt constrained to put these ideas forward for three main reasons. First, public opinion in the EC has become increasingly critical of the

CAP's evident weaknesses. It puts up the price of food. It creates surpluses which are unsalable except at knock-down prices. It swallows a disproportionate share of the EC's budget. It gives the EC a bad name internationally. And, in addition to all that, it fails to achieve its principal objective of maintaining farm incomes.

Second, concern over the environment has greatly changed attitudes toward agriculture. By many it is seen as a major polluter, destroyer of natural habitat and a despoiler of the countryside. As the awareness of the scale of the environmental problem has grown, and the pressure groups correspondingly have become more influential, the power of the farming lobby has declined—though it still remains much stronger than agriculture's contribution to gross national product would ever suggest.

Third, comes international pressure. Changes to the CAP in the past have followed internal pressure and most attempts in the GATT (General Agreement on Tariffs and Trade) to discipline the CAP have been unsuccessful. In the Uruguay Round, it has been recognized from the outset that agriculture would play a dominant role. It may be doubted whether propaganda by the Australian Government addressed to the consumers of the EC will do more than irritate. But the realization by other important economic groupings in the EC is that their ability to secure the GATT reforms which they seek is being prejudiced by the EC's meagre response in the agriculture negotiations and is putting some pressure on EC governments. Nevertheless it remains likely that what Agriculture Ministers can decide among themselves will set the boundaries of the EC position in the GATT, rather than the other way round.

So far, the revolutions in Eastern Europe have served more as a break than a stimulus to CAP reform. Farmers fear that they will have to face new competition from Eastern Europe and are, therefore, more reluctant to see their government offer international concessions. This perception among farmers is unlikely to change, even though the threat of competition in their own markets may be less than the prospects for sales as the states of the Soviet Union and Eastern Europe improve their ability to pay for much needed food supplies. For the moment, food aid is bridging some of the gap between need and ability to pay.

The need to improve the efficiency of agriculture in the Soviet Union and in the newly-democratic countries of Central and Eastern Europe is self-evident. Agriculture can and probably should spearhead the necessary economic reconstruction. To do so it will need resources and access to markets, especially the EC market. How far the EC is prepared to help remains an open question. But these needs ought to be taken into account in the discussions about the future of the CAP. Up to now, they have not been.

Esso Contributes to TDRI's Endowment Fund

Esso Standard Thailand Ltd. recently donated 630,000 baht, or US\$ 25,000, to TDRI's Endowment Fund, as the first installment of a total donation of 3.15 million baht, or US\$ 125,000.

Mr. David H. Ledlie, Esso's Chairman and Managing Director for Thailand, presented the check for the first installment to Dr. Ammar Siamwalla, TDRI President, in a ceremony at the Institute's office on Soi Asoke.

On the same occasion, Mr. Smit Tiemprasert, Esso Director, also generously donated 100,000 baht to the endowment fund.

The TDRI endowment fund, supported by contributions from private companies operating in Thailand and other friends from abroad, will help finance construction of the Institute's new building and also ensure its long-term growth and financial stability.



Shown from left to right: Mr. Rangsan Supapong, Esso's Public Affairs Manager; Dr. Twatchai Yongkittikul, TDRI's Executive Vice-President; Dr. Ammar Siamwalla, President of TDRI, and ESSO Directors Messrs. David H. Ledlie, Smit Tiemprasert and Stephen V. Arbogast.

Dr. Twatchai Yongkittikul Promoted to Executive Vice-President

TDRI has announced the promotion of Dr. Twatchai Yongkittikul, until now the Institute's Director of Planning and Development, to the post of Executive Vice-President.

Dr. Twatchai, a native of Bangkok, has been with TDRI since 1985. He was unanimously elected to his new post at a recent joint session of TDRI's Board of Directors and Council of Trustees.

Dr. Ammar Siamwalla, TDRI President, said of Dr. Twatchai's new promotion:

"In the coming years the Institute plans to do more work outside Thailand itself. With his outstanding record, Dr. Twatchai is the ideal officer to coordinate and administer such work."

Dr. Twatchai's principal duties in his new post will be to administer the institute's finances and to oversee TDRI's international operations. He will also assist Dr. Ammar in TDRI's fund-raising campaigns to enlist support from companies operating in Thailand, as well as to obtain increased support from abroad.

"This last will be a highly important part of Dr. Twatchai's new job." Dr. Ammar said. "If we are to serve Thailand better and to the best of our ability, we simply need more funds."

Before coming to TDRI, Dr. Twatchai served for 19 years with the National Institute of Development Administration (NIDA), beginning as a Lecturer and finishing as Vice-Rector for Academic Affairs.

Dr. Twatchai holds a Ph.D. in Economics from the University of Illinois and a Master's degree in Development Economics from Williams College, both in the United States. He did his undergraduate studies at Thammasat University, receiving his Bachelor's degree in Economics from that university in 1963.



TDRI Co-organizes Environment Conference with Herald Tribune

The International Herald Tribune, in association with TDRI's Natural Resources and Environment Program (NRE), recently organized a major conference on "Asia and the Pacific: Merging Business and the Environment," held at The Regent Hotel, Bangkok, from January 23 to 24.

The Conference, attended by some 250 participants, served as a forerunner to Earth Summit '92, to be held in Rio de Janeiro in June this year. The event brought together a distinguished group of government officials, environmentalists, and business and financial leaders to discuss pressing world environmental issues and trends. The main focus was on the Asia-Pacific region.

Distinguished speakers included H.E. Anand Panyarachun, Thailand's Prime Minister; H.E. Mechai Viravaidya, Minister of the Prime Minister's Office; Dr. David Bellamy, botanist, conservationist, writer and broadcaster; Mr. Arthur Dunkel, Director General of GATT (General Agreement on Tariffs and Trade); Sir Edmund Hillary, conqueror of Mount Everest, explorer, author, and diplomat. Dr. Dhira Phantumvanit, NRE Director, gave a speech on "Business Solutions to the Urban Challenge."

NEB and TDRI to Host Conference on Hazardous Waste

TDRI, in association with the National Environment Board (NEB), is to host the "1992 Pacific Basin Conference on Hazardous Waste," to be held from April 6 to 10, 1992, at the Ambassador Hotel, Bangkok. The Conference is being sponsored by the Pacific Basin Consortium for Hazardous Waste Research (PBCHWR), together with a number of national and international agencies, including the U.S. Environmental Protection Agency, the United Nations Environment Programme (UNEP), and the National Institute for Environmental Health Sciences, U.S.A.

As part of the Conference, PBCHWR is sponsoring two-day training courses on hazardous waste management. The training courses, to be conducted simultaneously with the Conference, are open to all conference participants. PBCHWR is also providing a three-day technical program for professionals from industry, government, universities and non-governmental organizations to exchange views on what should be done about hazardous waste. Some 200 participants from North America, Asia, and Australia are expected to attend.

Dr. Dhira Phantumvanit, Director of TDRI's Natural Resources and Environment Program, is to serve as Conference Chairman.



Conference Chairman Dr. Ammar Siamwalla, TDRI President (left), and H.E. Anand Panyarachun, Thailand's Prime Minister, who gave the opening address.

TDRI Organizes Final Seminar for the Project "Manpower Planning for the Development of Industry and Services."

TDRI's Human Resources and Social Development Program (HRS) recently organized the final seminar for the project "Manpower Planning for the Development of Industry and Services." This was a National Economic and Social Development Board (NESDB) project, funded by the United Nations Development Programme (UNDP), with the research being carried out jointly by TDRI's HRS Program and its Science and Technology Development Program (STD); the Faculty of Economics, Thammasat University; the School of Development Economics, the National Institute of Development Administration (NIDA); and the Forecasting Unit, Chulalongkorn University.

The project studied the manpower structure in industry and services, manpower demand and supply projections to the year 2000, the models and problems with on-the-job training, and policy recommendations on manpower development and promotion of on-the-job training. The seminar took place from February 20 to 21, 1992, at Ambassador City, Jomtien, Chon Buri. Some 60 participants from the government, academia and private institutes attended.

TDRI to Conduct Master Plan Study for State Railway of Thailand

The State Railway of Thailand (SRT) has commissioned TDRI to carry out an "SRT Master Development Plan Study." The study's aim is to develop a long-range master plan for satisfying Thailand's economic and social needs over the next 20 years. The plan should provide an accurate picture of SRT's future and what role it should play in Thailand's economy.

The contract between SRT and TDRI was signed on January 20, 1992, by Mr. Somchai Chulacharitta, General Manager of SRT, and Dr. Ammar Siamwalla, TDRI President. The project, headed by Dr. Chalongphob Sussangkarn, Director of TDRI's Human Resources and Social Development Program and Acting Director of its Macroeconomic Policy Program, will take seven and a half months to complete. It has a budget of 14.1 million baht.

Shown at the signing ceremony, foreground from left to right, Dr. Chalongphob Sussangkarn, Director of TDRI's Human Resources and Social Development Program and Acting Director of its Macroeconomic



Policy Program; Dr. Ammar Siamwalla, President of TDRI; Mr. Somchai Chulacharitta, SRT's General Manager; and Mr. Minitchai Snitbhan, SRT's Policy and Planning Chief.

NEW PROJECTS

New Contracts for TDRI's Sectoral Economics Program

TDRI's Sectoral Economics Program (SEP) recently won a bidding contract to study the competitiveness of the canned seafood industry. SEP has also recently begun two new projects on agriculture— "Rice Research Priorities," funded by the Rockefeller Foundation; and "Rice Demand and Supply Situation," financed by the International Rice Research Institute (IRRI).

TDRI Team to Study Intermediate Goods Industries

The Federation of Thai Industries has contracted TDRI's International Economic Relations Program (IER) to conduct a study on "Developing the Intermediate Goods Industries." The study, to be completed in February, 1993, will be conducted in cooperation with a team of contracted researchers consisting of Dr. Jongrak Raruaysong, Dr. Sudhama Yoonaidharma, Dr. Sakda Thanitcul, and Dr. Chumporn Pachusand.

ESCAP Commissions TDRI to Prepare Country Paper

TDRI's International Economic Relations Program (IER) is preparing Thailand's Country Paper on "Promotion of International Competitiveness and Exports of Manufactured Goods" for the Economic and Social Commission for Asia and the Pacific (ESCAP). The paper will be presented at the regional symposium on "Trade and International Competitiveness in Manufactured Goods," to be held in Bombay from May 13-15, 1992.

TDRI to Conduct Trade Forecast for Ministry of Commerce

The Ministry of Commerce has commissioned TDRI's International Economic Relations Program (IER) to undertake a project entitled "International Trade Database and Trade Forecast for Thailand." The project, for the Ministry's Department of Business Economics, began in March 1992 and is to be completed by March 1993.

TDRI's Science and Technology Development Program Completes Study on Private Sector R&D

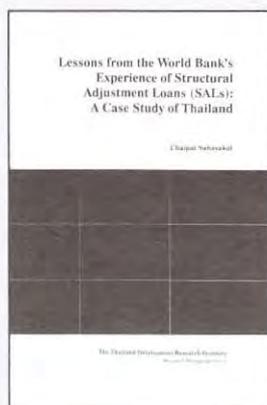
Although many countries have struggled to abolish poverty and generate prosperity, only a few have been successful—Japan and the Asian NICs (newly-industrialized countries), for example.

The experience of the Asian Pacific Rim economies clearly shows that to generate and sustain economic growth, research and development (R&D) and other technical activities are vital. Such activities initially require government support—in S&T (science and technology) infrastructure, tax and financial incentives, and legal and policy frameworks. Commitments to improving and generating technical ability by companies are equally important. These are precisely the weaknesses in Thailand's industrial development—little R&D and other technical activities—resulting in low technological capability and competitive ability in Thai companies.

TDRI's Science and Technology Development Program (STD) recently completed a project entitled "Private Sector R&D: Lessons from Success," for the International Development Research Centre (IDRC). Following are some findings from the study:

- Thailand's R&D expenditure is the lowest of the Asian Pacific Rim economies, both in total expenditure and percentage of Gross National Product (GNP).
 - Private sector R&D expenditure in Thailand also ranks the lowest, both in percentage of the country's total R&D expenditure and percentage of total sales.
 - R&D activity in the private sector in general improves technical efficiency and, to a lesser extent, the companies' profitability.
 - R&D activity alone does not guarantee success. Many more technical and—very importantly—marketing activities are needed.
 - Both the market environment (market and technical conditions) and internal factors (production and technological bases) affect decisions to undertake R&D activity in the private sector. While the former is affected by government policy, the latter is largely conditioned by owner/manager attitudes and workers' experience, skill and education.
 - There is no clear public support system for private sector R&D in Thailand. Companies largely depend on their own resources for R&D, or on their foreign partners.
 - The characteristics of a company do not always determine its strategies or performance. Companies with similar characteristics can have very different business and technology strategies. They may also vary widely in efficiency and profits.
- If Thailand is indeed committed to industrial development, some essential questions must be addressed: How can the technological content of industrial firms' products be increased and how can industrial processes be improved in the short term? How can firms be encouraged to undertake more R&D and other technical activities to sustain growth in the longer run?
- Recommendations from the study are as follows:
- Policy instruments should include:**
- Laws to promote private sector R&D and share resources between government institutes, universities, and private companies.
 - Funds to promote improvements in productivity and product development, particularly those for export.
 - Measures to promote potential industrial sectors and their products.
- Market mechanisms should foster:**
- Gradually abolishing industrial subsidies, ranging from import bans to local content and export stipulations, and prohibitively high tariffs.
 - Ensuring information is equally available to all industrial firms, in particular public information, including such policies as plans, measures, and targets.
- Institutional reforms should target:**
- Encouraging joint task forces for greater industrial development between private firms and the Ministries of Commerce, Industry, and Science, Technology and Environment.
 - Integrating S&T services, such as standards, testing, training, information and consultancies.
 - Relating technology development with other industrial and technical activities—manufacturing, marketing, financing, servicing, and supporting activities, among others.

New TDRI Publication



*Price: 250 baht
(US\$ 10.00, plus
US\$ 6.00 postage).*

Lessons from the World Bank's Experience of Structural Adjustment Loans (SALs): A Case Study of Thailand

by Chaipat Sahasakul.

Thailand's impressive economic success over the last two decades is neither accident nor luck. It has required substantial effort from both the Thai government and technocrats in designing and implementing sound macroeconomic policies. In Thailand's economic history, the period after the second oil shock of 1979 was crucial to major macroeconomic restructuring. The World Bank and the International Monetary Fund (IMF) assisted the Thai government in this structural adjustment.

This study evaluates the World Bank's first and second structural adjustment loans (SALs) to Thailand. The study gives an informed view of Thailand's macroeconomic performance, then presents a historical summary of SALs in Thailand, details policy recommendations and explains why some measures attached to the SALs were implemented while others were not.

Research Monograph No. 8. 107 pp.

Working Papers, Offprints and Research Reports

International Economic Relations (IER)

- "Selected Strategic Industries and Decentralization of Manufacturing for Thailand's National Economic and Social Development Plan 1992-1996," by Wisarn Pupphavesa et al.
- "Trade Development Strategy for Thailand During the Seventh Plan 1992-1996," by Suthiphand Chirativat and Tanasak Wahawisan.
- "Trade and Industrialization Policy Incentives for Implementation Through Private-Public Sector Cooperation," by Paitoon Wiboonchutikula, Seerasak Pongpisanupichit, and Chongrak Raruaysong.
- "The Development of Infrastructure and Supporting Facilities and Prevention Control for Pollution and Environment," by Atchana Wattananukit and Phanu Kritiporn.
- "Industry, Trade and Services Development Policy for the Seventh Plan, 1992-1996: A Synthesis Report." Narongchai Akrasanee et al. October 1990 (in Thai)
- "Development of Infrastructure and Supporting Facilities, and Prevention Control on Pollution and Environment for the Seventh Plan, 1992-1996."

Three Volumes. Atchana Wattananukit and Phanu Kritiporn (in Thai).

- "Trade and Industrialization Policy Incentives for Implementation Through Private-Public Sector Cooperation for the Seventh Plan." Two Volumes. Paitoon Wiboonchutikula, Jeerasak Pongpisanupichit, and Chongrak Raruaysong. (in Thai).
- "Trade Development Strategy for Thailand During the Seventh Plan, 1992-1996." Three Volumes. Suthiphand Chirathiva and Tanasak Wahawisan (in Thai).
- "Selected Strategic Industries and Decentralization of Manufacturing for Thailand's National Economic and Social Development Plan, 1992-1996." Two Volumes. Nattaphong Thongpakde, Wisarn Pupphavesa, Rachain Chintayarangsan, Thammanoon Pongsrikul, and Bunluasak Pussarangsi (in Thai).

Sectoral Economics Program

- "Impact of Political Changes in Europe on Its Agricultural Policies" (also available in Thai)
- "Cassava: Year 2001" (in Thai)

The above publications are available through the TDRI Publications Office, 16th Floor, Rajapark Building, 163 Asoke, Sukhumvit 21, Bangkok 10110, Thailand.

The TDRi Year-End Conference Papers “Educational Options for the Future of Thailand”

The 1991 TDRi Year-End Conference was the outcome of a major team effort in research on Thailand's formal education system, its non-formal education and training system, and on-the-job training in the country.

Published in two volumes, the Year-End Conference papers cover five themes. Each chapter is preceded by a summary in Thai. The accompanying Synthesis Report is in both Thai and English.



Volume I contains the following reports:

SESSION 1 Education and Development of the Thai Economy: Reversing the Imbalance

- “Education and Economic Development: Issues and Options for Policy and Reform,” by Charles N. Myers and Chalongphob Sussangkarn
- “Education, Labor Markets, and Economic Development: Policy Simulations,” by Chalongphob Sussangkarn
- “Three More Years in School: Parents’ Opinions and Problems,” by Orapin Sopchokchai
- “Thai Schooling Investment in an International Perspective,” by Jere R. Behrman and Ryan Schneider

SESSION 2 Education and Social and Cultural Values: The Changing Role of Teachers

- “Education and Social and Cultural Values: The Changing Role of Teachers,” by Akin Rabibhadana and Suchada Patrachokchoui
- “Social Changes and Their Impact on the Teacher’s Role,” by Supang Chantavanich
- “The Changes in Relationships Between Teachers and Students: The Impact on Education and Society,” by Chinnapat Bhumirat and Pensri Arunrungrueng

SESSION 3 Educational Management: Public and Private Sector Roles in the Provision of Education

- “Educational Management: Public and Private Sector Roles in the Provision of Education,” by Phitsanes Jessadachatr, Kanjanee Jiratatprasot, Supaporn Kohengkul, and Chan Tantithamthavorn



Volume II contains the following reports:

SESSION 4 The Changing Face of Agriculture: Designing Appropriate Information and Training Systems for Farmers

- “Designing an Appropriate System for Agricultural Information and Training for Farmers,” by Mingsarn Kaosa-ard

SESSION 5 Education and Training: Supporting the Development of Industries and Services

- “Science and Technology Manpower in Thailand: Toward a Long-term Solution,” by Chatri Sripaipan and Peter Brimble
- “S&T Manpower for Industries and Services: Demand and Supply Projections,” by Kitt Limskul and Thaneit Khantigaroon
- “On-the-Job Training: Theory, Evidence and Policy,” by W. Craig Riddell
- “On-the-Job Training in Thai Industry,” by Nipon Poapongsakorn
- “New and Alternative Approaches to Technical Human Resource Development in Thailand,” by Somchob Chaiyawet

Volumes I and II cost 600 baht each (US\$ 24.00). The Synthesis Report costs 500 baht (US\$ 20.00), and a set of all three volumes costs 1,500 baht (US\$ 60.00).

Award Ceremony Held at TDRI for Photo Contest Winners

Khun Theerapong Leardpratom is the winner of this year's Photo Contest, People: Thailand's Greatest Resource. Born in Trad, the 31 year old Khun Theerapong is an employee of the Petroleum Authority of Thailand (PTT).

Asked how he took the stunning winning photograph which illustrates the cover of the 1991 TDRI Annual Report and the TDRI Year-End Conference Papers, Khun Theerapong explained: "I positioned a laboratory assistant in the foreground, then projected a slide onto a Venetian blind as the background. I used a 28 mm Nikon lens set at a speed of 1/8 of a second and an aperture of F5.6."

Second prize went to Khun Mukkapol Maneenoi, also an employee of PTT, who used a Nikon 16 mm fish eye lens to capture his colorful photograph of fire fighters. He also received an Honorable Mention Certificate for another of his photo entries. Khun Kriangkrai Waiyakit won third prize for his photo, entitled "Building A Foundation," showing building construction at Rajprasong Intersection, Bangkok, and taken with a Nikon 35 mm lens. All three winners used Kodak film.

Cash awards of 15,000, 10,000 and 5,000 baht respectively were presented to the winners by Dr. Ammar Siamwalla, TDRI President, at a special ceremony held at TDRI. The winners also received a plaque and a Kodak camera.

The following photographers received Honorable Mention Certificates: Mukkapol Maneenoi, Sompong



Conference participants at the photo display for the TDRI 1991 Year-End Conference.



Contest winner, Khun Theerapong Leardpratom, proudly holds his first prize plaque.

Poca, Manit Dechsupa, Suwimon Watanawichien, Vechayan Lekvuthikarn, Jitraporn Kijpermpoon, Manit Dejsupa, Vichien Charoensri, Manit Lapluechai, Teerapongsa Lusapanand.

TDRI extends its appreciation to the contest's distinguished judges—Dr. Chalongsob Sussangkarn, Director of the Human Resources and Social Development Program, TDRI; Mr. Phaichitr Opaswongkarn, President of the Photographic Society of Thailand under Royal Patronage; Dr. Sompongse Limpanondh, D.D.S., President of the Bangkok Photographic Society; and Mr. Bhairot Leenavat, President of Siam Color Silde Club.

The Photo Contest, co-sponsored by TDRI, Kodak (Thailand) Ltd, and the Photographic Science and Printing Technology Department of the Faculty of Science, Chulalongkorn University, is held every year and reflects the theme of the TDRI Year-End Conference. Last year the conference's theme was "Educational Options for the Future of Thailand," hence the contest's title was "People: Thailand's Greatest Resource."

Kodak kindly prepared a selection of 40 photographs from the contest for the photo display at the 1991 TDRI Year-End Conference.



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