

TDRI

Quarterly
NEWSLETTER

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Export Promotion and Financing in Thailand

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It is clear that Thailand's phenomenal export growth—especially in recent years—has contributed to the country's current economic boom. During 1986-1988 exports grew at 17 percent annually (in real terms) while GDP growth registered an annual rate of 9.2 percent. Indeed, the total value of exports is expected to exceed US\$ 20 billion in 1989.

During this period, exports also diversified in terms of products and markets. Manufactured goods overtook agricultural and primary products and reached 66 per-

cent of total exports in 1988. Now, compared to eight (8) products five years ago, eleven (11) products account for 50 percent of Thailand's exports. And, although the total export share going to the three major markets combined (the United States, Japan, and the Economic Community), remains the same, there has been a restructuring toward a larger share of the U.S. market and a declining share of the Japanese, plus a larger share of the other countries included in the "rest of the world" (see Table 1).

Table 1 Direction of Thailand's Exports in 1975-1987

(Thousand US\$)-

Major Trading Country	1975		1979		1983		1987	
	Value	%	Value	%	Value	%	Value	%
World	2,162,173	100.00	5,297,343	100.00	6,368,198	100.00	11,627,356	100.00
Japan	606,964	28.07	1,121,468	21.17	960,222	15.08	1,732,101	14.90
US	231,305	10.70	592,975	11.19	952,121	14.95	2,165,401	18.62
EEC 1	349,659	16.17	1,239,339	23.40	1,349,533	21.19	2,586,277	22.24
Australia	20,001	0.93	51,264	0.97	93,409	1.47	215,422	1.85
New Zealand	1,565	0.07	9,350	0.18	12,140	0.19	22,029	0.19
Hong Kong	129,943	6.01	257,291	4.86	316,566	4.97	483,651	4.16
Korea	34,765	1.61	50,591	0.96	91,193	1.43	153,303	1.32
Total ASEAN	372,009	17.21	892,502	16.85	1,000,114	15.70	1,574,365	13.54
Brunei Darussalam	5,926	0.27	6,582	0.12	9,598	0.15	16,879	0.15
Indonesia	39,393	1.82	189,137	3.57	119,750	1.88	61,266	0.53
Malaysia	100,336	4.64	233,560	4.41	285,288	4.48	385,919	3.32
Philippines	34,268	1.58	11,620	0.22	67,556	1.06	70,938	0.61
Singapore	192,086	8.88	451,603	8.53	517,922	8.13	1,039,362	8.94
Rest of the world	415,962	19.24	1,082,563	20.44	1,592,900	25.01	2,694,805	23.18

Source: 1975-1983: Foreign Trade Statistics of Asia and the Pacific Various Series.
1987: Foreign Trade Statistics of Thailand, December 1987.

Note: 1/ Countries in EEC in 1975 not included Ireland, Denmark, Greece, Portugal and Spain.
Countries in EEC in 1979 not included Greece, Portugal and Spain.
Countries in EEC in 1983 not included Portugal and Spain.

This article is a summary of the project report on "Export Financing in Thailand" sponsored by the Asian Development Bank. The report was completed in July and was presented in Manila during the project conference August 1-3, 1989.

Beyond external factors such as the economic growth of the OECD countries and the relative export competitiveness of developing countries, this impressive export performance was due to several domestic factors: (1) investment and trade promotion schemes; (2) tax incentives; and (3) export credit financing.

Based on data from 1965 to 1987, TDRI's current forecast predicts continuing good prospects for exports, which are expected to grow at about 16-19 percent in the 1990s (in nominal terms) annually until the year 2000. The most promising are expected to be nontraditional exports with rising comparative advantage (such as canned fruits and foods, shoes, leather goods, toys, jewelry, plastic products, electronics products, and automobile parts and components). All of these are labor-intensive industries. Furthermore, prospective growth in these industries is continually being fueled by intensive foreign investment.

EXPORT PROMOTION POLICIES

Thailand's approach to export promotion is comprehensive, involving investment and trade promotion.

Investment and trade promotion

- **Investment.** The Board of Investment (BOI) gives high priority to export-oriented investment projects. The BOI gives full tax privileges which include the duty-free importing of machinery, raw materials, and parts/components. A promoted business is also exempted from corporate income taxes and, in addition, has privileges which make it easy to obtain all permits necessary for conducting business. Further, the approval process has been expedited. In fact, this export-oriented investment promotion scheme is received very favorably by domestic as well as foreign investors. Since 1960, more than 4,000 projects have been given BOI privileges—and in 1987 and 1988 alone, 2,079 projects were approved. During these last two years, of the 2,079 projects approved by the BOI, 1,540 projects were export-oriented (with export sales of more than 80 percent).
- **Trade Promotion.** The BOI also promoted 15 international trading companies (by giving them tax benefits) and all of them play an important role in promoting Thai exports.

Tax and other incentives

- **Tax Exemptions.** Some other incentives include exemptions from the export sales tax, and incentives in the form of tax refunds (or drawbacks) and tax rebates. These two schemes have proved very popular, with the amount refunded and rebated rising from Baht 1.4 billion and Baht 0.6 billion (in 1983) to Baht 5.5 billion and Baht 4.7 billion (in

1988). And, in 1989, the total amount refunded and rebated for the first six months has already exceeded the amount recorded in 1988 (See Table 2).

- **Other Incentives.** The tax refund and rebate schemes, sales tax exemptions, and incentives provided by the BOI mean, in effect, that exports are subject to taxes on neither inputs nor outputs. Incentives are also provided in the form of bonded warehouses (whereby certain factories are declared tax-free areas) and export-processing zones (which are designated as tax-free zones). At present, 89 factories have been given bonded warehouse status and there are four export-processing zones in operation. Apart from tax incentives of various forms, the government gives export producers a 20 percent cost reduction on electricity.
- **Marketing.** Export companies also benefit from the trade promotion activities of the Department of Export Promotion, Ministry of Commerce. The Department provides training in export techniques and organizes trade fairs and trade missions. It has a special budget created for this purpose which is derived from a 0.5 percent ad hoc surcharge on imports.
- **The Exchange Rate.** In recent years, the exchange rate has been used as a policy instrument for the promotion of exports. In the more than twenty years when the baht was tied to the U.S. dollar (prior to November 1984), parity was slightly adjusted only a few times. In effect, as the baht fluctuated with the U.S. dollar it tended to be overvalued and thus more favorable to imports relative to exports. Beginning in November 1984 (when the government fixed the baht to a basket of currencies), the baht has been deliberately kept relatively soft in order to help exports. And from November 1984 until December 1988, the value of the baht vis-a-vis the major trading partners has declined—by 10 percent a year in real terms.

Table 2 Tax Drawbacks and Rebates for Exports

(Value in Million Baht)

Fiscal Year	Tax drawbacks		Rebates	
	Number	Value	Number	Value
1983	25,445	1,372.40	-	593.30
1984	34,632	1,839.70	-	1,481.70
1985	47,781	2,992.50	-	1,753.50
1986	57,728	3,069.07	32,321	2,336.31
1987	66,579	3,916.19	43,607	3,416.53
1988	71,993	5,493.73	44,198	4,677.19
1989	74,875	6,230.15	49,281	4,250.50

(Oct.88-Jun.89)

Source: The Customs Department

EXPORT CREDIT FINANCING

Export credit financing is an important component of Thailand's export promotion policy. There are two types of export financing available: (1) long-term credit to be used to finance initial expenses for fixed assets; and (2) short-term credit to be used for working capital. But of all of the financing facilities, only the Bank of Thailand's (BOT) packing credit facility has been well developed, with a substantial and growing amount of the service used yearly.

- **Long-term Credit for Investment.** The only existing long-term investment credit assistance scheme is the Industrial Finance Corporation of Thailand's "Export Industry Modernization Program (EIMP)" – a two-step loan from the Japanese Overseas Economic Cooperation Fund (OECF). The scheme, started in 1985, provides long-term loans at an interest rate about 3.6 percentage points lower than the market rate. But the scheme only has 6.5 billion yen to lend; thus, the IFCT finances all other export investment projects at market interest rates just like loans for any other purposes.
- **Short-term Credit.** The BOT's packing credit facility is directly aimed at promoting exports. This facility provides an interest subsidy equivalent to about 2.5-3 percentage points. Beginning in 1956, the amount of packing credit granted has grown with the value of exports. It reached baht 128.6 billion in 1988, or about 40 percent of Thailand's total export value (see Table 3 and Figure 1).

In September 1988 the Bank of Thailand announced a new procedure for granting export credit. Under the original procedure, the Bank of Thailand gave exporters packing credit through commercial banks. The total

Figure 1 Export Credit Refinanced by the Bank of Thailand

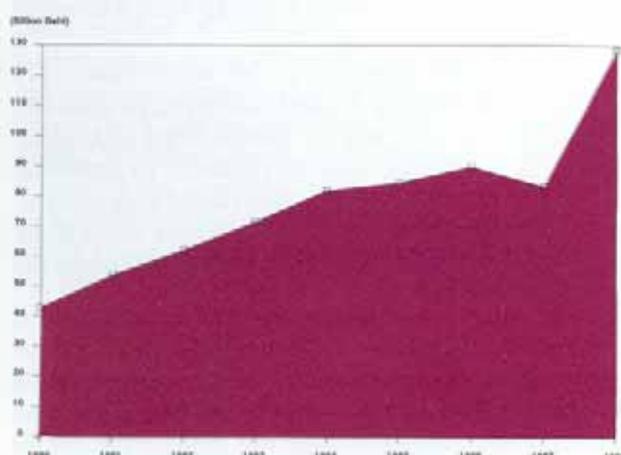


Table 3 Export Credit Refinanced by the Bank of Thailand

Year	Value (Million Baht)	Growth Rate (%)
1980	42,852	-
1981	53,720	25.4
1982	62,014	15.4
1983	71,325	15.0
1984	81,751	14.6
1985	84,350	3.2
1986	89,649	6.3
1987	83,089	-7.3
1988	128,559	54.7

Source: Bank of Thailand

amount funded was in proportion to the percentage of the amount in export documents in each category, i.e., 80 percent of the value in a Letter of Credit (L/C). In this respect, the Bank of Thailand charged commercial banks an interest rate of 5 percent per annum, and required them to charge exporters no more than 7 percent of the yearly interest rate on the loan granted by the BOT. Under the new procedure, the Bank of Thailand maintains the original rate of the 5 percent per annum generally given to commercial banks in connection with entrepreneurs in general, but charges the banks only 3-4 percent of the interest rate provided to small exporters and small export manufacturers whose revolving capital is not more than 10 million baht. Moreover, commercial banks must base half of the packing credit on Central Bank funds and the remainder on their own funds. It also requires that commercial banks charge exporters—regardless of size—an interest rate not exceeding 10 percent.

Records show that, in the past, the major beneficiaries of this kind of credit were the large exporters of agricultural products. But recent changes in regulations and procedures have resulted in an increased number of users who are small exporters of non-traditional products (i.e. manufactured goods).

Moreover, ideas for an "export credit guarantee and insurance scheme" have been discussed over the last several years. The government decided to go ahead with such a scheme in 1988, but a change in the Cabinet (in August 1988) delayed its implementation. Previously, the scheme was not considered very necessary because Thailand mostly exported consumer products to well-established markets. The initiative actually came from those construction companies competing for projects in the Middle East. As Thai exports have recently become much more diversified (in terms of both products and markets), the approach is now considered more useful and it is expected that the government will reconsider implementing it as a joint-public and private-sector scheme.

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Policy Biases Relating to the Distribution and Cost of Financial Resources

Dr. Chesada Loha-unchit

This research on the "Policy Biases Relating to the Distribution and Cost of Financial Resources" was part of a broader attempt to identify some of the major biases in government policy and measures with regard to the development of provincial industry. We confined the scope of the analysis to the financial sector in order to identify past and present biases against provincial industrial development with the aim to reduce if not to eliminate them from the system.

The study focused on four areas: (1) the banking system; (2) the Central Bank's policy in allocating financial resources; (3) the Central Bank's interest rate policy; and (4) specialized financial institutions involved in industrial development.

Theoretically, as is argued in various textbooks on money and banking, a unit banking system (operating along the lines of the American system) should be much more conducive to promoting local business community needs than a branch banking system.

Under a unit banking system, there are a large number of single-office banks spread throughout the country. In such a system, ownership is likely to come from the locality where the bank is situated. Since a bank under such a system does not have any branches outside of its locale and its owner comes from the area, there is a greater attachment to lending to businesses in that area. All funds mobilized locally are thus likely to be lent back to the area.

Under a branch banking system, the above premise is no longer necessarily true. Ownership of a branch bank in a certain locale need not belong to people from that locale. It has been argued that "...the close contact between unit banks and the business communities which they serve will be lost when branch offices are substituted for unit banks, owing to the rotation of branch officers who operate as 'strangers,' less well informed of, and less sympathetic to, local needs."¹

Notwithstanding the existing inherent biases of the country's branch banking system against provincial industrial development, a change-over to a unit banking

system would be costly. In fact, there are certain advantages to the branch system.

Indeed, we found that the Central Bank's policy in allocating financial resources to different economic sectors and regions² did not directly create biases against provincial industries—although its implementation of various allocation schemes through commercial banks could have put provincial industries at a disadvantage.

In fact, a number of the major schemes introduced by the Central Bank have been effected with the specific purpose of reducing banking system biases against certain economic sectors and regions. Nevertheless, all such schemes do not seem to have been very effective in correcting bank credit extension biases. However, the measures introduced to support provincial industries have become more explicit over time.

The policy which could have distorted financial institution lending to provincial industry is the Central Bank's control of interest rates through: (1) setting maximum interest-rate ceilings; and (2) discouraging competition in the banking industry. These two factors have reduced the ability and willingness of financial institutions to play the role of risk intermediary.

Further, it was found that specialized institutions (which include the Industrial Finance Corporation of Thailand, the Small Industry Credit Guarantee Fund, and the Small Industries Finance Office) have been contributing toward provincial industrial development, although their impact is still very small. Furthermore, their future role could remain limited if there is no major restructuring of the system.

The recommendations of the study include (1) liberalizing the banking system to allow competition and flexible interest rates; and (2) establishing a specialized institution to channel financial resources to provincial and small-scale industries. If these efforts were successful, there would be no further need for the Central Bank to intervene in allocating financial resources through the various schemes it currently uses.

1 Pham Chung, *Money, Banking and Income: Theory and Policy*. (Pennsylvania: International Textbook Company, 1970), p. 194.

2 Through the provincial credit requirement and rediscount facility to export-oriented manufacturing industries.

Institutional Relationship between TDRI and the Harvard Institute for International Development: History and Accomplishments

Charles Myers

International collaboration between policy research centers is most valuable when it is long-term, engages the interest and commitment of senior professionals in both institutions, involves work on a series of research projects, and results in co-authored publications. This is a first condition for success.

HISTORY

The Harvard Institute for International Development (HIID) has worked with TDRI since 1985. Indeed, establishing such a relationship was facilitated by the fact that many of the individuals involved had worked together before TDRI was set up. For example, Dr. Chalongphob and Dr. Devarajan worked at the World Bank on macroeconomic policy; Dr. Myers worked for Dr. Snoh at the NESDB on health care financing; Dr. Panayotou—during eight years in Thailand—worked with Dr. Snoh, Dr. Anat, and many Thai researchers now working with the Natural Resources and Environment Program. Dr. Virabongsa and Dr. Behrman were together as junior faculty members at the University of Pennsylvania. The DTEC/HIID contract (which began in November of 1985) expanded and formalized the relationship between TDRI and HIID and the individual relationships have become part of the institutional relationship.

During these almost four years of collaborative work, available monies have been used primarily to support close working relationships between a relatively small number of expatriate researchers and TDRI leadership, program directors, and staff. Short-term, one-time consultants have been sent to TDRI when requested by TDRI research programs—for example Joe Stiglitz (conceptualizing rural information markets), David Skole (evaluating TDRI's work on the Geographic Information System), and Joe Kalt (research planning and design for the energy program)—but they are the exceptions. The normal pattern has been one of expatriate commitment of long duration, involving many return visits and participation in many or all collaborative steps—from research planning, design, and fund raising, to data analysis and co-authorship of papers and reports. The expatriates who have been and are working with TDRI in this manner include:

<u>Individual</u>	<u>Field(s) of Work at TDRI</u>
<i>Jere Behrman</i>	Macroeconomic Policy, and Human Resources and Social Development
<i>David Dapice</i>	Industry and Trade
<i>Shanta Devarajan</i>	Macroeconomic Policy
<i>Frank Flatters</i>	Industry and Trade
<i>John Montgomery</i>	Natural Resources and Environment
<i>Charles Myers</i>	Human Resources and Social Development
<i>Theodore Panayotou</i>	Natural Resources and Environment, and Science and Technology
<i>T. Paul Schultz</i>	Human Resources and Social Development
<i>Larry Westphal</i>	Industry, and Science and Technology

In addition, the budget has been used to support sustained periods of residence by some of these individuals at TDRI—again, a pattern most likely to be both cost effective and productive in collaborative work between research institutes. These periods of residence have included: Theodore Panayotou: four months (1985-86), Charles Myers: twelve months (1986), three months (1987), and three months (1988-89); Jere Behrman: 4 months (1987); and Larry Westphal (four months 1988). Several of these individuals have also worked with the President and the Director of Planning and Development of TDRI on institutional development activities, on issues of research program leadership, staffing, cross-program communication and collaboration, and quality control.

One-month stays by these and other individuals have also been supported, as has a visiting fellow appointment at HIID in Cambridge for a member of TDRI's Board of Trustees, Mechai Viravaidya. Had the available budget been larger, other expatriate collaborators would have been willing and eager to be residents at TDRI and TDRI researchers would have been willing to spend time at HIID in Cambridge.

WORK ACCOMPLISHED

Copies of written work accomplished from November 1985 through June 30, 1989, fill ten volumes of quarterly and annual reports submitted to DTEC and USAID. The written work can be divided into five categories: research plans, research designs, proposals, research reports and papers, and memos on institutional development. Informal advice, networking, presentations, participation in TDRI seminars and conferences, and an HIID/TDRI seminar series have also been part of the relationship. (Some examples of collaborative efforts are given at the end of article.)

HIID has worked with TDRI to prepare research plans and research designs and to identify staff for the Natural Resources and Environment program, the Science and Technology program, the Industry and International Economic Relations program, the Energy, Infrastructure and Urban Development program, and the Human Resource and Social Development program. HIID assisted the Research Directors of the Agriculture and Rural Development Program and the Macroeconomic Policy Program to conceptualize and prepare specific research proposals. HIID also helped develop funding proposals for the Natural Resources and Environment Program, the Science and Technology Program, the Industry and International Economic Relations Program, and the Human Resources and Social Development Program. HIID also helped TDRI to secure funding for these research programs and projects and for other institutional activities, and helped initiate and undertake research in Macroeconomic Policy, Natural Resources and Environment, Industry and Trade, Science and Technology, and Human Resources and Social Development. Co-authored papers are being written and/or have been completed in Macroeconomic Policy, Natural Resources and Environment, Industry and Trade, Science and Technology and Human Resources and Social Development.

HIID also helped TDRI prepare concept papers, plans and proposals for an expanded publications program and an integrated database as part of an eventual TDRI Information Center. The publication proposal provided the basis for a revised and expanded publications program at TDRI which began in mid-1987 and which includes a research quarterly and the external refereeing of TDRI monographs and policy studies by Thai and expatriate reviewers. (HIID coordinates the review by expatriates for TDRI.)

Contractual Obligations and Results

The DTEC/HIID contract, while establishing the formal relationship between the two institutes, is also quite specific on outcomes and products relating to TDRI's institutional development which were to be accomplished. Research plans were to be developed for five of the seven TDRI Research Programs. Also to be

provided were: research design help in all seven areas; assistance in fund raising and staffing; assistance with publications and the Information Center; and advice and help on institution building, inter-program collaboration and quality control. Also, collaborative research was to be undertaken.

All of these contractual obligations have been met and all products specified in the contract have been produced. And the work continues. In addition, HIID has played a far more active role in project development, proposal development, proposal writing and fund raising than the contract specified or was anticipated by either institution at the beginning our relationship. Some representative examples of work accomplished from the beginning of the contract to June 1989 appear below.

Examples of Work Accomplished

- Review of Research Plans. (Theodore Panayotou, 1985, Joe Stiglitz, 1986, Robert Evenson, 1987) (ARD)
- Suggestions for the Rural Labor Market Study; memo: "Testing Some Alternative Rural Labor Market Hypotheses." (Joe Stiglitz, 1986) (ARD)
- Recommendations for inter-program collaboration with Natural Resources, Human Resources and Science and Technology. (Theodore Panayotou and Charles Myers, 1985-1989) (ARD)
- Collaboration on proposals for research on reform of banking regulations. (David Cole, 1986) Review of preliminary and later drafts of the results of the study. (David Cole, 1987) (MEP)
- Presentation and transfer of a micro CGE model for analysis of Thailand's structural adjustment experience. (Shanta Devarajan, 1986) (MEP)
- Presentation of a preliminary model for analysis of optimal foreign borrowing strategies, with special focus on indicators of debt servicing capacity. (Shanta Devarajan, 1986) and review and critique of TDRI's work on leading economic indicators. (Jere Behrman, 1987) (MEP)
- Co-authored paper: "Effective Rates of Protection when Domestic and Foreign Goods are Imperfect Substitutes: The Case of Thailand." (Shanta Devarajan with Chalongsak Sussangkarn; initial draft 1987, final draft 1988) (MEP)
- Book chapter for the NIRA project on the implications for agriculture, natural resources, and rural industries of Thailand's transformation into a newly industrializing country. (Theodore Panayotou, 1987) (NRE)
- Review and evaluation of TDRI activities in GIS and recommendations for the future; two reports: "A Report on Priorities for Research at TDRI Using

- Geographic Information Systems," and, "Integrating Geographic Information Systems with Remote Sensing for Land Development Planning" (David Skole, 1988) (NRE)
- Participation in TDRI's study of land reform issues and of ALRO; two reports: "Agricultural Land Reform Policies," and, "Land Reform Policy Recommendations." (John Montgomery, 1989) (NRE)
 - Research planning: "Proposed Five-Year Policy Research Plan in Science and Technology." (Mike Moravcsik, Charles Myers, Theodore Panayotou, and Larry Westphal, 1986) and conceptualization, participation, and writing of final reports of a two-year project analyzing the technological capability of Thai industry. (Larry Westphal) (STD)
 - Research planning and design: "Thailand Toward the Year 2010: Notes on the Science and Technology Module." (Larry Westphal, 1989) (STD)
 - Recommendations on collaboration between the Science and Technology and Industry Programs (see number 3 above), and Agriculture and Rural Development, Natural Resources and Human Resources (Larry Westphal, Theodore Panayotou and Charles Myers, 1985-1989) (STD)
 - Paper: "Thailand: Prospects and Perils in the Global Economy," (David Dapice and Frank Flatters, 1989) prepared for the 1989 TDRI Year-End Conference on "Thailand and the World Economy." (ITR)
 - Concept Papers and Proposal: "Promotion of Analysis and Consideration of Population Consequences of Development Planning and Policy in Thailand," submitted to the UNFPA, Bangkok and New York. (Charles Myers, 1986) Proposal funded, 1987. (HRS)
 - Concept Papers and Proposal: "The Demographic Transition and Reallocation of Health Budgets in Thailand", jointly with the Family Health Division of the MOPH, submitted to the University Research Corporation, Chevy Chase, MD, U.S.A. (Charles Myers, 1986 and 1987) Proposal funded, 1987. (HRS)
 - Research design and methodology: "Use of the Socioeconomic Survey to Describe the Relationship between Fertility and Family Welfare," (T. Paul Schultz, 1987) (HRS)
 - Paper: "Higher Education and Secondary Education: Patterns, Predictions and Planning," (Charles Myers, 1988) (HRS)
 - Co-authored paper: "Economic Transformation and Flexibility of the Education System." (Charles Myers, with Chalongsob Sussangkarn, 1989) (HRS)
 - Paper: "Private Provision of Family Planning Services in Thailand: Trends and Analysis." (Charles Myers, 1989) (HRS)
 - Presentation of a computer model for calculation of shadow prices for natural gas under conditions of pipeline capacity constraints. (Joseph Kalt, 1986)
- HIID/TDRI SEMINAR SERIES:**
- Seminars, 1986:**
- * Dr. Devarajan : "Thailand's Structural Adjustment."
 - * Dr. Westphal : "Dynamic Comparative Advantage in Industry."
 - * Dr. Panayotou/Dr. Kopr/Dr. Myers : "Proposed Research Plan in S&T."
 - * Dr. Stiglitz : "The New Keynesian Economics."
 - * Dr. Stiglitz : "The Economics of Information."
 - * Dr. Myers: (at the TDRI Year-end) "Education and Education Policy in Thai Development."
- Seminars, 1987:**
- * Shanta Devarajan: "Tax Reform in Small, Open Economies."
 - * Robert Evenson: "Intellectual Property Rights: Implication for Agricultural Related Research."
 - * Robert Evenson: "Rural Labor Markets."
 - * T. Paul Schultz: "Fertility and Investment in Human Capital."
 - * Jere Behrman: "Nutrition in Developing Countries: Income, Prices, and Puzzles."
- Seminars, 1988:**
- * Charles Myers: (at the HOMES seminar in Pattaya) "Enrollment and Educational Cost in Thailand."
 - * T. Paul Schultz: "The Relationship between Local Family Planning Expenditures and Fertility in Thailand, 1976-1981."
- Seminars, 1989:**
- * Dwight Perkins: "Long-term Development Studies and Thailand 2010: The KDI/HIID Experience."
 - * Larry Westphal: "An Appraisal of Thai Technological Capabilities."
 - * Charles Myers: (at Hua Hin, HRS Seminar), "Human Resource Problems and Policies: Potential Role of Foreign Donors."
 - * Larry Westphal: "The Development of Technological Capacity in Manufacturing: A Macroscopic Approach to Policy Research for Thailand."

Analysis of Contraceptive Method Choice and Optimum Contraceptive Pricing Structures

Teera Ashakul

Since the Family Planning Program was endorsed as national policy by the Third National Economic and Social Development Plan (1972-1976), the Program has accomplished virtually all of its targets. And as a result, Thailand's total fertility rate has dropped from over 6 children per family (in 1965) to under 3 (in 1985). Correspondingly, contraceptive prevalence increased from 15 to 65 in 1984 (Third Contraceptive Prevalence Survey, 1984) and current use has further increased to 68 in 1987 (Thailand Demographic and Health Survey).

Thus, as prevalence has approached the maximum level observed in developed countries, the National Family Planning Program's focus should shift from recruiting new acceptors (except in low prevalence areas such as in the Yawee speaking villages in the South) to improving the quality and cost-effectiveness of contraceptive use. Indeed, an effort to improve the efficiency of the family planning program is quite crucial in the light of the current situation. *First*, family planning assistance from international organizations and from foreign governments to Thailand has been scaled down. Funding is being shifted to high-population growth countries in Africa and South Asia. *Second*, in Thailand the leading causes of death have changed over the last three decades—from diarrhea, malaria, and dysentery to accidents, heart disease, and cancer. Obviously, these changed conditions have been accompanied by increased demand for curative services and more pressure is being put on the Ministry of Public Health to allocate more resources for these services.

It appears that Thailand's critical family planning problem for the upcoming decades is to maintain—with limited resources—the success already attained by the National Family Planning Program. Thus, it is important that the determinants of contraceptive choice and the effect of socioeconomic changes on contraceptive use be understood. Indeed, this knowledge will provide us with a basis for formulating the most effective family planning program under existing resource constraints.

DETERMINANTS OF CONTRACEPTIVE CHOICE

In order to investigate how socioeconomic factors affect contraceptive choice, the TDRI Human Resources and Social Development Program constructed a discrete choice model based on the hypothesis that the demand for a particular method of contraception is a

function of its price; the prices of alternative methods (where price includes both monetary outlay and non-monetary access costs such as travel and waiting time); and individual preferences for different methods. Various control variables such as age, education, region of residence, working status, and individual preference toward ideal family size were used as proxies for contraceptive method preference.

The analysis of contraceptive choice was based on a sample of 7,576 currently married women between the ages of 15-49 from the Third Contraceptive Prevalence Survey, 1984. The samples of women in rural and urban areas were analyzed separately due to potential differences in contraceptive behavior. Contraceptive method was disaggregated into nine categories according to existing contraceptive method and source structures. These are: (1) the public pill; (2) the private pill; (3) the condom; (4) public injection; (5) private injection; (6) the IUD; (7) female sterilization; (8) natural method; and (9) no method. Because the proportion of publicly-provided condoms, privately provided IUDs, and privately provided female sterilization is low, none was separated into public and private source.

Here, for the sake of space, we will only discuss the effects of contraceptive price changes and the changes in Thai women's ideal family size preference—toward a smaller family. These changes have distinct implications for family planning policy formulation in the context of the above problems.

In general, the model is quite robust in explaining the contraceptive method choice behavior of Thai women. Own-price elasticities of all contraceptive services at all prices are negative and inelastic (see Table 1). In other words, an increase in the price of a particular type of contraception will reduce the likelihood of that method being used, but the magnitude of that reduction appears to be small. Female sterilization and the IUD have the lowest elasticities followed by the publicly-provided pill. Their elasticities, ranging from $-.02$ to $-.09$, suggest that the impact of price changes on the use of these methods would be almost nil.

The effect of women's desire to have additional children on their decision to accept female sterilization is very significant and powerful. In fact, of the impact of various socioeconomic factors on contraceptive choice, the effect of women's desire to have more children on their decision to accept female sterilization is the

Table 1 Price Elasticities of Different Contraceptive Methods^{a/}

Method	Price Elasticity	
	Non-municipal	Municipal
Public Pill	-0.040	-0.085
Private Pill	-0.262	-0.189
Condom	-0.238	-0.256
Public Injection	-0.249	-0.122
Private Injection	-0.313	-0.261
IUD	-0.022	-0.042
Sterilization	-0.022	-0.039

Notes: a/ Price elasticities were calculated with all independent variables set at mean values.

strongest. These estimates suggest that the shift of contraceptive use toward female sterilization, the most important historical trend in contraceptive choice in Thailand of the last decade, may be primarily due to a change in Thai's women's ideal family size preference—toward a reduced family size.

AN OPTIMUM CONTRACEPTIVE PRICING STRUCTURE

The price elasticity estimates presented above (Table 1) in conjunction with certain assumptions on the (average) prices that women pay for various contraceptive methods and the provisional cost per unit of family planning program output (Tables 2 and 3) were used to construct a non-linear optimization program.¹ The program was used to determine the optimum family

Table 2 Average Public Contraceptive Price for Different Contraceptive Methods.

Method	unit: baht at 1984 prices	
	Average Public Contraceptive Price per One Month of Protection	
	Nonmunicipal	Municipal
Pill	2.99	5.74
Injection	16.43	8.21
IUD	1.26	2.52
Sterilization	1.63	2.92

Sources: CPS3, 1984.

planning subsidy structure—a structure which would utilize limited resources to subsidize different types of contraceptive services most effectively. Specifically, it was used to address two questions in the context of the emerging problems discussed above: (1) if the contraceptive price is optimally set, by how much can the public sector reduce the net public resource input of the family planning program without affecting over-all effective protection? and (2) at the existing level of the family planning net public resource input, how much can effective protection be increased through price restructuring?² The results of these two cases are summarized below.

Case 1: Minimize family planning program net public resource input.

The objective of this case was to minimize the net public resource input of the family planning program while holding total effective protection constant.³ By

1 Due to the lack of data, the private market prices of the pill, injectables, IUD, and female sterilization are used as proxies of the public cost of these services. As the private contraceptive market in Thailand is quite competitive, the private market price (which includes normal profit) should be a good proxy for the public opportunity cost of providing contraceptive services. However, in many cases, the private market price may have to be adjusted to obtain a better estimate of the public provisional cost since there is evidence that (1) some private contraceptive providers also receive subsidy funds from international organizations and/or foreign governments (and thus the money market price has to be adjusted upward to obtain a "true cost"); (2) the Ministry of Public Health contraceptive supply cost, particularly of the resupply method (pill, injectable, and IUD), is lower than that of the private sector as the Ministry often benefits from the economy of scale of large-quantity procurement; and (3) the personnel cost and fixed cost per unit of output of private contraceptive sources may be lower than those of public sources as the Ministry of Public Health has to provide services in the "hard-to-reach areas" where cost per unit of output provided is higher. Thus, the use of private market prices as proxies for public provisional costs should be considered as primary estimates. These estimates will be supplemented by the results of TDRI's ongoing project on privatizing family planning services which will collect available data and conduct a survey concerning public provisional costs.

2 The net family planning public resource input is defined as total family planning expenditure minus total receipts from the users (direct charge and/or service charge).

3 The effective protection of a particular contraceptive method was defined as the total number of users of that method multiplied by the method's effectiveness coefficient. A perfectly effective method has an effectiveness coefficient value of one while a perfectly ineffective method has the effectiveness coefficient value of zero. Specifically, it was assumed that the effective coefficients of the pill, injectables, IUD, sterilization, condom, natural method (rhythm and withdrawal), and no method were 0.90, 0.9975, 0.95, 0.996, 0.83, 0.70, and 0.0, respectively.

Table 3 Average Private Market Price

Method	unit: baht at 1984 prices	
	Average Private Money Market Price ^{a/}	
	per Acceptor	per Month of Protection
Pill	17.5	17.5
Injection	55.0	19.9
IUD	168.8	5.6
Sterilization	830.7	9.2

Note: a/ Modified from Table 6.5 p. 58, CPS3, 1984.

examining Table 4.1 in detail it can be seen that family planning net public resource input could be substantially reduced through price restructuring. The net public resource input can be reduced from an estimated baht

54 million to baht 40 million per month (or a total reduction of baht 168 million per year) without affecting effective contraceptive protection. In order to realize this saving, the price of the publicly-provided pill, IUD, and sterilization must be raised. The steepest price increase is for the pill—from around 3 baht and 5.7 baht per month in nonmunicipal and municipal areas, respectively, to 12 baht in both areas. Lastly, it is worth mentioning that a total net public resource input reduction is made possible because, as a result of price restructuring, some women switch from costly and less effective methods to more effective ones and, to a lesser extent, from public to private sources.

Case 2: Maximize Effective Contraceptive Protection

The objective of this case was to maximize effective contraceptive protection holding the total net public resource input of the family planning program constant at the existing level. By examining Table 4.2 in detail, it can be seen that there is not much potential for improv-

Table 4.1 Optimization Program Results under the "Minimize Family Planning Net Public Resource Input" Objective, 1988^{a/}

Method	Initial			Minimized Net Public Resource Input		
	Price (baht)	Effective Protection ^{b/} ('000)	Net Pub. Res. Inp. ('000 baht)	Price (baht)	Effective Protection ^{b/} ('000)	Net Pub. Res. Inp. ('000 baht)
Nonmunicipal						
Public Pill	2.99	1,710	27,568	12.00	1,501	9,171
Public Inj.	16.43	578	2,014	4.36	743	11,579
Public IUD	1.26	623	2,845	2.90	625	1,777
Sterilization	1.63	1,839	13,971	2.94	1,856	11,665
Private Pill		402			416	
Private Inj.		246			255	
Condom		93			96	
Natural Method		52			54	
No Method		0			0	
Sub-total		5,543	46,398		5,545	34,192
Municipal						
Public Pill	5.74	208	2,717	12.00	191	1,169
Public Inj.	8.21	145	1,695	1.65	165	3,011
Public IUD	2.52	116	375	2.92	117	329
Sterilization	2.92	444	2,804	5.92	429	1,411
Private Pill		391			398	
Private Inj.		71			72	
Condom		85			87	
Natural Method		26			26	
No Method		0			0	
Sub-total		1,486	7,591		1,484	5,921
TOTAL		7,029	53,989		7,029	40,113

Note: a/ The projected number of contraceptive users by method in 1988 was based on the assumption that the contraceptive use structure in 1988 would be the same as observed in 1984 (CPS3, 1984) and that the population in nonmunicipal and municipal areas would increase at an average annual rate of 1.68% and 2.61%, respectively, during 1984-1988.

b/ See footnote 3 for the definition of effective contraceptive protection.

ing family planning program effectiveness under this objective. At the current net public resource input level, total effective protection will increase less than 0.1 (from 7,029,000 units to 7,034,000 units) if the contraceptive price structure is optimally set. Logically, this is due to the insensitivity of contraceptive use to price change. As women's contraceptive behavior is largely insensitive to changes in contraceptive price, the potential for motivating women to use more contraception is limited.

CONCLUSIONS

This summary presents results of the work we did in calculating an optimum price for contraceptives. We constructed a model to explain Thai women's contraceptive method choices and, in conjunction with certain assumptions on user prices and provider costs, used the results from the model to calculate optimum contraceptive price structures. The results emerging from the empirical analysis indicate that:

(1) It is possible for the public sector to reduce a substantial amount of its family planning net public resource input through price restructuring. Specifi-

cally, net public resource input can be reduced from baht 54 million to baht 40 million per month without affecting overall effective contraceptive protection. In order to realize this reduction, the prices of the pill, IUD, and sterilization have to increase. The price of the pill is subjected to the steepest increase – from around 3 baht per monthly supply in nonmunicipal areas and 5.7 baht in municipal areas – to 12 baht in both areas. The implication of the reduced family planning program net public resource input is that additional revenue would be available and this revenue could be used to raise the prevalence level of low performance areas or to improve the coverage and services of other health care programs.

(2) The potential for increasing effective protection through price restructuring is very limited. Effective protection can be increased by only 0.1% if the contraceptive subsidy structure is optimally set. Hence, a further increase in contraceptive prevalence level in Thailand may depend largely on changes in women's desired family size toward smaller families.

Table 4.2 Optimization Program Results Under the "Maximize Effective Contraceptive Protection" Objective, 1988^{a/}

Method ('000 baht)	Initial			Maximize Effective Protection		
	Price (baht)	Effective Protection ^{b/} ('000)	Net Pub. Res. Inp. ('000 baht)	Price	Effective Protection ^{b/}	Net Pub. Res. Inp. ('000 baht)
Nonmunicipal						
Public Pill	2.99	1,710	27,568	5.02	1,652	22,902
Public Inj.	16.43	578	2,014	3.32	735	12,215
Public IUD	1.26	623	2,845	1.93	617	2,381
Sterilization	1.63	1,839	13,971	4.44	1,749	8,358
Private Pill		402			403	
Private Inj.		246			247	
Condom		93			93	
Natural Method		52			52	
No Method		0			0	
Sub-total		5,543	46,398		5,548	45,856
Municipal						
Public Pill	5.74	208	2,717	5.02	210	2,910
Public Inj.	8.21	145	1,695	2.22	160	2,833
Public IUD	2.52	116	375	2.83	115	335
Sterilization	2.92	444	2,804	4.45	431	2,056
Private Pill		391			390	
Private Inj.		71			70	
Condom		85			85	
Natural Method		26			26	
No Method		0			0	
Sub-total		1,486	7,591		1,487	8,134
TOTAL		7,029	53,989		7,034	53,989

See notes to Table 4.1.

Key Planning and Implementation Issues in Agriculture and Rural Development Activities

Suteera Thomson

Although development planning is the method most widely used by governments to pursue development goals, in general, women's perspectives are still missing from these plans. Governments plan as though men and women benefit equally from development processes and have the same needs. This implies that gender differences are not significant to planning and project implementation. Women and children are regarded by planners as dependents of men; concomitantly, planners assume that men are the main breadwinners in families. In reality, however, both men and women – and sometimes women alone – are responsible for and are critical to the survival of poor households.

On July 10-11, 1989, at the "Directions for Strengthening the Role of Women Farmers" workshop at the Sukhothaimathirat Open University, twenty successful women farmers from different parts of Thailand shared insights with 60 policymakers, planners, and project implementors. These women farmers were engaged in a range of activities: horticulture and cultivation of field crops; animal husbandry; fisheries; and cottage industries. Although, to some, most of what the women farmers said was not new, their statements challenged policymakers and planners to review assumptions regarding the needs and concerns of women farmers.

COMMON CHARACTERISTICS

Most of these successful women farmers came from poor families and had only a minimum education; however, a few (who had had a college or university education) gave up waiting for a desk job and returned to the farm. The success of their enterprises (after up to 15 years of hard work and dedication) varied: some are still local enterprises, while others have gone national and international. Despite differences, successful women farmers have some characteristics in common.

- **An opportunity to develop to their full potential.** All successful women farmers mastered the opportunity to apply their skills and develop to their full potential. Some women had to struggle to break through barriers and societal attitudes in order to open up opportunities for themselves. Others met opportunity face-to-face when it came. Most stated that their husband's and family's support – and recognition of their capability – was crucial. And, as societal attitudes strongly influence the success or failure of women to develop their own capacities,

once successful, women farmers were generally accepted by all.

- **Technology.** Contrary to planners' assumptions, successful women farmers showed that they value technological inputs in agricultural development. For example, they use: (1) new agricultural methods to improve production; and (2) effective farm management techniques to reduce cost. In their use of technology they have:
 - **Absorptive capacity.** Successful women farmers acquire and use those agricultural technologies that are appropriate and available to them. Some of them demonstrated that they were better at using such technologies than most men. *Toeng Kamkongkaew*, who was the only woman in the group of 30 farmers who participated in Kasetsart University's Kampaeng San beef cattle-raising project is a case in point. The university trained farmers how to use beef cattle-raising techniques and every six months, over a three-year period, provided cattle for them to raise. During the project period, *Toeng's* farm was selected by the university as a demonstration farm because it was the best. At present, four years after she started, *Toeng* is raising 16 cattle of her own and very much enjoys being a cattle farmer.
 - **Utilization of technology.** Women farmers are skillful in using technology in areas generally reserved for men by government programs – such as animal husbandry and fisheries. Women farmers are successfully engaged in raising poultry, hogs, and dairy and beef cattle. *Ratree Lamha*, a landless farmer, for example, has raised and sold about 10,000 piglets in the past ten years. She is now an expert in raising pigs. Although she could only attend five days of a 15-day hog-raising training program offered by a commercial firm, she made up for what she lost by observing and assisting a veterinarian to deliver piglets. *Somporn and Umpai Chuchuen*, two other women farmers who are sisters, raise 40,000 chickens on their poultry farm every two months. They are the most efficient poultry farmers of the 150 families in their part of the country engaged in this business.

In fisheries, not only older women farmers but also women as young as 15 demonstrated that they can successfully apply breeding, fish

culture, and fish-raising techniques as well as transfer these skills to others. *Pratom Toenpradone and Panaw Arthaweekul*, for example, are two young women farmers who were trained in fish-breeding and fish-raising by the Girl Guides Association. They are now part of a team which demonstrates fish-raising techniques to 11 schools in Surin Province.

- **Creativity and innovation.** Often, technological creativity and innovation are associated with men. Women farmers challenge that perception through their success and creativity in many areas—from farm management to the design of fresh fruit packing containers. *Somporn and Umpai*, the chicken farmers, are able to raise as many chickens as they do (most families can only raise 10,000 chickens every two months), because of the efficient farm management practices they have developed over the past 13 years. *Anusri Nilcharoon*, a successful women farmer from Chiang Mai, grows ginger and cucumbers and processes all for export. Her farm enterprise involves 200 full-time and 500 part-time employees. *Anusri*, who has a grade six education, developed her own management practices including quality-control measures for her agricultural products. The young workers she hires go through long-term, intensive training until they clearly understand what to do. After completing their training, these workers assist older farmers in ensuring the high quality of their products. Because of their good quality, *Anusri* can sell her products at a much higher price than most other exporters.

Apart from being adept at management, *Anusri* is also an innovator. She designed packing containers in which to export her own fresh lychees, longans, and mangoes. Now, over 90 percent of all of the fresh fruit exported from Thailand is shipped in *Anusri*'s packing containers.

- **Access to credit.** It was difficult for women farmers to get financial support for agricultural activities, especially when they were first starting out. These 20 women farmers were successful partly because they came across NGOs, university people, agribusiness enterprises, or credit institutions which recognized their capacities and lent them money. Also, a few lucky women were able to draw on family assets which they put up as collateral for loans.

PLANNING AND IMPLEMENTATION ISSUES

The success stories presented during the workshop challenged us to review many assumptions we had on the concerns and needs of women farmers. We concluded that, to effectively assist women farmers, plans must be based on the realities of women's lives, not simply on as-

sumptions and generalizations. Planners should utilize gender-differentiated conceptual frameworks to acquire and analyze socioeconomic data for planning purposes. We decided that, in addition, attention should be given to:

- **Assessing women farmers' needs.** The majority of women farmers at the workshop felt that government officers were not interested in women's need to improve farm productivity as they did not make sufficient efforts to include women farmers in the planning, programing, monitoring, and evaluation of agricultural and rural development activities. For example, it was suggested that in most Thai villages such consultations should be carried out at night when villagers, especially women farmers, are free from their household and farm chores.
- **Effective training programs for planners and project staff.** Planners and project implementors generally believe that women are best suited for domestic roles, that women are less productive than men in agricultural activities, and that women are not interested in technology. These inaccuracies and gender-stereotypic role perceptions must be changed before there can be any significant improvement in the extension of productive resources to women for agricultural production.
- **Improving community profile data.** There is a need to improve the data on community profiles—particularly on the gender division of labor, access to and control of resources, the composition of household income, and decision making about household expenditures and investment.
- **Providing practical training.** Successful women farmers are interested in practical training and in field visits to observe how activities are carried out elsewhere. They welcome training in areas such as credit access, calculating the actual cost of different types of credit, calculating cost and profit of agricultural activities, and understanding the different types of taxes they must pay. The women farmers stressed the importance of providing training in technology to the persons within the household—the women and/or men—who actually perform or will perform the tasks. In short, women farmers are interested in technology that will increase their productivity and allow them to work less and earn more.
- **More involvement of women farmers.** Greater involvement of women farmers is necessary if development strategies are to be successful. Attempts should be made to harness women's capabilities, motivation, and resourcefulness in planning and bettering their own lives. Equally important is the political will of governments to recognize women's contributions to national productivity goals and to articulate policies that strengthen the role of women farmers.

Integration of Rural Women's Concerns into Mainstream Agriculture and Rural Development Activities

Dr. Yookti Sarikahputi, Deputy Minister of the Ministry of Agriculture and Cooperatives, presented the following position paper at the "Regional Workshop on the Planning and Implementation Aspects of Programmes and Projects Assisting Women Farmers in ASEAN Countries" held by TDRI in cooperation with the Ministry of Agriculture and Cooperatives and the FAO.

Women compose nearly half of the Thai population as well as nearly half of the economically active population of eleven years of age and over. Most women are employed in agriculture on family farms and act as the major source of labor in subsistence agriculture. Indeed, as less than ten percent are private employees, most are unpaid family workers. In 1987, the number of women engaged in agriculture was 6.65 million. However, in the past four to five years, the number of female farmers has decreased at a more rapid rate than has the number of males and there are now over one million fewer female than male farmers (see Figure 1 and Table 1). And the gap is widening. Why do women farmers—particularly in the 11-29 age group—not see a future in agriculture? Why do they migrate to urban areas?

Figure 1 Employed persons in agriculture by gender

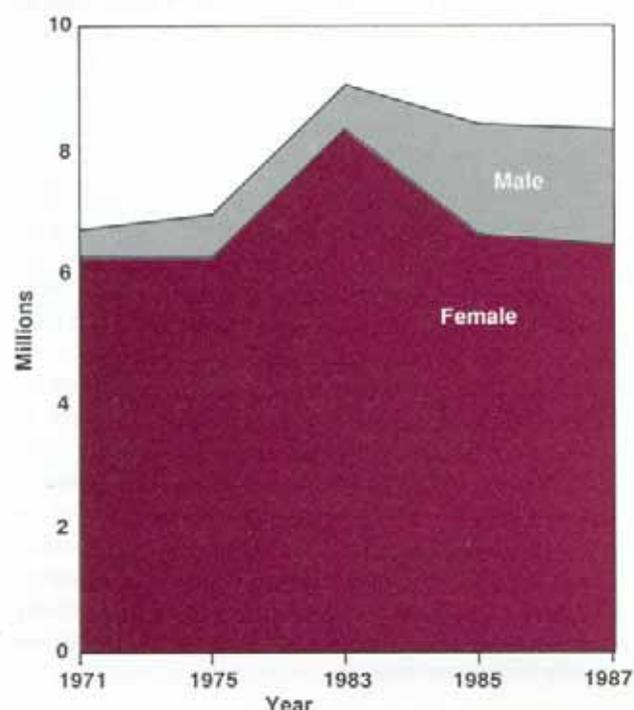


Table 1 Employed persons in agriculture by gender

Year	Male	Female	Differences in the no. of Male/Female Farmers
1971	6,745,820	6,302,710	443,110
1975	6,977,556	6,292,530	685,026
1983	9,055,200	8,352,800	702,400
1985	8,430,000	6,655,900	1,774,100
1987	8,335,900	6,486,200	1,849,700

Source: Derived from Report of the Labor Force Survey of various years, National Statistical Office, Bangkok

In the past, most agencies (including the Ministry of Agriculture and Cooperatives) mandated to strengthen the role of women farmers, regarded women as mere housewives responsible only for home management activities—food preparation and preservation, household maintenance, health, and sanitation. The Ministry did not place sufficient importance on the role of women in agricultural production, management, and marketing. In carrying out their agricultural work, women faced many difficulties. For example, farm women did not have adequate access to information on and training in new technologies. Many of these technologies and tools could benefit women farmers if they were appropriately modified and made available. Instead, since most of the agencies involved did not consider women's work in farming, the resources needed by women were often misdirected to men. The exclusion of women farmers from agricultural development programs has had and continues to have several detrimental effects. It retards agricultural productivity and prevents rural incomes from rising as fast as they would if both men and women were taught improved farming methods. Moreover, it creates a growing gap in the earning power of men and

women. As a result, women consider farming less and less worthwhile.

Minister Khunying Supatra Masdit, at the recent Workshop on "Directions for Strengthening the Role of Women Farmers," raised important questions in her keynote address:

- How do we assist women farmers to build successful futures? What incentives can we provide to help sustain their interest and involvement in farm enterprises?
- How do we transfer appropriate technology to women farmers and/or provide opportunities for them to use such technology?
- How do we assist women farmers to increase agricultural production, to more effectively manage farm enterprises, to market farm products, and to gain access to agricultural credit?
- How do we assist women farmers to carry out their tasks to their full potential? How do we plan projects and activities in such a way as to maximize opportunities for women to use their skills and build their capacities?

Indeed, if we can answer all of the above questions, we are moving in the right direction. The integration of women's concerns into mainstream agriculture and rural development is a complex undertaking which involves all sectors of the economy. Essentially, to effectively meet women's needs, enhance their productivity, and ensure their access to development resources and benefits requires that policymakers and planners consider the actual and potential role of women in all development processes. The integration process is the collective responsibility of the government sector, the non-government sector, and the general public.

The following are some steps that would facilitate this integration process.

NATIONAL POLICY AND THE NATIONAL DEVELOPMENT PLAN

Government commitment and support is crucial to the success of the integration process. It is important for the government to state clearly, in its National Social and Economic Development Plan, its policies and its intention to strengthen the role of women farmers in agricultural development. For example, the Seventh National Development Plan (1991-1995) (which the NESDB is now in the process of formulating) should state that the government will assist women farmers to increase agricultural production, to improve farm management and marketing, and to gain access to agricultural credit. This will pave the way for concerned agencies to plan and program accordingly with the assurance of budgetary support — because, without additional budget allocations for new activities, it will be difficult for them

From January to July 1989, the TDRI-WID project team collaborated with the Food and Agriculture Organization of the United Nations (FAO) and policymakers, planners, and project personnel of ASEAN countries (the Philippines, Indonesia, Malaysia, and Thailand) to review the planning and implementation of programs and projects assisting women farmers. Representatives from each participating country shared their views at a regional workshop held on August 7-10, 1989, in Chomtien, Chonburi.

Dr. Yookti Sarikahputi, Deputy Permanent Secretary of the Ministry of Agriculture and Cooperatives, chaired Thailand's taskforce; Dr. Suteera Thomson, Adviser to the TDRI-WID project team, was its secretary; and Dr. Charoen Kanthawongs, Deputy Minister of Agriculture and Cooperatives, was an adviser.

The taskforce met several times to design a framework and direction for the study, monitor its progress, and establish a working group to carry out operational details. Through the working group (which comprised representatives from 13 agencies) key change agents were identified for each agency mandated to assist women farmers. Each participating agency helped identify strengths and weaknesses in its past efforts to assist women farmers. And successful efforts were further analyzed to identify the unique planning and implementation characteristics which worked to effectively meet women's needs, enhance their productivity, and ensure their access to development resources and benefits.

The following lists the thirteen agencies participating in the working group which developed Thailand's "Country Paper on the Integration of Rural Women's Concerns into Mainstream Agriculture and Rural Development Activities."

- National Commission on Women's Affairs, Prime Minister's Office
- National Economic and Social Development Board, Prime Minister's Office
- Department of Agricultural Extension, Ministry of Agriculture and Cooperatives
- Department of Cooperatives, MOA
- Department of Animal Husbandry Development, MOA
- Department of Fisheries, MOA
- Department of Forestry, MOA
- Community Development Department, Ministry of the Interior
- Kasetsart University
- Bank of Agriculture and Agricultural Cooperatives
- Thai Women Farmers' Association
- Charoen Pokephan Co., Ltd.
- Women in Development Project, the Thailand Development Research Institute.

to realign program direction. Without specific inclusions and allocations, the government agencies involved will find it easy to continue to support women's domestic activities only.

National agricultural policies should recognize the productive role of women in agriculture, especially that of poor women, and strengthen and support women in that role. The first step involves improving the baseline data on women's and men's specific tasks/activities in agricultural and household production—and making these data available for policy formulation. Next, specific women's concerns should be incorporated into the agricultural and rural development plans of relevant agencies. Programs to strengthen women's work in agriculture should be located within technical agencies rather than within agencies concerned with social affairs or women. The implementation of such programs requires increasing the resources allocated to women's programs in the agricultural sector. These programs and projects must be assessed technically sound, economically feasible, and socially acceptable and must take into account the complete range of women's needs, rights, and responsibilities. Finally, women farmers must participate actively in the planning, implementation and monitoring of agricultural and other community development programs/projects. The planning, implementation, monitoring, and evaluation of development programs and projects should be facilitated through the promotion of an inter-agency access system in which concerned offices, farmers, community-based organizations, and institutions participate. Women's representation in all of these bodies should be assured.

RAISING AWARENESS OF WOMEN'S ROLES

To secure institutional commitment to the implementation of agricultural development plans for women, an organized effort should be made to sensitize concerned officials to the issues. Legislators, policy makers, and planners should be invited to take part in activities that will make them more aware of the problems facing women and the issues affecting them. Government officers involved in development program/project planning, should be trained in "gender analysis"—a means of making visible what women do and why. It is a process involving the build-up of a data base to facilitate the translation of gender-specific issues into project or program terms.

Attempts should be made to find ways to change societal attitudes so that women are encouraged to fully participate in rural/agricultural development. The media should be involved in the process of breaking down gender stereotyping of roles by giving greater exposure to cases in which women are successful in non-traditional roles and fields of work.

Finally, among rural people, all agricultural development programs should promote the importance of women's work in agriculture and provide oppor-

"Charoen" Proposes More Money to Assist Women Farmers*

Recently, Deputy Minister Dr. Charoen Kanthawongs of the Ministry of Agriculture and Cooperatives, presided over a Regional Workshop on "Planning and Implementation Aspects of Programmes and Projects Assisting Women Farmers in ASEAN Countries." The Workshop (held between August 7 - 10, 1989, and co-organized by the TDRI-WID Project, the Ministry of Agriculture and Cooperatives, and the Food and Agriculture Organization of the United Nations) was attended by 30 national level policymakers, program planners, project implementors, and successful women farmers from Indonesia, Malaysia, the Philippines, and Thailand.

In an interview after the opening ceremony, Deputy Minister Charoen stated that, in the past, the Ministry of Agriculture and Cooperatives (which was responsible for strengthening the role of women farmers) regarded women only as housewives responsible for home management activities and did not place sufficient importance on women's roles in agricultural production, management and marketing. In carrying out agricultural work, women did not have adequate access to information on and training in new technologies. Women continued to use primitive methods resulting in low productivity. Thus, he stated, it is necessary to strengthen the role of women in agricultural development.

Deputy Minister Charoen stated that he would propose that, in the Agricultural Development Plan for the Seventh National Development Plan (1991 - 1995), the Policy and Planning Office of the Ministry of Agriculture and Cooperatives consider the potential role of women farmers in all development efforts to effectively meet women's needs and enhance their agricultural productivity.

If this is carried out, it will be the first time that such a plan is established and will pave the way for the Ministry to plan specific programs with the assurance of budgetary support, as without additional monies allocated for new activities, it is difficult to realign program direction.

* This article was translated and excerpted from Siam Rath Daily Newspaper, August 10, 1989, page 11.

tunities for the further development of women's potential. Women should be given opportunities to participate as equal partners with men in community leadership and in decisions regarding agricultural and community development.

TRAINING OF GOVERNMENT OFFICERS

A Harvard Institute of International Development (HIID) team was the first to train development agency staff in gender analysis. During the past five years, a number of international development policymakers and planners have been exposed to this training. To date, about 70 Thai policymakers and planners from different agencies have participated in two gender-analysis training programs—one at the Asian Institute of Management in the Philippines and the other at a workshop on gender issues in rural development, in Thailand in March 1989 (co-organized by TDRI, NESDB and the Population Council).

A training program on "Gender Issues in Rural Development" using the gender analysis framework is being planned for Thai bureaucrats and technocrats by the sub-committee of the National commission on Women's Affairs. It would be beneficial for policymakers, planners, and project implementers in key ministries, especially the Ministry of Agriculture and Cooperatives, to take part in this training program.

Policymakers and project personnel may also need specific skill training to translate their increased gender sensitivity into policy formulation and technical programmatic terms. Thus, an assessment should also be made of the additional information and technical and administrative skills needed by policymakers, planners, and program implementors. Such assessment should focus on needed staff competence in:

- incorporating women's concerns into existing programs and/or projects;
- monitoring and evaluating the impact on women of agency policies, plans, and programs; and
- developing an appropriate information program to promote the consciousness of and generate support for women's programs within the government and the public at large.

REVIEWING THE ROLE OF AGENCIES IN STRENGTHENING WOMEN FARMERS

- Rules and regulations that prevent women from fully participating in agricultural development should be reviewed and removed. For example, regulations stipulating that only male village volunteers are eligible for training from the Department of Animal Husbandry Development should be withdrawn. Rules such as this were established years ago but are still in use.
- The technology provided by the Ministry of Agriculture and Cooperatives (MOA) to rural women should not be limited to food preservation, food processing, weaving, handicrafts, and nutrition.
- The MOA should provide information and training in technology to both sexes to redress past imbalan-

ces. Currently, less than 5 percent of all MOA beneficiaries in technology transfer programs are women farmers.

- The Farm Mechanization Division should include women as one of its target groups. Women should be informed about new tool and small-machine technology. Women should also be trained along with men in new rice cultivation techniques (such as using new varieties of rice instead of local varieties).
- Extension workers should seek out women farmers and disseminate appropriate information and technology to them. The MOA may need to evaluate whether more female extension workers are needed to reach women farmers.

Export Promotion and Financing in Thailand

(continued from page 5)

CONCLUSION

An over-all assessment of Thailand's export promotion policy and measures yields generally favorable results. Export promotion is considered a superior development strategy. Indeed, as export growth will continue to be an important factor in the country's economic growth, efforts should be made to sustain growth in this sector through export promotion and investment in necessary infrastructure. All measures currently used to promote exports are effective. However, other approaches to financing (such as leasing, which requires a special law) should be promoted. A form of post-shipment financing, (i.e., factoring), should also be developed. Providing credit facilities for long-term investment in export projects will go a long way to encourage more interest in investing in export ventures, and in turning import-substitution projects into export projects. Indeed, it is believed that setting up an export credit guarantee and insurance scheme would have the same effect.

Finally, as Thai exports continue to grow, the risk that importing countries will impose more barriers also grows. A crucial issue Thailand will face is defining what an "unfair subsidy" is and, thus, how Thailand will be able to handle countervailing or anti-dumping duties. Indeed, Thailand will have to come up with a number of alternative schemes which are the least likely to be subjected to such charges.

The Competitiveness of the Livestock Industry in Thailand

Suthad Setboonsarng

Thailand's livestock industry is evolving slowly—from subsistence production to commercial activity. Indeed, the healthy economic growth of the past decade has greatly stimulated the domestic demand for livestock products. During 1970-1986, Thailand's per capita income grew at about 3.9 percent per annum, while the population grew at about 2.5 percent. Given an income elasticity for meat of 1.2, we estimate that the demand for meat over the past two decades grew at about 7.18 percent.

1986 figures on the production, consumption, and trade in livestock products show that while there was a surplus of chicken, eggs, and pork, there was a deficit in beef and milk (Table 1). In the next decade, if per capita income grows at 6.5 percent, population growth slows down to 1.5 percent, and the income elasticity for meat remains constant at 1.2, the demand for meat should increase at 9.3 percent per annum. Indeed, Thailand might become a net importer of livestock and feed grain to cater to this increased demand.

OVER-ALL GOVERNMENT POLICY ON THE LIVESTOCK INDUSTRY

While some government policies directly influence production, consumption, and trade in livestock products, many other government activities indirectly affect the relative price of livestock products vis-a-vis the price of other products. The magnitude of direct intervention can be measured by the wedge between domestic and border prices. The magnitude of indirect interventions (such as import tariffs on industrial products and macroeconomic policy) is measured by the wedge between the official exchange rate and the shadow exchange rate.

The government intervenes in the livestock market at the farm level, the processing level, the domestic trade level, and the foreign trade level. Table 2 summarizes interventions for five major livestock products: broilers, eggs, pork, beef, and milk.

Government intervention in the chicken industry

At the farm level, credit for agricultural production is subsidized. The government requires that at least 20 percent of loans given by commercial banks be allocated to agricultural activities at 12.5 percent (compared to the

prime rate of about 18 percent). However, broiler producers can only obtain a small fraction of the total amount they require at this subsidized rate because the amount of credit needed for each farm is larger than the amount allowed under this program.

The government is conducting some research on chicken-variety improvement, but its limited budget renders the program ineffective. In fact, broiler and layer raising depend almost entirely on imported Grand Parent Stock (GPS) and Parent Stock (PS). There is no import tariff on GPS and PS but other inputs imported are subjected to tariffs (e.g., about 20 percent for vaccine and preventive medicines and 10-30 percent for imported feed ingredients such as soybean meal).

An important service provided by the government is monitoring the slaughtering process and issuing certificates to qualified exporters. Also, since 1977, investment promotion privileges have been extended to chicken export firms. These privileges include (1) exemption from the import tariff on machines and raw materials (except soybean meal); (2) a 50 percent reduction on the sales tax of imported machines; (3) exemptions from export and sales taxes; and (4) an exemption from the income tax during the first five years. Layer farms are subject to the same government controls.

Government intervention in the pork industry

Government pork policy aims at controlling processing and trading. Pig raisers receive the same privileges as do chicken raisers in terms of subsidized credit and are subject to the same kind of tax on imported inputs (e.g., vaccine and soybean meal). An important supportive government measure was arranging for the creation of disease free zones and disease-free farms for export promotional purposes.

The most important government control on the pork industry is in slaughterhouse ownership. The Animal Slaughtering and Meat Sale Control Act (B.E. 2502) requires that slaughterhouses be owned by the municipal or local administration; further, all of the pigs slaughtered need a slaughtering permit. Inadequate slaughtering facilities and payment for permits have, however, led to illegal slaughtering activities. Since 1985, the Board of Investment has allowed slaughterhouses involved in the pork export business to be privately owned.

Table 1 Production, consumption and trade in livestock in 1986

	Production	Consumption		Import	Export
		Total	Per Capita* (kg./year)		
Chicken	496,620	385,950	7.32	-	64,796
Eggs	287,113	264,087	5.00	-	7,381
Pork	259,495 **	254,005	4.82	-	5,490
Beef	116,358 **	116,517	2.21	158	1.2
Milk:					
Fresh	62,089	46,202	0.88	-	1,160
Powdered	-	22,943	0.44	-	-
- Infant				7,755	-
- Skim				33,087	-
- Whole				11,527	-
Sweetened Condensed	9,542 **	51,265	0.97	-	8,677

* Per capita consumption is calculated from the Socio-Economic Survey (1986).

** Production is estimated from consumption plus import minus export.

Source: "The Competitiveness of Feedstuff and Livestock Production in Thailand," TDRI, Research Report submitted to the ADB, 1989.

Government intervention in the beef industry

The government promotes cattle raising in order to help the farmers. There are breeding stations throughout the country which provide artificial insemination and vaccination services. However, the control of cattle slaughterhouses is ineffective because cattle are usually slaughtered by villagers. Thus, to ensure high quality beef production, controlling slaughterhouse ownership is an obstacle similar to that in the pork industry.

There is a quota on cattle exports; however, the quota is ineffective because, in recent years, exports have never exceeded the quota. The more important controls are the 60 percent import tariff on beef and the five baht per kilogram fee for the cost of inspection.

Government intervention in the dairy industry

The dairy industry is highly subsidized in Thailand. In 1971, the Dairy Promotion Organization (DPO) was set up to organize support mechanisms for dairy production activities (for example, credit to start the herd, free artificial insemination, and vaccination services).

Milk processing is one of the activities promoted by the Board of Investment and there are many processing plants throughout the country. The most important protection given to the dairy industry is quantity control on imported powdered milk. The government requires that to import one unit of skimmed milk powder, the producer must purchase 20 unit (by weight) of locally

produced fresh milk. On top of this requirement, imported milk and dairy products are subjected to import tariffs ranging from 1-40 percent. In 1986, the tax rate was 25 percent on skimmed milk powder. (It was reduced to 5 percent in 1988.)

THE MAGNITUDE OF GOVERNMENT INTERVENTION

The extent of government intervention can be measured by the percentage of the difference between the domestic price (P_d) and its social value (P^*).¹ The social value is the border price of that product evaluated at the shadow exchange rate. Table 3 shows the results of the degree of government intervention on output [the Nominal Protection Rate (NPR) and the Net Nominal Protection Rate (NNPR)]; intermediate input [the Implicit (IT) and Net Implicit Tariff (NIT)]; and the value added [the Effective (ERP) and Net Effective Protection Rate (NERP)]. A positive NNPR or NIT or NERP implies that the domestic price is higher than its social value. For exportables, it means that there is an export subsidy and for imported commodities it implies an import tax. And it shows that NPR is positive for both exported and imported commodities.

For chicken, NPRs are almost zero but NNPRs are about 9 percent for all regions. This implies a net export tax. There is a net import tariff on traded inputs (NIT is about 0.33-1.31 percent). The variation across regions comes from the difference in transportation cost of

1 In general, the extent of government intervention is calculated from:

$$\frac{(P_d - P^*)}{P^*} \times 100$$

Table 2 Summary of government intervention in the livestock industry

	Broiler/egg	Pork	Beef	Dairy
1. Farm Level				
Credit	Interest subsidy	SAME	SAME	SAME
Feed	Import control on soybean meal	SAME	SAME	SAME
Chemicals	Import tariffs	SAME	SAME	SAME
Research	Some breeding and vaccine	Breeding and vaccine	SAME	SAME
BOI promotion	YES	YES	YES	YES
2. Processing Level				
Slaughter-house	Private ownership	Public (except BOI promoted firms)	Public	Public
Sanitary regulations	Disease inspection for export	Disease-free farm & zone	-	-
BOI promotion	YES	YES	YES	YES
3. Trade Level				
a) Domestic	Price control	SAME	SAME	SAME
b) Foreign				
- Tax Policy	Export tax	Export tax	Import tariff	Import tariff
- Non-tax Policies				Domestic purchase

Source: "The Competitiveness of Feedstuff and Livestock Production in Thailand," TDRI, Research Report submitted to the ADB, 1989.

traded inputs. The over-all tax on the value added (NERP) of chicken is about 15 percent. There is only a small difference in the degree of intervention across regions. However, ERP and NERP differences suggest that almost all of this tax arises from an overvalued exchange rate.

The pattern of government intervention in the egg market is similar to that in the chicken market; however, the magnitude is slightly different. While the export tax on eggs (NNPR) is about 7.5 percent, the over-all tax on value added (NERP) is about 28 percent.

Although the government does not interfere with pork exports, the NNPR for pork is positive. This was caused by a pork surplus in the first half of 1986 which caused the pig price to fall rapidly. To prevent the domestic price from falling further, a pig-raiser group exports their pigs at a price lower than the prevailing market price. Hence, the NNPR of 9.6 percent for pork is not a government export subsidy. Further government control on slaughterhouse ownership increases the cost of processing by about 8 percent; over-all protection

(NERP) for pork, however, turned out to be about 15 percent because of the private subsidy on exports during the year we were engaged in this analysis.

Beef and milk are importables. Positive NNPRs indicate protection on their output prices. The existing rates of protection are as high as 73-89 percent for beef and 56-64 percent for milk. Protection in traded inputs (NIT) for beef and milk is higher than for chicken and pork, but protection on the value added (NERP) for milk is slightly smaller than that for beef. For these importables, the overvalued exchange rate protects domestic production.

In summary, there is an over-all tax on exported chicken and eggs and protection on imported beef and milk. A large proportion of the export tax comes indirectly through the general trade and macroeconomic policies that overvalue the exchange rate. This government policy structure is consistent with government intervention in other countries in the agricultural sector, (i.e., the government directly and indirectly taxes exports while imposing tariffs on imports).

Table 3 Magnitude of government intervention in the livestock markets

	NPR	NNPR	IT	NIT	ERP	NERP
A. CHICKEN MEAT:						
North	0.25	-8.93	11.52	1.31	-6.07	-14.67
Northeast	0.38	-8.81	11.43	1.23	-5.71	-14.34
Central Plain	0.00	-9.09	10.56	0.44	-6.07	-14.67
South	0.00	-9.07	10.44	0.33	-6.51	-15.07
B. EGG:						
North	1.77	-7.55	12.53	2.33	-20.98	-28.21
Northeast	1.75	-7.56	12.48	2.18	-19.91	-27.24
Central Plain	1.74	-7.57	11.53	1.32	-19.90	-27.23
South	1.78	-7.54	11.21	1.03	-22.55	-29.64
C. PORK:						
Central Plain	20.63	9.59	14.45	3.97	25.81	14.29
D. BEEF:						
North	108.04	89.00	41.29	28.36	155.25	131.88
Northeast		95.66	77.75	32.50	20.37	110.27
Central Plain	90.65	73.20	37.12	24.57	99.92	81.62
E. MILK:						
North	56.44	42.12	31.89	19.82	76.29	60.12
Central Plain	64.64	49.57	27.56	15.88	79.49	63.06

Note:	Nominal Protection Rate (NPR)	=	$(P_d - P_b) / P_b \times 100$
	Net Nominal Protection Rate (NNPR)	=	$((P_d - P_b^*) / P_b^*) \times 100$
	Implicit Tariff (IT)	=	$((P_{id} - P_{ib}) / P_{ib}) \times 100$
	Net Implicit Tariff (NIT)	=	$((P_{id} - P_{ib}^*) / P_{ib}^*) \times 100$
	Effective Protection Rate (ERP)	=	$((V_{Ad} - V_{Aw}) / V_{Aw}) \times 100$
	Net Effective Protection Rate (NERP)	=	$((V_{Ad} - V_{Aw}^*) / V_{Aw}^*) \times 100$
	where P_d	is	the domestic price of output,
	P_b	is	the border price of output (f.o.b. for export and c.i.f. for import) evaluated at the official exchange rate (OER),
	P_b^*	is	the border price of output evaluated at the shadow exchange rate (SER),
	P_{id}	is	the domestic price of traded input,
	P_{ib}	is	the border price of input evaluated at OER,
	P_{ib}^*	is	the border price of traded input at SER,
	V_{Ad}	is	the value added at domestic price,
	V_{Aw}	is	the value added at OER border price,
	V_{Aw}^*	is	the value added at SER border price.

Source: "The Competitiveness of Feedstuff and Livestock Production in Thailand," TDRI, Research Report submitted to the ADB, 1989.

THE COMPETITIVENESS OF THE LIVESTOCK SECTOR

The competitiveness of a sector is measured by the amount of domestic resources required to earn or save a unit of foreign exchange. The Resource Cost Ratio (RCR) is the ratio between the value of the resource used in the production of a unit of a product and the net border value of that product evaluated at the shadow exchange rate. A product with a RCR of less than one is competitive in the international market.

Table 4 shows that the RCRs for the three exportable products chicken, eggs and pork – are less than one

(about 0.50-0.60). For chicken, meat, and eggs, all regions in the country are competitive in the world market. The main source of strength is the relatively low feed cost – especially maize – which accounts for about half of the total cost of feed. Relatively cheap labor is another factor that strengthens competitiveness in exporting boneless chicken. Thailand can maintain a competitive position in these products even if the feed cost increases by 15-20 percent. The degree of competitiveness is similar throughout the country because the commercial production of chicken and eggs is highly standardized in all regions.

Table 4 Resource cost ratios in livestock products

	Chicken	Egg	Pork	Beef	Dairy
NORTH	0.57	0.50		1.59	1.28
NORTHEAST	0.56	0.46		1.14	
CENTRAL	0.57	0.47	0.84	0.66	1.14
SOUTH	0.59	0.54			

Note:

$$\text{Resource Cost Ratio (RCR)} = \frac{\text{Cd}}{(\text{Pb\$} - \text{Cb\$}) \times \text{SER}}$$

where Cd is the primary and non-trade input cost for producing one unit of an output (in baht),
 Pb\$ is the border price of output, in dollar,
 Cb\$ is the traded input cost per unit of output, in dollar,
 SER is the shadow exchange rate.

Source: "The Competitiveness of Feedstuff and Livestock Production in Thailand," TDRI, Research Report submitted to the ADB, 1989.

The RCR for pork is 0.84. The source of pork's competitiveness comes from the relatively cheap price of rice bran. The export tax on rice indirectly taxes rice bran by reducing its supply. This analysis has not fully considered the cost of public ownership of slaughterhouses. With more efficient slaughterhouses, the RCR would be even smaller.

Except for the Ratchaburi area where pineapple waste is used for feed, beef production is not competitive in the international market, even as an import substitution activity. The cost of beef production is, in fact, about one third the price of imported beef. The perceived quality difference puts domestically produced beef in a different category. Without this perceived quality difference, the RCR of beef is about 0.30.

Milk production is not competitive at current world prices. Its RCR in the North and Central Regions is larger than one. Also, the many subsidies were not included in the calculations because of the lack of data, e.g., the operational cost of the DPO. And these subsidies would make the RCR for milk become even higher.

These results suggest that Thailand is competitive in producing chicken, eggs, and pork but not competitive in beef and dairy products—and this is consistent with existing trade patterns. Thailand exports its competitive products and imports those which are not competitive.

The magnitude of direct negative protection (taxes on input and outputs) is very small. Negative protection mostly stems from indirect distortions.

CONCLUSIONS

Thailand's relatively cheap land and labor and its good roads are the main sources of its comparative advantage in producing feed grain and livestock products. As a lower middle income economy, the per capita con-

sumption of meat remains low. Therefore, Thailand has become a net exporter of these products. However, the growth in population and income in recent years has exerted strong pressure on the domestic demand for livestock products. Indeed, Thailand may become a net importer of livestock products within the next decade.

Direct government intervention in the poultry sector is limited and mostly ineffective. Government control of slaughterhouse ownership is a major intervention in pig production. The main effect of government intervention arises from the overvaluation of foreign exchange, a result of protecting the manufacturing sector from foreign borrowing. Through these kinds of government interventions, Thailand has been able to export chicken meat, eggs, and pork at a profit. Without these constraints, the social benefit of exporting these non-ruminant meat products would be even greater.

The government supports the production of beef and milk mainly as a source of supplementary income for small farmers. To make these activities commercially viable, much government support and protection is called for. The tax and import control scheme has sheltered the expansion of fresh milk production in Thailand over the past decade. Without this protection, it would be found that milk production in Thailand would not be socially beneficial.

If Thailand is to become a net importer of livestock products in the long run, it is important that domestic policy give correct signals to the market. While research and development efforts should continue to find ways to better utilize existing resources, prices and other short-term supports should be abolished. A more important issue is Thailand's position in the international market. If Thailand is to become an importer of livestock products, Thailand should support a position that ensures its cheap supply.