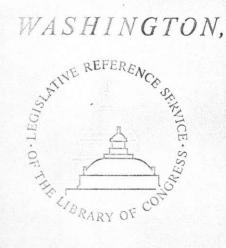
THE LIBRARY OF CONGRESS RENCE SERVIC

WASHINGTON, D. C.



ECONOMIC IMPACT OF DEFENSE AND DISARMAMENT IN THE UNITED STATES

(Studies Completed or in Progress)

Research Sponsored By

Economics Bureau United States Arms Control and Disarmament Agency Washington, D.C. 20451

February 1970

LIBRARY UNIVERSITY OF CALIFORNIA SANTA BARBARA MAY 1 3 1970 GOVT, PUBLICATIONS DEPT.

ACDA-Sponsored Contract Research on the Economic Impact of Defense and Disarmament

CONTENTS

Page No.

I. <u>GENERAL</u> (over-view of conversion problems and the scope and timing of measures for the reallocation of resources)

Comprehensive Review of Domestic Economic Impact Problems of Reduced Defense Expenditures (ACDA/E-156).....1

Time Lags in the Economic Impact of Compensatory Government Expenditure Programs (ACDA/E-157).....2

- II. <u>MEASUREMENT</u> (geographic and industrial distribution of income and employment generated by military expenditures)
 - * Survey of Economic Models for Analysis of Disarmament Impacts (ACDA/E-59).....3
 - * A Study to Measure Direct and Indirect Impacts of Defense Expenditures on an Economy (ACDA/E-85).....4

An Economic Impact Study of the Minuteman II Weapon System (ACDA/E-125).....5

Simulation Study of Economic Impact (ACDA/E/RA-50).....6

CONTENTS CONTINUED

Page No:

MEASUREMENT (Continued)

Model for Determining the Regional Distribution of Defense Purchases (ACDA/E/RA-69)......7

- III. <u>INDUSTRY</u> (conversion and diversification in specific defense-related industries and technological change)

 - * Industrial Conversion Potential in the Shipbuilding Industry (ACDA/E-66)......9
 - * Defense Dependency of the Metalworking Machinery and Equipment Industry and Disarmament Implications (ACDA/E-130).....10
 - * Defense Industry Diversification (ACDA/E-68).....11
 - * Defense Systems Resources in the Civil Sector (ACDA/E-103).....12
 - * The Management of Growth and Technological Change (ACDA/E/RA-15).....13
 - * Technological Innovation in Civilian Public Areas (ACDA/E-118).....14

CONTENES CONTINUED

INDUSTRY (Continued)

Page No.

*	The	Processes	of Tech	nnologi	lcal	Innovation	:	
						DA/E/RA-35		 .15

Policies for Promoting Technological Innovation in the Event of Reduced Military Support of Technological Innovation (ACDA/E/RA-49).....16

IV. <u>MANPOWER</u> (retraining and reemployment of defense workers, geographic and occupational mobility, income maintenance)

- * The Dyna-Soar Contract Cancellation (ACDA/E/RA-13).....17

- * Reemployment Experiences of Defense Workers (ACDA/E-113)......20

- * Pensions and Severance Pay for Displaced Defense Workers (ACDA/E-138)......23

CONTENTS CONTINUED

Page No.

MANPOWER (Continued)

Local Manpower Problems of Post Vietnam Adjustment (ACDA/E-168)......24

- V. <u>REGIONS</u> (adjustment and redevelopment in regions affected by reductions in military expenditure)
 - * Community Readjustment to Reduced Defense Spending (ACDA/E-57).....25
 - * Community Information System (ACDA/E-88).....26

*Completed and printed.

INTRODUCTION

Since 1964 ACDA has sponsored a number of contract research studies dealing with the effects of defense and disarmament on the U.S. economy. Some of this research has been designed to fill gaps in statistical information on the distribution of defense-created employment and income. Other research has explored specific adjustment problems affecting manpower, regions and industries, or has considered broad national policies and programs relating to the reallocation of resources from defense to civilian uses.

The scope and status of the individual research projects are briefly described in the following pages. In the table of contents the studies are grouped under subject categories which reflect their principal, but not necessarily exclusive, area of concern.

Copies of reports on completed studies which have been printed by the Government Printing Office may be purchased directly from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Several other reports are available in limited number in ACDA and may be obtained on request to RIC, U.S. Arms Control and Disarmament Agency, Washington, D.C. 20451. Copies of all research reports have been forwarded to major public and academic libraries in the U.S. and to U.N. libraries in New York and Geneva.

V

TITLE: Comprehensive Review of Domestic Economic Impact Problems of Reduced Defense Expenditures (ACDA/E-156)

PERFORMING ORG: University of Colorado DATE OF COMPLETION: Final Report Due, June 1970

DESCRIPTION: This study will encompass a broad review of the problems of economic adjustment to reduced defense spending, including that derived from arms control and disarmament agreements. The study will endeavor to develop an organized framework for planning for such adjustments. It will examine the existing information and data base, identify important gaps, and suggest means for overcoming such gaps. It will also examine experience thus far in regard to economic adjustment to changes in defense spending. The study will cover a very broad range of impact analysis and policy planning programs, including measures at the national and local level, to ease the short-term transition and to allocate released resources among priority programs. It will also examine the organizational framework for planning and implementing adjustment plans.

TITLE: Time Lags in the Economic Impact of Compensatory Government Expenditure Programs (ACDA/E-157)

PERFORMING ORG: University of Pittsburgh DATE OF COMPLETION: Final Report Due, March 1970

DESCRIPTION: This study examines the time lags which occur before new or expanded public programs can compensate for manpower reductions resulting from defense cutbacks. The research concentrates upon four selected programs -- oceanography (using the Space Agency as an analog), mass transit, urban development, and highway construction. Attention is focused on both the legislative-administrative time lag in providing funds for actual expenditure and the economic time lags before projects reach the stage of full manpower utilization.

TITLE: <u>Survey of Economic Models for</u> <u>Analysis of Disarmament Impacts</u> (ACDA/E-59) PERFORMING ORG: University of Michigan

DATE OF COMPLETION: July 1965

DESCRIPTION: This surveys available economic models for predicting the economic impact of arms control and disarmament and of possible offsetting programs of tax reduction or public expenditures. The study covers econometric models, input-output analysis, regional models, and microeconomic simulation. The analysis considers the relative desirability of relying upon existing models (e.g., those of the University of Michigan Research Seminar in Quantitative Economics, the University of Indiana Business School, the Wharton School and the Brookings Institution) rather than developing a new ACDA model.

TITLE: <u>A Study to Measure Direct and</u> <u>Indirect Impacts of Defense</u> <u>Expenditures on an Economy (ACDA/E-85)</u>

PERFORMING ORG: University of Washington

DATE OF COMPLETION: August 1967

DESCRIPTION: The input-output technique as a means of identifying the specific industry impacts of defense spending at the regional level is evaluated. Utilizing the input-output table already developed for the State of Washington, the study breaks down industry sales to the Federal Government to show separately industry sales to military installations in the state and to the Department of Defense for other defense work. The report deals with many of the conceptual and data collection problems involved in attempting to delineate specific impacts resulting from defense spending, using the input-output technique.

TITLE: An Economic Impact Study of the Minuteman II Weapon System (ACDA/E-125)

PERFORMING ORG: Research Analysis Corporation DATE OF COMPLETION: Final Report Due, March 1970

DESCRIPTION: The study provides percentage distributions of prime contractor and first-tier subcontractor contributions to the output of the Minuteman II weapons system for use in interindustry models. Comparisons are made with inputs to the Polaris weapons system to determine whether the inputoutput relationships are similar.

The study also tabulates the location of prime contractor and first-tier subcontractor production for this system and for several other systems for which input information was developed for the Department of Defense and the Department of Labor.

TITLE: Simulation Study of Economic Impact (ACDA/E/RA-50)

PERFORMING ORG: U.S. Department of Labor, Bureau of Labor Statistics

DATE OF COMPLETION: Draft Final Report Due, June 1970

DESCRIPTION: Simulating the economic impact of various reductions in defense spending and various combinations of offsetting tax reductions and increases in public spending, the study will project final demands and industry employment to 1970 assuming 1) continuation of the war in Viet Nam, 2) cessation of hostilities in Viet Nam in 1970, with and without compensatory programs, and 3) cessation of hostilities in Viet Nam in 1970 and an additional \$7 billion cut in defense spending representing disarmament measures again with and without compensatory programs. The simulation will be carried out through use of the policy planning model developed by Professor Thurow of Harvard, the input-output tables developed by the Office of Business Economics of the Department of Commerce, and "bills of goods" and other data developed by BLS.

TITLE: Model for Determining the Regional Distribution of Defense Purchases (ACDA/E/RA-69)

PERFORMING ORG: Jack Faucett Associates DATE OF COMPLETION: Draft Final Report Due, July 1970

DESCRIPTION: This research will develop a model for determining the location of output of uniquely military products. The model depends upon adequate knowledge of the location of work done by the prime contractors for each military product. The Departments of Defense and Labor will supply this information. The model will provide estimates of the location of work performed below the prime contractor level, by subcontractors and other suppliers, given the location of the prime contract work. The regional flow relationships to be reflected by the model will be developed from a large body of information already available on location of economic activity, interindustry relationships, and subcontracting patterns. ACDA is sharing in the cost of this study which was contracted by the Department of Labor.

7

TITLE:	The Implications of Reduced					
	Defense	Demand	for	the	Electronics	
	Industry	V (ACDA)	E-48	3)		

PERFORMING ORG:	Battelle Memorial Institute
DATE OF COMPLETION:	September 1965 - Available from
	the GPO at \$1.25 per copy

DESCRIPTION: The first of several studies of the effects of reduced defense demand on individual industries, this study analyzes conversion problems in the electronics industry and provides recommendations for action to minimize adjustment difficulties and develop alternative marketing opportunities.

The study (1) characterizes the electronics industry as it is presently composed, (2) examines the effects on the industry of major reductions in military demand for its output, (3) considers problems of output and marketing, (4) examines efforts made thus far by the industry to reduce its dependence upon military demand and (5) provides a planning guide which suggests possible actions to be taken by government, industry, and labor to ease the impact of defense demand reductions.

TITLE: Industrial Conversion Potential in the Shipbuilding Industry (ACDA/E-66)

PERFORMING ORG: Midwest Research Institute DATE OF COMPLETION: May 1966

DESCRIPTION: Based upon the evaluation of key economic factors, this study identifies 55 industries whose products offer conversion opportunities for the shipbuilding industry. The 55 industries were selected from an initial list of 160 industries which appear to have resource requirements and operating characteristics similar to those of the shipbuilding industry. The 55 industries represent largely structural metals. transportation equipment, and industrial machinery. The study reviews their "conversion attractiveness" for shipbuilders in terms of (1) comparability (labor skills, technology, marketing), (2) financial requirements and (3) size and growth characteristics. All 55 industries provide potential opportunities for shipbuilders - that is, opportunities which would entail no dismantling or scattering of labor, equipment or other resources.

TITLE:	Defense Dependency of the Metal-
	working Machinery and Equipment
	Industry and Disarmament Impli-
	cations (ACDA/E-130)

PERFORMING ORG: Resource Management Corporation DATE OF COMPLETION: June 1969

DESCRIPTION: This study estimates the share of sales of the metalworking machinery and equipment industry which is directly or indirectly utilized in the defense effort. Input-output techniques are utilized to derive the components of defense demand. An investigation is also made of the regional concentration of the industry and its demands on the labor force.

The impact of a 25 percent defense reduction on the industry is then examined, allowing for hypothesized tax cuts and increases in governmental nondefense expenditures. The implications of this defense cut on communities, the labor force and on technological innovation in the industry are also analyzed.

TITLE: Defense Industry Diversification (ACDA/E-68)

PERFORMING ORG: Denver Research Institute

DATE OF COMPLETION: January 1966 - Available from the GPO at \$2.25 per copy

DESCRIPTION: This study examines the experiences of twelve defense-oriented firms in attempting to diversify into non-defense markets. The experiences are organized into case study material and guidelines are developed for the conduct of management seminars. The twelve cases are analyzed in terms of factors appearing to make for success or non-success in defense industry diversification. The report stresses the importance of top management commitment and marketing skills for successful diversification.

The second second second second second

(1) the advance of the provide states and the second se

and some they

TITLE: Defense Systems Resources in the Civil Sector (ACDA/E-103)

PERFORMING ORG: Denver Research Institute DATE OF COMPLETION: July 1967 - Available from the GPO at \$1.00 per copy

DESCRIPTION: The potential application of the so-called "systems capability" of aerospace firms to public sector problems is examined. Crime prevention, environmental control, oceanography, urban problems, rapid transit, and public health are considered. The focus of the study is on the potential market and on the aerospace industry's share of that market. The study indicates certain factors which tend to limit both under present circumstances and suggests a number of steps which might expand both. The report is cautious about counting on the public sector market as a major replacement for defense-space business for aerospace firms.

E

TITLE: The Management of Growth and Technological Change (ACDA/E/RA-15)

PERFORMING ORG: Northeastern University

DATE OF COMPLETION: August 1967

DESCRIPTION: The study consists of case material for use in diversification planning and planning for economic growth, primarily for small defense-oriented firms in the New England area. Instructional material for use in management workshops is developed. ACDA shared in the cost of this study which was contracted by the Small Business Administration.

and the second second

TITLE: Technological Innovation in Civilian Public Areas (ACDA/E-118)

PERFORMING ORG: Analytic Services, Inc.

DATE OF COMPLETION: August 1967

DESCRIPTION: Technological innovation in civilian public programs is evaluated, using case studies of the following:

- The civilian nuclear power reactor program
- The San Francisco Bay Area Rapid Transit System
- 3. The Northeast Corridor interurban rapid transit system

An objective of the study is to identify factors affecting technological innovation in the civilian public areas and to draw conclusions as to the implications of those factors for promoting innovation in a disarmament environment.

5

TITLE: The Processes of Technological Innovation: A Conception Systems Model (ACDA/E/RA-35)

PERFORMING ORG: The George Washington University DATE OF COMPLETION: January 1968

DESCRIPTION: This study develops a descriptive model of the genesis of technology and its diffusion throughout the economy. The model provides a broad conceptual framework from which the process of technological innovation in both defense and non-defense industries can be analyzed and compared, and the impact of declining defense expenditures on technological innovation can be assessed (see E/RA-49). ACDA shared in the cost of this study which was contracted by the National Bureau of Standards.

٠

TITLE: Policies for Promoting Technological Innovation in the Event of Reduced Military Support of Technological Innovation (ACDA/E/RA-49)

PERFORMING ORG: The George Washington University DATE OF COMPLETION: Draft Final Report Due, April 1970

DESCRIPTION: Using the model developed under E/RA-35, the study will analyze the impact on technological innovation of substantial reductions in defense support of innovative activities. The probable effectiveness of specific Federal Government policies designed to foster technological innovation in non-defense industries will be evaluated. Areas of concern include taxation, financing, anti-trust, government expenditures, direct subsidies, contracting procedures and patents. ACDA is sharing in the cost of this study which was contracted by the National Bureau of Standards.

TITLE: The Dyna-Soar Contract Cancellation (ACDA/E/RA-13)

PERFORMING ORG: State of Washington Employment Service

DATE OF COMPLETION: June 1965 - Available from the GPO at \$1.50 per copy

DESCRIPTION: This is the first of three studies on the reemployment experience of workers laid off at defense plants. The other two studies deal with layoffs at the Martin Company, Denver plant, and the Republic Aviation Corporation, Long Island plant (see ACDA/E-67 and ACDA/E-69).

The study covers the reemployment experience of 5,229 workers of the Boeing Company, Seattle, who were laid off between December 1963 and March 1964 due to the cancellation by the Department of Defense of the contract for manned space vehicle Dyna-Soar. Information on these experiences was obtained by mailed questionnaires, covering the personal and work characteristics of the employees, their post-layoff employment and unemployment experiences, obstacles encountered in seeking new employment, and sources of assistance utilized in obtaining new employment or in maintaining income. The data are tabulated to reflect the more important factors bearing on occupational and geographic mobility. ACDA shared in the cost of this study which was contracted by the Department of Defense.

充

TITLE: <u>Reemployment Experiences</u> (ACDA/E-67)

PERFORMING ORG: Martin-Marietta Corporation

DATE OF COMPLETION: December 1966 - Available from the GPO at \$0.60 per copy

DESCRIPTION: This is one of three studies on the reemployment experience of workers laid off at major defense plants. (See ACDA/E/RA-13 and ACDA/E-69).

The study covers the reemployment experiences of some 4,000 workers laid off at the Martin Company plant in Denver during the first nine months of 1964. Information on these experiences was obtained by a questionnaire mailed to the former Martin workers. The questionnaires were similar to those used in the Boeing and Republic studies cited above. The data are tabulated to reflect the more important factors bearing on occupational and geographic mobility.

TITLE:	(I) Post Layoff Experiences -
	Republic Aviation Workers and
	(II) The Transferability of Defense
	Job Skills to Non-Defense Occupations
	(ACDA/E-69)

PERFORMING ORG: State of New York, Department of Labor

DATE OF COMPLETION: August 1966 - Available from the GPO at \$1.00 per copy

DESCRIPTION: This is one of three studies on the reemployment experience of workers laid off at major defense plants. (See ACDA/E/RA-13 and ACDA/E-67).

Part I of this study, covers the reemployment experience of some 10,000 workers laid off at the Republic Aviation Corporation plant at Farmingdale, Long Island, New York, between November 1963 and October 1964. Information on these experiences was obtained by a questionnaire mailed to the former Republic workers. The questionnaires were similar to those used in the Boeing and Martin studies. The data are tabulated to reflect the more important relationships bearing upon occupational and geographic mobility.

Part II of the study describes the experimental efforts of the New York State Department of Labor to identify occupations in the non-defense sector of the economy which were similar to the occupations in the Republic Aviation Corporation work force. An appendix to the report contains lists of specific non-defense occupations found to be related to semi-skilled and skilled occupations in the defense plant.

TITLE: <u>Reemployment Experiences of</u> <u>Defense Workers</u> (ACDA/E-113)

PERFORMING ORG: University of Colorado

DATE OF COMPLETION:

1

November 1968 - Available from the GPO at \$2.25 per copy

DESCRIPTION: This project compares, integrates and analyzes the results of surveys conducted in 1964 and 1965 of the reemployment experiences of workers laid off at defense plants in Seattle, Washington (ACDA/E/RA-13), Denver, Colorado (ACDA/E-67), and Farmingdale, Long Island (ACDA/E-69). Utilizing various statistical techniques; i.e., correlation, multiple regression, and Markov process analysis, the study evaluates the actions and procedures used to ease hardships incurred during these mass layoffs.

TITLE: The Potential Transfer of Industrial Skills from Defense to Non-Defense Industries (ACDA/E-102)

PERFORMING ORG: Department of Employment, State of California

DATE OF COMPLETION: June 1968

2

DESCRIPTION: This study explores the possibilities for missile workers in semi-skilled, skilled and technical occupations to transfer to jobs in nondefense industries using their missile related skills. A sample of 127 occupations at two missile manufacturing plants in California, is related to occupations outside the industry. The retraining necessary (if any) for each comparable job outside the industry is specified, up to a maximum of six months.

For 35 of these occupations, the transfer possibilities to non-defense occupations is evaluated, assuming declining defense demand and allowing for institutional barriers to transfer.

алнації напропри народного райорах Румалір, королької славодся і Прима пропри таколісти запачаного рабова сробования акалемата жило за 1

1.1.

TITLE: The Transferability and Retraining of Defense Engineers (ACDA/E-110)

PERFORMING ORG: Stanford Research Institute

DATE OF COMPLETION: November 1967 - Available from the GPO at \$0.65 per copy

DESCRIPTION: Based on information obtained from questionnaires returned by approximately 2,100 engineers and structured interviews with 100 managers in 14 industrial companies throughout the United States and several educators, this study examines four major questions: (1) the comparison of the defense and commercial environments for engineers; (2) the barriers and aids to transfer as reported by individual engineers; (3) the opinions and perceptions of company managers; and (4) the attitudes of engineers, managers and engineering educators to retraining needs of released defense engineers.

The sample represented a variety of specialities, technologies, company sizes and types, and geographic locations. The characteristics, experiences and attitudes of engineers who had transferred from defense to commercial work in recent years were of particular interest.

TITLE: <u>Pensions and Severance Pay for</u> <u>Displaced Defense Workers (ACDA/E-138)</u>

PERFORMING ORG: University of Illinois

DATE OF COMPLETION: June 1969 - Available from GPO at \$1.50 per copy

DESCRIPTION: This study evaluates the effectiveness of existing pension and severance pay plans for defense workers in terms of their potential for easing economic adjustment after layoff. The study takes account of past and present dynamics of the defense labor market and the problems of the larger cutbacks which might occur as the result of disarmament.

and a start of the start of the start of the

Sylfer end an and the

TITLE: Local Manpower Problems of Post Vietnam Adjustment (ACDA/E-168)

PERFORMING ORG: Research Analysis Corporation DATE OF COMPLETION: Final Report Due, July 1970

DESCRIPTION: The study will explore manpower adjustment problems in terms of the number of communities most likely to be affected, the probable occupational mix of the displaced workers, and the capacity of communities to adjust following a substantial reduction in procurement for the defense effort in Vietnam.

Subsequent to the initial research results, the contractor will undertake an analysis of the more critically affected areas, focussing upon the relevant economic and demographic characteristics of these communities in order to assess their adaptive potential in mass layoff situations.

24

TITLE: Community Readjustment to Reduced Defense Spending (ACDA/E-57)

PERFORMING ORG: National Planning Association

 $(1) \in \mathbb{R}^{n}$

DATE OF COMPLETION: January 1966 - Available from the GPO at \$2.00 per copy

DESCRIPTION: This considers the problem of economic adjustment to reduced defense spending at the local level. The study is based upon an analysis of impact in three diverse metropolitan areas: Seattle-Tacoma, Baltimore, and New London-Groton-Norwich. Estimates are made of the disemployment effects of three defense cutback assumptions, including a freeze of strategic nuclear delivery vehicles and the first stage of general and complete disarmament, and of the effects of offset programs on net employment in the three areas. The study provides a discussion of alternative adjustment policies and their implications. TITLE: <u>Community Information System</u> (ACDA/E-88) PERFORMING ORG: National Planning Association DATE OF COMPLETION: July 1967

DESCRIPTION: The study develops and tests a method for determining statistical indicators which can be used to evaluate the sensitivity of communities to economic dislocations from changes in defense spending, and the potential of the communities for economic adjustment to such changes. The method was developed from data applicable to nine selected communities. The procedure involves determining in the first instance the economic and demographic characteristics which bear on dislocation sensitivity and adjustment potential -income, employment, and fiscal dependency on defense activity, non-defense economic activity, public and social services, resource and transportation assets and liabilities, regional environment, economic institutions, and similar measures. Data sources to represent these characteristics are examined and the data used to describe and analyze important economic relationships.

TITLE: Adjustments to Reduced National Defense Expenditures in New Mexico (ACDA/E-58)

PERFORMING ORG: Kirschner Associates

DATE OF COMPLETION: January 1966

DESCRIPTION: The study surveys the current and recent historical impact of defense spending on the economy of the State of New Mexico, and shows that disarmament agreements limiting R&D and those that might severely reduce the level of forces would have a major impact on the state's economy. The report evaluates the potential for economic redevelopment in the state in the event of reduced defense spending in the state economy and suggests that - given the natural economic disadvantages of the area - some form of Governmental assistance would be necessary.

ø,

TITLE:	Civilian Manpower and Community
	Impact Analysis: Changes in
	Status of Military Installations
	(ACDA/E-90)

PERFORMING ORG: University of Kansas

DATE OF COMPLETION: Final Report Due, February 1970

DESCRIPTION: This study evaluates the economic impact of the cutbacks in 80 military installations, announced by the Secretary of Defense on November 19, 1964. Certain affected communities are studied in depth: Bangor, Maine; Savannah, Georgia; Middletown, Pennsylvania; Mobile, Alabama; Salina, Kansas; Amarillo, Texas; and Moses Lake, Washington. Changes over time in local economic activity are analyzed. The study examines the disposition and civilian re-use of land and facilities released by the Department of Defense to each area, and provides summary data and analysis of the reemployment experience of the laid-off civilian employees of the Department of Defense.

Ċ,

TITLE: Measurement and Analysis of Economic Impact of Kansas Army Ammunition Plant (ACDA/E-142)

PERFORMING ORG: Midwest Research Institute DATE OF COMPLETION: Final Report Due, March 1970

DESCRIPTION: The economic impact on Parsons, Kansas, of the reactivation of the Kansas Army Ammunition Plant is analyzed, in order to develop insights into the eventual problems of economic readjustment to deactivation for Parsons and for other communities where ammunition plants have been activated for Viet Nam. An economic impact model was developed for the area to monitor levels of economic activity and economic interrelationships existing in the community at given points in time. The model was supplemented by special investigations of sectors of activity not readily covered by the model. Special attention was given to developing information on the kinds and sources of labor required for the plant, including the associated construction activity in the area.