

Document of
The World Bank

FOR OFFICIAL USE ONLY

Report No. 6013

PROJECT COMPLETION REPORT

**GREECE - VEGETABLE PRODUCTION AND MARKETING PROJECT
(LOAN 1588-GR)**

December 27, 1985

Europe, Middle East and North Africa Regional Office

This document has a restricted distribution and may be used by recipients only in the performance of their official duties. Its contents may not otherwise be disclosed without World Bank authorization.

ABBREVIATIONS AND ACRONYMS

ABG	-	Agricultural Bank of Greece
EEC	-	European Economic Community
ERR	-	Economic Rate of Return
GDP	-	Gross Domestic Product
M	-	Million
PCR	-	Project Completion Report
STR	-	Stremma (0.10 ha = 0.247 acres)

PROJECT COMPLETION REPORT

GREECE - VEGETABLE PRODUCTION AND MARKETING PROJECT
(LOAN 1588-GR)

Table of Contents

	<u>Page No.</u>
Preface	i
Basic Data Sheet	ii
Evaluation Summary	iii

IBRD OVERVIEW OF PROJECT COMPLETION REPORT

I. Introduction	1
II. Implementation	3
III. Project Costs	10
IV. Agricultural Impact	10
V. Economic Rate of Return	10
VI. Institutional Performance	11
VII. Conclusions and Lessons Learned	13
Appendix 1 - Project Financing	14
Appendix 2 - Estimated and Actual Loan Disbursement.	15
Appendix 3 - Financial Ratios: Agricultural Bank of Greece	16

COMPLETION REPORT (prepared by Agricultural Bank of Greece)

I. Introduction	1
II. Project Identification, Preparation and Appraisal...	3
III. Implementation	8
IV. Financial Performance	20
V. Economic Reevaluation	21
VI. Conclusions	22

Annex

Maps - IBRD 13315R(PCR)
IBRD 13316 (PCR)
IBRD 13317 (PCR)

PROJECT COMPLETION REPORT

GREECE - VEGETABLE PRODUCTION AND MARKETING PROJECT
(LOAN 1588-GR)

PREFACE

This is the Project Completion Report (PCR) for the Vegetable Production and Marketing Project in Greece, for which Loan 1588-GR in the amount of US\$30.0 million was approved on May 6, 1978. The loan was closed on June 30, 1984, one year later than expected. Final disbursement took place on March 1, 1985, and an unused balance of US\$5.1 million was cancelled.

The PCR consists of an Overview prepared by the Europe, Middle East and North Africa Regional Office and a completion report, which was prepared by the Agricultural Bank of Greece in collaboration with the Ministry of Agriculture. The Overview is based on this latter report, a review of the Staff Appraisal Report (No. 1940-GR of May 5, 1978), the President's Report (No.P-2322-GR of May 15, 1978), the Loan Agreement dated July 10, 1978, correspondence with the Borrower, and internal Bank memoranda on project issues as contained in relevant Bank files.

The efforts on the part of the Agricultural Bank of Greece and the Borrower's Ministry of Agriculture in preparing the basic completion document for this project are greatly appreciated.

A copy of the draft report was sent to the Borrower for comments on October 25, 1985. No comments have been received.

This project has not been subjected to an audit by OED.

PROJECT COMPLETION REPORT

**GREECE - VEGETABLE PRODUCTION AND MARKETING PROJECT
(LOAN 1588-GR)**

BASIC DATA SHEET

KEY PROJECT DATA

	Appraisal Estimate	Actual or Estimated Actual	Actual as % of Appraisal Estimate
Project Costs (US\$ million)	84.0	73.3	87
Loan Amount (US\$ million)	30.0	30.0	100
Disbursed (US\$ million)	30.0	24.9	83
Cancelled (US\$ million)	-	5.1	-
Date of Board Approval	-	05/06/78	-
Loan Agreement Date	-	07/10/78	-
Date of Project Effectiveness	01/08/79	05/12/80	300/a
Date Physical Components Completed	12/31/82	09/30/84	138/a
Proportion Then Completed (%)	100	90	90
Loan Closing Date	06/30/83	06/30/84	120/a
Economic Rate of Return (%)	35	29	83
Institutional Performance	-	Fair	-
Technical Performance	-	Good	-
Number of Loans for Greenhouses	-	7,554	-

CUMULATIVE DISBURSEMENTS

	FY79	FY80	FY81	FY82	FY83	FY84	FY85
Appraisal Estimate (US\$ million)	5.0	11.5	18.2	24.7	30.0	30.0	30.0
Actual (US\$ million)	0.0	4.6	9.3	12.4	15.6	20.1	24.9
Actual as % of Appraisal Estimate	0	40	51	50	52	67	83
Date of Final Disbursement	March 1, 1985						

MISSION DATA

Mission	Date (mo./yr)	No. of Persons	Mandays in Field	Specializations Represented /b	Performance Rating /c	Trend/d	Types of Problems/e
Reconnaissance	04/76	4	56	a,b,c,d	-	-	-
Pre-preparation	08/76	3	30	b,c,d	-	-	-
Pre-preparation	03/77	1	7	b	-	-	-
Pre-appraisal	06/77	5	36	a,b,c,d,d	-	-	-
Pre-appraisal	09/77	4	40	b,d,d,f	-	-	-
Appraisal	10/77	6	132	a,b,c,d,e,f	-	-	-
Follow-up	12/77	1	4	d	-	-	-
Sub-total		24	305				
Supervision 1	02/78	1	2	d	1	1	none
Supervision 2	07/78	2	10	d,d	n.a.	n.a.	n.a.
Supervision 3	09/78	1	3	d	1	2	none
Supervision 4	02/79	1	7	a	1	2	none
Supervision 5	02/79	1	2	g	n.a.	n.a.	n.a.
Supervision 6	06/79	1	8	a	n.a.	n.a.	n.a.
Supervision 7	10/79	1	6	j	?	1	M
Supervision 8	05/80	1	2	d	n.a.	n.a.	n.a.
Supervision 9	05/80	1	6	d	n.a.	n.a.	P,T
Supervision 10	10/80	1	7	c	2	2	P,T
Supervision 11	02/82	1	5	c	n.a.	n.a.	n.a.
Supervision 12	03/82	2	39	a,d	2	2	P,F
Supervision 13	09/82	1	7	d	3	2	P
Supervision 14	07/83	2	24	a,f	3	2	P
Supervision 15	06/84	1	5	f	3	2	P,M
Completion	09/84	1	2	d	n.a.	n.a.	n.a.
Subtotal		19	126				
Total		42	431				

OTHER PROJECT DATA

Borrower	Government of Greece
Executing Agency	Agricultural Bank of Greece
Fiscal Year of Borrower	January 1 to December 31
Name of Currency (Abbreviation)	Drachma (Dr)
Currency Exchange Rate	
Appraisal Year Average (1977)	US\$1.00 = Dr 37.2
Intervening Years Average (1978-83)	US\$1.00 = Dr 54.6
Completion Year Average (1984)	US\$1.00 = Dr 108.0

Follow-on Project

Name	Integrated Forestry Project
Loan Number	1718-GR
Loan Amount (US\$ mln)	25.0
Date Board Approval	06/05/79

/a Calculated in terms of months from date of Board approval.

/b a = agriculturalist; b = marketing specialist; c = financial analyst; d = economist; e = transportation specialist; f = agro industries specialist; g = other.

/c 1 = problem-free or minor problems; 2 = moderate problems; and 3 = major problems.

/d 1 = improving; 2 = stationary; and 3 = deteriorating.

/e M = Managerial; F = Financial; T = Technical; P = other.

PROJECT COMPLETION REPORT

GREECE - VEGETABLE PRODUCTION AND MARKETING PROJECT (LOAN 1588-GR)

EVALUATION SUMMARY

Introduction

Greece became an associate member of the European Economic Community (EEC) in 1962, and a full member in 1981. Because of the country's climatic advantages, the horticultural sector was expected to be a major beneficiary of that membership. Development of horticulture thus was given high priority by the Government.

Objectives

The main objectives of the project were to (a) increase foreign exchange earnings by expanding production of out-of-season vegetables; (b) strengthen existing research and extension institutions to promote production of high value crops; (c) help raise productivity of smallholders by promoting intensive cultivation; (d) promote improvement in the organization of the export marketing system; and (e) strengthen the Agricultural Bank of Greece (ABG), by helping to improve its lending operations and resource mobilization efforts. To achieve these objectives, the project included construction of greenhouses on about 900 ha, construction of packhouses and cold storages for vegetables, provision of refrigerated tractor trailers, improvement of existing research and extension institutions, and improvement of the marketing system.

Implementation Experience

The project had a good start, and a number of project activities commenced even before Board presentation. However, slippage in project effectiveness from January 1979 to May 1980 caused implementation delays, particularly with regard to components involving institutional changes. The loan closing date was extended by one year from June 1983 to June 1984. Project costs amounted to US\$73.3 million, compared with US\$84.0 million estimated at appraisal. However, in terms of local currency, actual costs were Dr. 5,590 million, or 82% above appraisal estimates. The lower than estimated project costs in dollars was due to shortfalls in all project components except the construction of greenhouses, while the additional cost in drachmas was mainly due to the higher than anticipated internal inflation coupled with substantial devaluation of the drachma.

Results

Three of the six project components, concerned with horticultural production improvements, were successful. Implementation of components

dealing with improvements to the marketing organization was unsatisfactory. Shortfall in the latter components, together with delays in submitting disbursement applications in years when the drachma was devalued, led to underutilization of the loan amount, causing the Government to request cancellation of US\$5.1 million from the proceeds of the loan. The project's re-estimated economic rate of return was 29% compared with an appraisal estimate of 35%.

Sustainability

The prospects for sustainability of benefits from the project's main investments, i.e., greenhouses, appear good. Research and extension activities supported by the project are expected to be beneficial for the foreseeable future. Project components related to marketing largely failed. Although project activities were not greatly hindered as a result, marketing deficiencies remain a constraint to Greece's overall horticulture development and will have to be dealt with if the country's comparative advantage is to be realized.

Findings and Lessons

The main lesson to be learned is that agreement between the Bank and the Borrower on a set of clear and detailed proposals concerning organizational aspects of institutions to be financed under a project is necessary before Board presentation, especially when trying to introduce significant changes involving a number of agencies (in this case, Ministries of Agriculture, Commerce and Transportation). Close and intensive collaboration in this project between the Government and the Bank from the initial stages of the project cycle resulted in significant improvements in ABG's operational activities and facilitated project implementation (para. 7 of Overview). Lack of agreement on clear and detailed proposals for the organizational aspects of regional marketing companies caused project implementation delays (para. 21 of Overview).

Delays in submission of disbursement applications during the years when the drachma was devalued caused the Government to lose foreign exchange from the proceeds of the loan (para. 10 of the Overview). Lack of Bank field supervision for over 12 months during critical stages for the marketing component might have exacerbated failure in the Bank reaching an agreement with the Government on ways to implement that component (para. 41 of Overview).

Failure to introduce changes in the marketing system does not appear to have interfered with successful overall implementation of the project. Though the export through numerous types of growers and traders had hardly changed since appraisal--the proposed changes in marketing were never adopted--exports progressed well. The production of cucumbers, the principal vegetable produced, increased about eightfold in the project area from 1978/79 to 1983/84. Between 1978/79 and 1982/83 the value of total exports of fruits and vegetable from Greece increased from US\$369 million to US\$445 million to the EEC, and from US\$37 million to US\$62 million to the Middle East. Fundamental structural changes in a marketing system can hardly be made over a short period of time (para. 42 of Overview).

GREECE
VEGETABLE PRODUCTION AND MARKETING
(LOAN 1588-GR)

IBRD Overview of Project Completion Report

I. Introduction

1. The attached Project Completion Report (PCR) which was prepared by the Agricultural Bank of Greece in collaboration with the Ministry of Agriculture provides a comprehensive description of project implementation and of the main project achievements and shortfalls. This overview memorandum comments on points requiring further elaboration. It was prepared by staff of the Agriculture I Division.
2. **Background.** In 1976, one year prior to project appraisal, agriculture in Greece accounted for about 17.5% of GDP, contributed with about 32% of total exports and employed about 34% of the total active population. Fruits and vegetables accounted for about 60% of agricultural exports with more than half the fruits and nearly all the vegetables being marketed in the European Economic Community (EEC).
3. In 1962, Greece became an associate member of the EEC. Thereafter, the country's agricultural exports to EEC were exempted from import duties thus gained a competitive advantage but they remained subject to quota restrictions imposed to prevent farm prices from sliding below acceptable levels. In the mid-70's, Greece applied for full membership in the Community, which was granted in 1981. As production costs of fresh fruits and vegetables were lower than those in other member countries due to Greece's climatic advantages, the horticultural subsector was expected to be a major beneficiary of Greek's full membership in the Community.
4. To enable Greek farmers to take full advantage of their competitive position in the EEC market for fresh produce, a number of complementary changes were required in the Greek supporting services, particularly as regard to research and extension, marketing, handling facilities and transportation. In addition, accession to the EEC called for some changes in agricultural credit arrangements as well as major changes in Government subsidy policies. A critical evaluation of Greece's agricultural taxation and subsidy policy was thus necessary to design them up to the EEC requirements.
5. **Origin and Preparation.** In October 1975, recognizing the need to develop the production and marketing of horticultural products, the Government

requested IBRD's assistance in preparing and financing a Fruit and Vegetable Marketing Project. IBRD's reconnaissance and preparation missions (June and September 1976) reviewed the prospects for export-oriented fruits and vegetables, identified marketing and production constraints, and proposed steps for preparing a possible Bank project to assist in the modernization of the horticulture subsector. Subsequently, the Agricultural Bank of Greece (ABG) selected a foreign consultancy firm to prepare the feasibility study, under terms of reference prepared by ABG with IBRD's assistance. The foreign exchange cost of the study (about US\$300,000) was financed by the Greek Government from the proceeds of the IBRD Loan 1165-GR (East Vermion Irrigation Project).

6. The consultants' report completed in June 1977 constituted a reasonably good horticulture subsector study, but the organizational aspects, required changes in Government policies, and cost/benefit analysis needed further elaboration. Subsequently following discussions with two IBRD preappraisal missions, the consultants submitted a revised version of the report, which included sufficient in-depth analysis of abovementioned topics and served as the basis for the appraisal which took place in October 1977. One aspect of the preparation report on which the Bank had views different from those recommended by the consultants and the Government was on the organizational arrangements for the marketing of vegetables.

7. During project appraisal, the Bank recommended the Government to increase the interest rates for agricultural lending activities and ABG's capital so as to improve ABG's financial viability. In 1978, and prior to negotiations, the Government increased the agricultural lending rates by 0.5% (to 7.5% for short term and 6.5% for long term) and ABG's capital by about five times. By end 1979, ABG's long-term debt equity ratio was 4.6:1 compared to the 20:1 prevailing at the time of appraisal. In addition, during project preparation and appraisal, the Government and the Bank recognized the need for the Government to carry out a study of interest rates and agricultural subsidies as the basis for rationalizing its agricultural subsidy structure and for negotiating the policy changes required for its entry into the EEC. During negotiations it was agreed that ABG would prepare the study with the Bank assistance as part of Bank's regular project supervision.

8. The main objectives of the project, as set forth in the appraisal report, were to (a) increase foreign exchange earnings by expanding production of out-of-season vegetables; (b) strengthen existing research and extension institutions to promote production of high value crops; (c) help raise productivity of smallholders by promoting intensive cultivation; (d) promote improvement in the organization of the export marketing system; and (e) strengthen ABG, by helping to improve its lending operations and resource mobilization efforts. To achieve these objectives, the project included (a) construction of greenhouses on about 900 ha; (b) construction of packhouses and cold storages for vegetables; (c) provision of refrigerated tractor trailers; (d) improvement of existing research and extension institutions; and (e) improvement of the marketing system. These components which formed an integrated project, emphasized out-of-season vegetables in Peloponnesus and Crete, the most important areas for their production. The project, signed on July 10, 1978, was expected to be implemented between 1978 and 1982.

II. Implementation

9. The project had a good start; even before the Loan was signed, the Government selected, sent, and financed a group of seven agronomists for a study tour to Israel, Cyprus and France to observe different methods of producing out-of-season vegetables. By the end of 1978, ABG had developed new formats for loan appraisal including financial and economic evaluation of subprojects, introduced them for all its medium- and long-term lending operations, and prepared loan appraisals for all greenhouses to be financed under the project. In addition, the Ministry of Agriculture had selected a new group of eleven extensionists to receive training in production of out-of-season vegetables and was very active in selecting the group of researchers to be sent abroad for long-term training. The development of the organizational and implementation plan for the marketing companies to be established under the project was, however, lagging behind as the Government was then awaiting the establishment of AGREX, the central state marketing company which was expected to have a significant role in the export market organization. It was not until October 1979, that AGREX was formed and the Government was prepared to consider hiring the required consultants for the establishment of the marketing companies.

10. In spite of all the abovementioned progress in steps for project implementation, it was not until January 26, 1980 that the Loan Agreement was ratified by the Greek Parliament and the loan became effective thereafter on May 12, 1980, nearly two years after the loan signature and after four postponements of the date of effectiveness. This delay in project effectiveness did cause a loss of momentum in project implementation during 1979 and 1980, mainly of components dealing with institutional changes. Disbursements against project expenditures incurred during 1978 and 1979 were also delayed. Moreover, due to such delays, and to the devaluation of the Drachma during 1978-1980, the Greek Government suffered a loss of foreign exchange from the proceeds of the loan. This loss was exacerbated by further delays on submitting disbursement applications to the Bank. Due to this phenomenon and to the shortfall on some of the project components, US\$5.1M of the proceeds of the loan could not be utilized in spite of a one-year extension of the closing date, and this amount was cancelled at the Government's request. The books were finally closed on March 1, 1985, 20 months after the original June 30, 1983 closing date.

11. Greenhouses. The construction of greenhouses under the project commenced by 1978, and achievements since the project started were close to the appraisal estimate in spite of the fact that project effectiveness was delayed by over one years. Construction in Peleponnesus was slower than in Crete during the first years of the project, but it picked up during project implementation. Following are the projected (appraisal) and actual area under greenhouses.

Year	Cumulative Area under Greenhouse		Actual As % of Appraisal
	Appraisal	Actual	
	----- (Str) -----		
1978	1,400	1,050	75
1979	3,300	3,110	94
1980	5,300	4,760	90
1981	7,300	6,360	87
1982	9,000	7,780	86
1983	9,000	9,165	102
1984	9,000	10,750	119

Improvements were introduced in the technical specifications for the greenhouses financed under the project and those improved specifications were made applicable for all greenhouse loans provided by ABG even outside the project area. Most of the greenhouses constructed under the project during the first years used wooden frame but the trend towards those using metallic frame or a combination of wood and metallic frame increased during project implementation, especially for the construction of new greenhouses. This explains, in part, the increase in the average cost per strema of greenhouse over the project period from US\$3,500 during 1978 to US\$8,500 during 1984. Estimated average cost at appraisal was about US\$6,600. The wooden frame greenhouse costed less but had a shorter life. According to ABG estimates, both types of technology yielded satisfactory financial and economic rates of return, but returns were reported to be somewhat higher on wooden greenhouses.

12. By the end of 1982, the original completion date, the project area covered by new greenhouses (2,314 str) was already higher than that estimated at appraisal (2,000 str) while replacement of existing greenhouses was about 70% of estimated target (4,964 str versus 7,000 str estimated at appraisal). Due to the high demand for new greenhouses and replacement of old ones, the Bank, at the request of Government, agreed to amend the Loan Agreement to allow construction of new greenhouses on about 3,600 str and replacement of old greenhouses on about 7,400 str. Thus, the total area under greenhouses to be financed by the project was increased from 9,000 str to 11,000 str. By mid-1984, the amended closing date, the project had financed replacement of greenhouses on 7,050 str and construction of new greenhouses on 3,700 str bringing the total area financed under the project to 10,750 at str. This figure is about 19% higher than the one estimated at appraisal.

13. Packhouses. The implementation of the packhouses component had a late start, mainly because of (a) the unexpectedly long periods it took to identify eligible subborrowers, (b) the traditionally slow process of decision-making by the cooperatives and/or unions of cooperatives, and (c) the relatively long period ABG took to prepare tender documents. This was coupled by the Government's decision, in 1980, to postpone approval of packhouse subloans until the marketing organizations had been formed. It was not until 1981 that potential subborrowers were finally identified, although marketing organizations had not been formed. However, approval of subloans was further delayed because beneficiaries of the packhouse component were unable to contribute 20% of proposed investment as a down payment contribution required by Project Agreement. In May 1982, the Government requested the Bank to modify the Loan Agreement to exempt beneficiaries for this component from the down payment contribution. The Bank, however, did not agree to this proposal

but recommended ABG to require borrowers' contribution as a matter of standard financial principle of financial soundness and as an indicator of borrower commitment. To solve the beneficiaries' apparent lack of cash, the Bank recommended ABG to consider land and labor as borrower's contribution and if such contributions were not sufficient, to extend loans to individual members of cooperatives to be used as contribution to proposed investments.

14. The original implementation schedule included the construction of six new packhouses with appropriate cooling facilities and the improvement of a number of existing packhouses. The actual implementation at project completion involved the construction of two new packhouses and the improvement of five existing one. Most of these investments were completed during 1984. The poor performance of this component appears to be associated with the continued fragmentation of Greek exports, with most exporters not handling the volume required to support investments in packhouses (see para 17).

15. Refrigerated Tractor-trailers. At the time of appraisal it was recognized that although overall existing fleet capacity was adequate to transport expected future exports, there was a need to upgrade and replace existing units with modern tractor-trailers. According to appraisal estimates, about 40 to 50 tractor-trailers were expected to be procured under the project. This component was initially delayed because the Project Agreement required the potential subborrowers to be experienced trucking companies whose main activities included the export of fresh horticultural produce. That requirement narrowed considerably the potential subborrowers by excluding private individuals licensed to be engaged in the trucking business. It also excluded the possibilities of new companies. These requirements were relaxed during 1981 and 1982 to allow subloans for new companies and for private individuals. The amendments also allowed ABG to exceed the limit of five tractor-trailers per beneficiary.

16. At the end of the project period, 21 subloans were signed for this component comprising seven refrigerated tractor-trailers, four tractors and 12 refrigerated trailers. In addition, one application for Eurokreta, approved by ABG in 1981, for the purchase of 16 tractor-trucks was not effective because the company was unable to obtain a license from the Ministry of Transportation to engage in the trucking business. The major reasons for the shortfalls on this component could be summarized as follows:

- (a) General slackening of demand for trucks following reduction in business with the Middle East. There was an apparent surplus of refrigerated trucks reported in Greece in 1981;
- (b) The Government delays in granting licenses to new large companies which blocked the financing of 16 trucks under the project;
- (c) Failure to form large fruit and vegetable export marketing companies which could have utilized refrigerated trucks more effectively; and
- (d) Very high taxes (about 45%) on imported new trucks, which encouraged purchases and importation of reconditioned trucks which could not be financed under the project. It was reported

that, during 1983, about 700 used trucks were imported into Greece from Germany. Used truck costs (including import duties) were reported to be between Dr. 2.0 to 2.5M against Dr. 5.8M for new ones.

It could be concluded that, although this component fell short of appraisal estimates, it does not appear to have been a major constraint in the development of horticultural exports. However, eligibility of imported used trucks for project financing could have improved implementation performance of this component while it would have also helped the project to have a greater impact in the modernization of the transportation services for fruits and vegetables. This possibility, although feasible, was never explored by the Bank or the Borrower.

17. Marketing Organizations. The marketing system in Greece is composed of different forms of organizations including:

- (a) individual growers or grower partnerships actively selling their own produce in distant markets;
- (b) individual growers who also own one or more packhouses and export production of other growers;
- (c) private exporters (not growers) with or without packhouses;
- (d) marketing cooperatives and unions of cooperatives; and
- (e) producer groups, highly or loosely organized;

This situation has hardly changed since the time the project was appraised. There are still too many exporters of fresh fruits and vegetables in Greece; about 3,500 private exporters and about 1,000 cooperatives have the right to export. This number was to have been reduced by more strict licensing, but existing private exporters have successfully lobbied against tightening the export regulations.

18. In the preparation report, the consultants recommended the formation of a number of regional export marketing agencies. These were to be commercial trading companies whose shares would be offered to cooperatives and private exporters as well as to AGREX and ABG. Membership was to be voluntary and encouraged by limiting government incentives to regional export marketing agency members. There was also to be a Central Export Coordinating Committee which, however, was not to have a trading function, but have overseas agents to provide market information to regional agencies. The report also proposed the introduction of an auction system at the wholesale stage of marketing in large urban centers.

19. During appraisal, the Government's concept was to promote a number of strong regional vegetable cooperatives and to rely on AGREX to sell their produce. The reasons for this strategy were partly to emulate the relatively successful operations of the Macedonian cooperatives in exporting peaches 1/

1/ Peach exports are a special case, where packhouses are grouped on the railway line near Thessalonika, and exports sent by INTERFRIGO wagons.

and partly due to a strong preference for cooperatives. It was clear, however, that most cooperatives in Greece were weak and that a vegetable export marketing strategy based upon regional marketing companies should plan to build on dynamic sectors (such as producer groups and individual exporters) as well as on the cooperatives. Hence, the Bank proposed that membership in the regional marketing companies be opened to all these groups.

20. The second major point of discussion at appraisal was the function of the Central Export Marketing Company proposed by the Government. This role was to be undertaken by AGREX, a company owned 60% by ABG. In contrast to the Government's proposal, the preparation report proposed, and the Bank agreed, that the Central company should have a coordinating and service role rather than a sales function. The reasoning was that the regional companies should themselves be responsible to their shareholders for their own business and not accept directions from third parties from what would be in effect a "marketing board".

21. ABG and the Bank reached agreement during appraisal on the following common premises:

- (a) larger unit marketing companies with grower shareholders;
- (b) provision of experienced management through technical assistance, funded initially by the Government;
- (c) with some reservations, a two-tier structure, i.e., regional and national levels.

The main disagreements centered, however, on the need to broaden the eligibility of shareholders and on the level of regional decision making. Finally, agreement was reached to set up four regional companies. The operational features of the companies were, however, left to be agreed during project implementation.

22. During project implementation the Bank consistently urged ABG to expedite implementation of the marketing component. However, legislative 1/ and other delays, 2/ most of which were outside ABG's control, slowed down the formation of the companies and the hiring of consultants. It was not until December 1981 that the consultant for this component was finally hired. Meanwhile, in 1981, political changes took place in Greece 3/, and ABG in its attempt to implement this component went progressively closer to the Government's original proposal based mainly in the cooperative system for the formation of the marketing companies. The lack of Bank field mission from October 1980 to February 1982 to supervise this project might have exacerbated failure in reaching an agreement with the Government on ways to implement that component (para 41 of overview).

23. Thus, the marketing component has not been successfully implemented largely because the Government, mainly the Ministries of Agriculture, Commerce and Transport, took up to 1982 to agree on a common export marketing strategy

1/ The formation of AGREX was finally decreed in October 1979.

2/ Loan Agreement was finally ratified in January 1980, and loan became effective in May 1980 nearly two years after loan signature.

3/ During that year, a socialist government replace the conservative one.

and to approve the necessary laws and regulations. In addition, the different proposals submitted to the Bank since 1982 had a number of features, mainly concerning eligibility for shareholding in the proposed regional companies and the functions of the Central Export Marketing Company, which were not acceptable to the Bank. These proposals were similar to those which had been earlier presented to the Bank at appraisal and considered inadequate for promoting vegetable exports because they (a) were mainly based on the cooperative sector and excluded the already well-developed private exporters; and (b) required compulsory marketing of produce through the regional marketing organizations.

24. Currently, the Government has included in its five-year plan a project to establish regional markets (15 or 20 in all) at which all fruits and vegetables would eventually be required to be marketed. Growers will bring their produce to be graded and auctioned. The objective of such a system is to encourage competitive price formation and standardization. The Government plans to hire foreign experts to advise on how to combine the functions of establishing these regional markets and improving exports. The cost of establishing such a system is expected to be financed by the EEC and the Government. A proposal with a number of similar features to this one was prepared by the project financed consultant and submitted to the Bank in 1982 for Bank financing (para 23). In addition, the auction market on a compulsory basis does not appear to be the best solution to the problem of organizing the large number of existing individual small exporters in the Greek context.

25. Extension Activities. Under the project, a good initiative was taken in implementing the extension component, mainly in the areas of greenhouses management, increased capacity for local training, increased farm visits, and increased awareness and knowledge of problems and solutions of vegetable production in greenhouses. Most of the equipment and facilities provided under the project were delivered or constructed by end 1981. In addition, 25 man-months of foreign consultancy services were provided between 1980 and 1982. Out of the 33 man-years of overseas training for extension staff provided under the project, about 18 man-years were taken up, and two study tours were arranged for extension officers to visit modern greenhouses, market organizations and extension institutes in various European states. A total of 27 agronomists took part of such training for a period of about 20 days each. Four plastic houses, 2 for each demonstration center (at Kalamatra, Peleponnesus and Messara, Crete) were also constructed under the project and are now being intensively used for local training.

26. Failure to utilize all the training provided for under the project was mainly due to language difficulties of qualified agronomists and the difficulties they encountered in securing places in foreign universities.

27. The two consultants hired under this component participated in developing the training program abroad, the local training activities of both staff and growers in greenhouse management, and the revised list of equipment for the extension component. In addition, they emphasized the need for, and collaborated in, establishing a soil, plant and water laboratory service in an effort to determine, as a matter of urgency, nutritional requirements and measures for solving salinity problems. The consultants made sound recommendations to meet specific growers' concerns, only stopping short of proposing general measures for establishing a more intensive extension program.

28. Following the departure of the extension consultants, farmers' training has been provided by previously trained Greek agronomists in collaboration with the research consultant assigned to Peleponnesus. Local training is provided to agronomists and growers at demonstration centers and involves various aspects of management of vegetables in greenhouses.

29. Research. After a slow start, increasing emphasis in research activities was placed on greenhouse heating, screening of cold resistant varieties, changes in date of planting, crop varieties, nutritional aspects and other cultural practices. Foreign training was provided to 11 trainees for postgraduate studies (eight for M.S. and three Ph.D. degrees). Three foreign consultants, two part time in Crete and one full time in Peleponnesus, were engaged under the project. The two short-term consultants reviewed the ongoing research operations and recommended certain changes in research emphasis, most of which were implemented during the project periods. The contribution of the full-time consultant assigned to Peleponnesus proved to be more fruitful as he was able to recommend, plan, and implement a number of research activities. His emphasis on trials on heating at different temperatures and with different sources of heat, double cropping, crop varieties, date of planting, and other cultural practices has proven to be very successful. It is expected that some of the results of the trials could be transferred, with some modifications, to Crete. His input was also reflected in the teaching qualities of his Greek counterparts. The main results of the research programs were presented at special meetings (specifically organized for the purpose of this project) to researchers, extensionists and other relevant personnel during 1980, 1982 and 1984. Results are being disseminated to farmers through the extension system. These meetings have proven to be very useful, and the Government plans to continue them every two years in the future.

30. Twenty-four greenhouses of half a strema each have been constructed for research purposes, of which six are in Peleponnesus and the remaining 18 in Crete. From the equipment and vehicle list envisaged for this component at appraisal, only the vehicles and small chemical testing equipment were procured before the project closing date. Delay in procuring the remaining equipment was due to bureaucratic procedures needed to be followed in the preparation and approval of tendering documents.

31. Study on Interest and Agricultural Subsidies. The terms of reference and technical framework for the study were prepared by ABG's team of experts with Bank assistance on March 1979. During preparation of the study, three Bank one-expert missions visited Greece to review the status of preparation and the analytical approach of the study. It was finally completed and submitted to the Bank on September 1980, nearly one year behind schedule. The report provided good background information on the historical development of agricultural institutions and policies, and on other aspects of agricultural development. The background information was, however, not fully utilized in evaluating the impact of the various policies on agricultural development and in formulating policy recommendations. It was reported, however, to have provided a good basis for the Government's negotiating position with regard to policy changes required for its entry into the EEC.

III. Project Costs

32. At the time of appraisal, total project costs including physical contingencies and expected price increases were estimated at Dr. 3,076.7M (US\$84M) with a foreign exchange component (direct and indirect) of US\$40M or of about 48% of total costs. The actual cost of the project amounted to Dr. 5,589.7M (US\$73.3M) with a foreign exchange component of US\$40.7M or about 55.5% of total costs. The lower than estimated total project costs in US\$ was due to shortfalls in all project components but the construction of greenhouses, while the additional cost in Drachmas was mainly due to the higher than anticipated internal inflation during project implementation (about 20% per year compared with about 7% per year estimated at appraisal) coupled with about 200% devaluation of the Drachma.

IV. Agricultural Impact

33. As envisaged at appraisal, cucumbers, tomatoes, eggplants, peppers, and melons are the most important greenhouse crops, with cucumbers being the main crop produced and the only crop exported to European markets, mainly to West Germany. Melons are planted in the greenhouses following the cucumber crop. The tomato variety "Early Pack" currently grown in the project area produces large fruits which are suitable for the domestic market and export to Middle Eastern countries but not to Europe whose consumers prefer small tomatoes. The eggplant and pepper varieties presently grown are suitable for the domestic market only. The melon varieties are of excellent quality and are suitable for both domestic and export markets. Export of cucumbers in the project area rose from 4,500 tons in 1978 to about 32,300 tons in 1984, while production rose from 9,600 tons to 80,300 tons during the same period.

34. The continued monocrop orientation of exports is partly due to the still persistent weakness of the marketing organization--the large number of traditional exporters are not strong enough to conduct market research to introduce new export products--but mostly due to the failure to identify appropriate varieties preferred in the European markets suitable for Greek growing conditions. It is expected that the research now being conducted, especially on tomato varieties, will soon provide an adequate type of tomato acceptable in foreign markets.

V. Economic Rate of Return

35. At the time of appraisal, the Economic Rate of Return (ERR) on the proposed investments for the Vegetable Production and Marketing project as a whole was estimated at about 35%. No separate ERRs were calculated for individual components because they were considered to be interdependent. The ERR recalculated in the Government's PCR is 29% and is considered to be satisfactory. It is mainly the result of the implementation of the greenhouse component and, to a lesser extent, the extension and research components. Most of the benefits of the latter two components will still reach full development in the years to come. Because the other three components (marketing, tractor trailers and packhouses) were either not implemented

(marketing organizations) or were completed to a lower level of investment during the present year, no estimates of their impact were available at the time of the preparation of the PCR. Therefore, possible incremental benefits due to those components were not included in the Government's PCR calculation. It is also important to note that at appraisal the "without project" situation for the areas where greenhouses were to be replaced, was assumed to be a return to open field cultivation and therefore per strema benefits in the without case situation were estimated at very low levels. In the Government's PCR, it has been assumed that without the project, the existing greenhouses would have been replaced with construction of lower quality greenhouse and therefore yields would be at about 70% of those achieved under improved greenhouse. This assumption is considered to be more realistic than the one adopted at appraisal.

VI. Institutional Performance

36. Government. Considerable delays were experienced in obtaining the ratification of the Loan Agreement by the Greek Parliament, a requirement for the project to become effective (para 10). Delays in reaching agreement between the Ministries of Agriculture, Commerce and Transport on the strategy for developing the export market system prevented implementation of the marketing component (para 23) and caused shortfalls in the implementation of packhouses (para 14) and tractor-trailer (para 16) components. To improve the financial viability of ABG, the Government in 1978 raised the agricultural lending rates by 0.5% and decreed increases in ABG's capital of about 400% (para 7). During project implementation, with a view to compensating the banking system in part for increasing internal inflation rates, the Government decreed several increases in interest rates for the economy as a whole. Currently, agricultural interest rates vary from 14% to 17%, however they are still below the current annual rate of inflation 1/.

37. Since the project started, the Ministry of Agriculture has been very eager and active in implementing the research and extension components. Delays occurred, however, in the preparation of tender documents for procuring research equipment and in approving procurement decisions thereafter. As a consequence, such equipment could not be procured under the project (para 30).

38. Agricultural Bank of Greece. On the whole, ABG has been very effective implementing the project. Early in the project period, ABG developed and introduced new formats and procedures for the appraisal of medium and long term loans (para 9), and, in spite of delays in project effectiveness, it was very active in implementing the project. Loans for construction of greenhouses were close to appraisal targets since the project started (para 11). Some delays in implementing the other two credit components were partly due to internal bureaucratic procedures within ABG in preparing and approving tender documents, but mostly due to the general failure in reaching an agreement on the strategy for developing marketing organizations, which was outside ABG's control.

39. As agreed during negotiations, ABG's long term debt equity ratio, as defined in the Supplemental Letter No. 3 to the Loan Agreement, 2/ was

1/ Rates of inflation have been at 20% during 1983 and at 18% during 1984.

2/ Short-term debt is excluded from total liabilities.

kept at about 8:1 during all the project years prior to 1983. However, the long-term debt equity ratio has substantially increased from about 4.5:1 in 1978 to about 9:1 during 1983, while the overall debt equity ratio 1/ increased from 7.5:1 in 1978 to 21:1 in 1983, a nearly 200% increase due mainly to the rapid growth in short-term debt. During the same period, however, the return on Average Equity increased from about 1% in 1978 to about 8% in 1983 while ABG's net spread increased by 1 point, from 0.4% in 1978 to 1.4% in 1983.

40. Performance of the Consultants. The foreign consultants, appointed to assist the Ministry of Agricultural in designing the extension training system, introduced a number of recommendations which were readily implemented to improve the production of fruits and vegetables (para 26). The consultants employed to assist the Ministry of Agriculture in reviewing the research programs have been most useful in providing reorientation of research emphasis, developing a quite successful fruit and vegetable adaptive research plan, and providing training to local counterparts (para 29). The consultant engaged to assist ABG in preparing the detailed features of the regional marketing companies prepared a proposal which was well received by the Government (para 24). It lacked, however, the statutory details for the establishment of the companies, and it was not considered appropriate by the Bank since it excluded the already well-developed private exporters and required compulsory marketing of produce through the regional marketing organizations.

41. Performance of the Bank. During project preparation, the Bank assisted the Government in preparing the terms of reference for the feasibility study and agreed to finance the cost of such study from the proceeds of Loan 1165-GR (para 5). During project preparation and appraisal, the Bank recommended increases in agricultural onlending rates and of ABG's capital to improve ABG's financial viability (para 7) and assisted the Government in the preparation of the technical framework for the study of interest rates and agricultural subsidies (para 31). It, however, underestimated the time and resources required for reaching agreement with the Government in the operational features for the establishment of the marketing organizations. Moreover, lack of field supervision for this project for over a year from October 1980 to February 1982 has probably exacerbated the lack of understanding between the Government and the Bank with regard to the establishment of the marketing organizations.

1/ Total debt over total equity.

Conclusions and Lessons Learned

42. In general and in spite of moderate implementation delays and shortfalls in implementing three of the six project components, the project is considered to have achieved most of its major objectives. During the project period--1978-1984--the production of cucumbers, the main product grown under greenhouses in the project area, increased by eight times while the quantities exported increased by about five times. On the other hand, the net benefit per strema, before interest and depreciation, increased by about five times. The fact that the improvements to the marketing system were not fully implemented does not appear to have successfully prevented the overall performance of the project as the already existing marketing channels were used to promote project induced production in internal and external markets. Shortfalls in the implementation of the marketing components might, however, have prevented Greece from taking great advantage of the export markets. The improvements to the extension and research programs have already significantly contributed to the development of applied research, to the dissemination of modern and intensive cultivation techniques to farmers, and to increase the productivity of greenhouse cultivation, not only in the project area but also outside it.

43. Close and intensive collaboration between the Government, the consultants and the Bank from the initial stages of the project cycle resulted in a smooth completion of project appraisal and Loan negotiations with significant improvements to the institutional and operational aspects of ABG's work. It also facilitated the successful implementation of three of the six project components without major delays.

44. Lack of clear and detailed organizational agreement for the implementation of regional marketing companies during project appraisal, coupled with substantial delays in project effectiveness (which prevented hiring of the marketing consultant) and followed by an absence of Bank field supervision missions for about 16 months during a critical stage of project implementation, were the main reasons for the inability to reach agreement on the strategy to be followed to successfully implement the marketing component.

45. Although ABG's long-term debt equity ratio has deteriorated during the project period, from 4.5:1 in 1978 to 9:1 in 1983, its return to average equity increased from about 1% to about 8% and its net spread (before provision for bad debts) from 0.4% to 1.4% during the same period.

GREECE
 VEGETABLE PRODUCTION AND MARKETING
 (LOAN 1588-GR)
 PROJECT FINANCING

	PROPOSED AT APPRAISAL					ACTUAL				
	IBRD	ABG & Government	Beneficiaries	Total	% of Total Cost	IBRD	ABG & Government	Beneficiaries	Total	% of Total Cost
Greenhouses	23.4	28.0	12.9	64.3	77	23.50	32.90	14.10	70.50	96
Research and Extension	2.5	-	-	4.3	5	0.80	n/s	-	0.80	1
Marketing	0.3	1.2	1.4	2.9	3	0.05	n/s	-	0.05	n/s
Packhouses and Cold Storages	1.7	2.1	0.9	4.7	6	0.50	0.40	-	0.90	1
Tractor-Trailers	2.1	2.6	3.1	7.8	9	0.05	0.60	0.40	1.05	1
Total	30.0	35.7	18.3	84.0	100	24.90	33.90	14.51	73.30	100
%	36	42	22	100		34	46	20	100	

1768C

GREECEVEGETABLE PRODUCTION AND MARKETING PROJECT(LOAN 1588-GR)Estimated and Actual Loan Disbursements

	CUMULATIVE DISBURSEMENT END OF QUARTER (US\$ Million)	ACTUAL		As % of
		<u>SAR Estimated</u>	<u>Estimate</u> <u>Actual</u>	
FY79				
March 31, 1979	2.4	-	-	0
June 30, 1979	5.0	-	-	0
FY80				
Sept. 30, 1979	6.7	-	-	0
Dec. 31, 1979	8.5	-	-	0
March 31, 1980	10.0	-	-	0
June 30, 1980	11.5	4.6	-	40
FY81				
Sept. 30, 1980	13.2	5.1	-	39
Dec. 31, 1980	14.9	6.7	-	45
March 31, 1981	16.5	8.3	-	50
June 30, 1981	18.2	9.3	-	51
FY82				
Sept. 30, 1981	19.8	10.0	-	50
Dec. 31, 1981	21.5	10.0	-	47
March 31, 1982	23.1	12.2	-	53
June 30, 1982	24.7	12.4	-	50
FY83				
Sept. 30, 1982	26.0	13.2	-	51
Dec. 31, 1982	27.0	14.6	-	54
March 31, 1983	28.0	15.2	-	54
June 31, 1983	30.0	15.6	-	52
FY84				
Sept. 30, 1983	30.0	16.1	-	54
Dec. 31, 1983	30.0	16.9	-	56
March 31, 1983	30.0	18.3	-	61
June 30, 1984	30.0	20.1	-	67
FY85				
Sept. 30, 1984	30.0	20.6	-	69
Dec. 31, 1984	30.0	23.2	-	77
March 31, 1985	30.0	24.9	-	83

GREECE

VEGETABLE PRODUCTION AND MARKETING PROJECT

Appendix 3

(LOAN 1588-GR)

PROJECT COMPLETION REPORT

FINANCIAL RATIOS: AGRICULTURAL BANK OF GREECE

(Million Drachmas)

	<u>1983</u>	<u>1982</u>	<u>1979</u>	<u>1978</u>
Debt Equity Ratio				
Total Liabilities	483,589.7	385,153.9	167,537.0	139,473.0
Total Equity	22,856.0	20,974.7	19,693.0	19,502.0
=	21.2	18.4	8.5	7.5
Long-term Debt Equity Ratio				
Long-term Liability	203,562.9	171,282.6	104,873.0	92,642.0
Total Equity	22,866.0	20,974.7	19,693.0	19,502.0
Return on Average Equity				
Net Income/	1,881.5		191.0	
Average Equity	21,915.5		19,597.5	
=	8.6		1.0	
Gross Revenues on Earning Assets				
Revenues for Int. & Comm.				
Earned/	56,99.5		15,575.0	
Average Earning Assets	449,600.0		170,284.5	
=	12.7		9.2	
Gross Expenditures on Earning Assets				
Interest & Commissions				
Paid/	39,279.0		9,993.0	
Average Earning Assets	449,600.0		170,284.5	
=	8.7		5.9	
Gross Spread on Averag. Earn. Assets				
Gross Earnings	12.7		9.2	
Minos: Gross Expenditures	8.7		5.9	
=	4.0		3.3	
Administrative Cost on Earning Assets				
Administrative Expenses/	11,675.5		4,846.0	
Average Earning Assets	449,660.0		170,284.5	
=	2.6		2.9	
Net Spread on Average Earning Assets				
Gross Spread on Earning Assets	4.0		3.3	
Minos: Administrative Cost on Earn. Assets	2.6		2.9	
=	1.4		0.4	

AGRICULTURAL BANK OF GREECE

29. VENIZELOS STREET
ATHENS

COMPLETION REPORT

ON THE VEGETABLE PRODUCTION AND MARKETING PROJECT

IN CRETE AND PELOPONNESUS

ATHENS: JANUARY 1985

AGRICULTURAL BANK OF GREECE

23, VENIZELOS STREET
ATHENS

Table of Contents

	Page
I. Introduction	1
II. Project Identification Preparation and appraisal	3
III. Implementation	8
IV. Financial Performance	20
V. Economic Reevaluation	21
VI. Conclusions	22

ANNEX

I. INTRODUCTION

The agricultural sector in Greece remains a basic branch of the economy sharing about 17% of GDP in 1983 from about 23% in 1965. It accounts for 31% of total exports and employs 27% of the active population.

Fruits and vegetables account for about 41% of agricultural exports yielding nearly US \$ 467 million of foreign exchange in 1983. Most of the fruits and nearly all of the vegetable exports are marketed in the EEC.

Annual gross fixed investment increased from US \$ 204 million in 1970 to US \$ 565 million in 1983 which accounted for about 8% of total gross fixed investment in the economy during the same year.

The main characteristics of Greek agriculture are its small and fragmented land holdings, the small percentage of irrigated land, (only 25% of the cultivable land), the inefficient organization of the marketing system and the inadequate research and extension services. As a result the average farm income is low compared to the national average income and many farmers try to increase their earnings with part time employment or by intensive cultivation (such as through investments in green houses) of high value crops (such as out of season vegetables).

In order to face these problems the Government emphasizes in the National Development Plan and Investment Program for the agricultural sector the expansion of irrigated area, the consolidation of fragmented land holdings, the improvement of marketing organization and facilities and the expansion of intensive cultivations. Therefore the specific project for vegetable production and marketing held a high priority for implementation. The project included the construction of greenhouses, the improvement of existing research and extension services, the organization of marketing companies, the construction of packhouses and cold storages for vegetables and supply refrigerated tractor trailers for transport of project commodities.

The total cost of the project was estimated US \$ 84 million (Dr. 3076,7 million) and the sources of finance were the World Bank (US \$ 30 million), the Agricultural Bank of Greece (US \$ 33,9 million), the beneficiaries (US \$ 18,3 million) and the Government (US \$ 1,8 million).

The implementing agency for the major part of the project and credit channel for most of the investments is the Agricultural Bank of Greece. The

Ministry of Agriculture also has undertaken the implementation of the part of the project which deals with research and extension services.

The Agricultural Bank of Greece was established in 1929 as an independent banking institution and belongs to the category of Public Banks. The main activities of ABG are: the provision of credit to farmers through short term and long term loans, the financing and support of farmers' cooperative organizations and the setting up and operation of modern units for the packaging, standardisation and processing of all kinds of farm products. Furthermore the Bank undertakes on behalf of the state all of the financial dealings connected with the implementation of the Common Agricultural Policy. The Bank also makes special efforts for a more rational organization of production and for improving the efficiency of Agricultural production units. In addition it accepts time and saving deposits and owns the majority of the stock of an Agricultural Insurance Company.

The ABG employs about 6.700 employees and nearly half of its personnel are well experienced university graduates. Its central office is located in Athens but the net work of 187 branches and 159 offices for collection of deposits is wide spread all over the country.

The ABG is directed by the Governor and his Deputy, but supreme administrative authority is vested on the Board of Directors consisting of 13 members.

II. PROJECT IDENTIFICATION, PREPARATION AND APPRAISAL

The Ministry of Agriculture identified the need for a development project for the production and marketing of horticultural products, mainly because of the importance of the above subsector for the agricultural sector of the Greek economy and the prospect of the entry of the country into the European Economic Community and the consequent need for the adjustment of horticultural production and marketing to the standards of the EEC.

Under these circumstances the Ministry of Agriculture and the Agricultural Bank of Greece entrusted the study of the production and marketing of the horticultural products and the preparation of a development project to the Stevenson and Kellogg consultant company. In this study the main problems of the sector, such as the small and fragmented land holdings, the low labour productivity, the limited income of the producers, the inefficiencies of the marketing channel and the poor research and extension services were concretely identified. One of the basic findings of the study on which the development project was based was the good prospects for the increase of the production of the out-of-season vegetables in the areas of Crete and Peloponnesus due to the favourable weather conditions which prevail in these areas. During the preparation of the study and the development project, the Ministry of Agriculture and the Agricultural Bank of Greece provided the proper assistance to the consulting team of Stevenson and Kellogg in order to carry out its task effectively.

The preparation of the project by the consultant's company followed smoothly the original identification of it by the Ministry of Agriculture and there were no major delays between these successive procedures. Furthermore, we could say that the scope of the project was clear from the beginning and there was no need for any revision during the preparation procedure.

The project included adequate information about the production conditions, the situation in the marketing channels and in research and extension services in the specific areas of Crete and Peloponnesus and for the subsector of out of season vegetables.

During the preparation of the project the executing agencies were fully informed for any conditions and requirements concerning it. The project included provisions and was an opportunity for the improvement of the

project appraisal procedures used by the Agricultural Bank of Greece, contributing in this way to the training of its personnel.

The appraisal of the project was carried out in October/November 1977 by a team consisting of World Bank officials and other consultants. The computed financial and economic rates of return showed that the implementation of the project would benefit the various participating entities. In general the identification, preparation and appraisal procedures were properly completed without any special problem and the collaboration among the participating entities, was smooth and effective.

The project was in the Government's priority list of development programs in the agricultural sector because of the importance of out of season vegetables subsector in the agricultural economy. The contribution of the project to the regional development of Crete and Peloponnesus is quite significant since, according to ABG data for the year 1982, the production under greenhouses represents 10% of the total crop production in Crete and 5% of the total crop production in Peloponnesus. Especially in the regions of Heraclion (Crete) the production under greenhouses represents 14% of the total crop production of the region and in Chania 5% of the total crop production. As far as Peloponnesus is concerned the same percentage for Calamata, Pirgos and Sparti is 7%, 4% and 3% respectively.

The importance of the project for the area is even greater because of the introduction of new methods of cultivation which would increase productivity in the areas of the project and consequently farmers income.

The project would consist of the following complementary components:

- construction of greenhouses on about 9.000 stremma to permit the production of out of season vegetables,-provision of equipment,-training and consultant services and facilities to improve existing research and extension services,
- consultant services and facilities to help organize marketing companies mainly to promote exports,-construction and improvement of packhouses and cold storages for vegetables, and-supply of refrigerated tractor trailers for transport of project commodities.

Greenhouses

The greenhouses component would involve replacement of small, old and inefficient plastic houses with improved standard greenhouses on about 7,000 stremma and the erection of new greenhouses on about 2,000 stremma which were under open cultivation. About 75% of the total area would be

located in Crete and the remaining 25% in Peloponnesus. The greenhouses would be designed to meet the specific weather and production conditions of Crete and Peloponnesus.

Research and Extension

Equipment and supplies would be provided to selected research centers and institutes and to extension services operating in the project areas. The research equipment would permit in-depth investigations in identified areas such as vegetable varieties, heat ventilation, greenhouse structures and coverings. The extension service would be provided with basic materials and supplies to conduct an effective program. Most of the research equipment would be for centers and institutes in Crete and Peloponnesus, but others, which are located outside these regions, but their research programs benefit project needs would also be eligible recipients.

Approximately 50 man years of training abroad would be provided for 8 research and 30-40 extension personnel.

Two research and two extension consultants, one each for Crete and Peloponnesus, would be provided. Each consultant would have at least one counterpart in addition to other local research and extension personnel which would be employed to assist in conducting programs to be developed by the consultants. Each of the research and extension consultants would serve for about four and three years respectively but the duration of their services is subject to review depending on project needs.

Marketing Organization

About four marketing companies would be established in Crete and Peloponnesus. These companies would be involved in the marketing of primarily horticultural products in both domestic and export markets. The project would provide office buildings and equipment and about 4 man-years of foreign consultant services to help in establishing and organizing the companies and in operating them initially. It would also provide funds to cover salaries of

local counterpart and support staff and recurrent expenditures during the initial three years of operation.

Packhouses and Cold Storages

Six new packhouses with appropriate cooling facilities would be constructed and at least as many existing packhouses would be improved. They would be suitable for multiproduct use and each of them would have a capacity of 40 tons per day except one which would have a capacity of only 25 tons. Typical improvements of existing packhouses would involve replacement of packing lines and addition of cold stores.

Refrigerated tractor-trailers

The project would provide 50 refrigerated tractor-trailers each with a standard capacity of 20 tons and adapted to carry standard Europallets.

Cost Estimates

The total cost of the project including physical contingencies and expected price increases is estimated at Dr. 3.076,7 million (US \$ 84 million) with a foreign exchange component (direct and indirect) of US \$ 40 million or 48% of total cost. The cost estimate is based on June 1978 prices and includes taxes and duties computed at Dr. 430 million (US \$ 11.7 million). Physical contingencies have been computed at 10% on all items except for equipment and consultant services where no such contingencies were provided. Price contingencies on all civil works have been computed at annual compound rates of 9% during 1978-79 and 8% thereafter, contingencies on equipment have been estimated at annual compound rates of 7.5% during 1978-1979 and 7% thereafter. These are based on the World Bank's "Guidelines on expected Price Increases. Jan. 31 1977".

Financing

The proposed Bank loan of US \$ 30 million would finance about 36% of the total cost of the project (75% of the foreign exchange component) or about 42% of total cost net of taxes and duties. Of the remaining project cost of US \$ 54 millions, ABG would finance US \$ 33.9 million (40%), beneficiaries US \$ 18.3 million (22%) and Government US \$ 1.8 million (2%).

The Agricultural Bank of Greece and the Ministry of Agriculture believe that the implementation of the project would lead to increase of the income of the beneficiaries and this fact could provide a basis for the future expansion of the project.

III. IMPLEMENTATION

The project was expected to be implemented during the 1978-82 period and procurement to start towards the end of 1978 and continue until mid 1982.

The loan agreement of the project was signed on July 10, 1978. After this date according to the provisions of the loan agreement investments were eligible for finance from the loan.

However the disbursements had a late start because the declaration of the effectiveness of the loan was done on May 12, 1980 after the ratification of the loan agreement by the Greek Parliament, which took place on January 26, 1980.

As a consequence, the disbursements which started after this date, yielded smaller amounts in U.S. Dollars because the exchange rate between the US Dollar and the Drachma had changed in the meantime.

The revisions made after the construction of the project had started involved the following:

- Consideration of private truck owners as beneficiaries of tractor trailer credit, provided that their main activities included the export of fresh horticultural produce.

- In the case of EuroKreta, a broad based company of Crete, an exemption was made to the number of tractor trailers to be approved for financing under the project. So 19 tractor trailers were approved for this company but unfortunately it's still awaiting the operating licence from the Ministry of Transportation.

- Reallocation of loan amounts and amendment of the total area of greenhouses were permitted⁵⁰ that existing greenhouses to be replaced on about 7.400 str. instead of 7.000 str. reallocating the loan amount from 18.200.000 US Dollars to 14.700.000 US dollars and the additional greenhouses to be placed on 3.600 str. instead of 2.000 str. of open cultivated land reallocating the loan amount from 5.200.000 US dollars to 8.700.000 US dollars. Thus the total area of greenhouses under the project was increased from 9.000 str. to 11.000 str.

- For the marketing organization component of the project, revisions were made twice for the dates of hiring marketing consultants and for submitting the organizational and implementation plans for the marketing

companies the establishment of which was disappointing. (Only two marketing companies were established which haven't operated yet).

- The procedure for the realization of civil works for the construction of new packhouses was revised. According to this revision the procurement by international bidding was abandoned and the civil works of the new packhouses could be undertaken by local contractors through public bidding.

- The study on Agricultural interest rates and subsidies was completed and its findings were very useful.

- The closing date of the project was agreed to be the 30th of June 1984 instead of the 30th of June 1982.

Reporting

ABG the executing agency issued periodic progress reports which were useful to other supervisory agencies as the Ministries of Agriculture and National Economy and also to the World Bank.

Procurement

The problems which occurred concern the procurement for the construction of the packinghouses and cold stores by International Competitive Bidding. These were due to the fact that the normal procedure for constructing buildings to be used by cooperative organizations is through public bids where bidders almost always are local constructors and the cooperatives didn't agree to change this procedure.

After the revision of this point the usual way for the civil work was followed and only the equipment were procured through International Bidding. The obvious benefits were not only the achievement of better prices for the construction of packhouses but also a contribution to the economy of the area because locally produced materials and labor force were used.

It must be noted that some delay to this part of the project is due also to cooperatives elections which postponed decision making.

Implementation Schedule

Part A1. Construction of greenhouses

The actual constructions were above the original estimations as far as the new greenhouses are concerned. The actual replacements have covered 100,7% of the original estimations and 95,3% of the last ones (after amendment). The analytical data concerning the constructions is shown below.

Table 1. Construction of greenhouses (str.)

	<u>Estimated</u>			<u>Actual</u>		
	New	Replace- ment	Total	New	Replace- ment	Total
1978	300	1.100	1.400	820	2.288	3.108
1979	700	2.600	3.300			
1980	1.200	4.100	5.300	1.226	3.406	4.632
1981	1.600	5.700	7.300	1.970,4	4.506	6.476,4
1982	2.000	7.000	9.000	2.313,8	4.963,5	7.277,3
1983	-	-	-	3.105,4	6.059,7	9.165,1
1984	3.600	7.400	11.000	3.699,8	7.050,3	10.750,1

The new greenhouses, which were constructed by the end of 1982, are above the original estimations, since 2.314 str. had been constructed instead of 2.000 str. that were estimated originally. Also by the end of November 1984, 3.700 str. had been constructed instead of 3.600 str. that were estimated after the amendment of the area was made.

As far as the replacement of the existing greenhouses is concerned the area actually used until the end of November 1984 is 7.050 str. instead of 7.400 str. which were the revised estimates.

The loans signed during the years 1978-1984 are shown in tables 2a, 2b and amounted 4.215 million Drs while the cost of the construction was 5.269 million Drs. The total area of greenhouses which corresponds to the above figures of signed loans is 11.335 stremmas.

The implementation of the greenhouses component of the project could be considered very good compared to that of the other components of it. The total area constructed is 10.750 str. which is 119,4% of that originally estimated and 97,8% of the last projection. Also the greenhouses established were better constructions than those existed before because new technical specifications were introduced. This permitted new cultivation techniques to be developed which improved the quality and increased the yields of the products.

On the other hand, the implementation of the other parts of the project influenced to some extent the exports of the products of greenhouses and consequently their prices, affecting mostly the replacement of the existing greenhouses.

Part A2. Packhouses and Cold Storages

The original implementation schedule of this part of the project included the construction of six new packhouses with appropriate cooling facilities and the improvement of many existing packhouses. The packhouses would have been suitable for multiproduct use and each of them would have a capacity of 40 tons per day except one which would have a capacity of only 25 tons. The improvement of existing^{pack}houses would involve replacement of packing lines and addition of cold stores.

The actual implementation involves the improvement of five existing packhouses in Mires, Paleochora Selinon, Timbaki, Filiatra and Vori-Faneromeri and the construction of two new ones in Finikous and Skala (Table 3).

The improvements which were made in the existing packhouses concerned the replacement or addition of packing lines and in the new ones the construction of buildings and the procurement of the necessary machinery.

All the above packhouses have been completed except that of Lakoniki in Skala, which is still in progress.

The capacity of each of the above packhouses exceeds 20 tons per day for the cucumbers and some of them are for multiproduct use (Details are shown in table 3).

The total amount of loans signed for this part of the project is 126,2 million Drs. which also represents their total cost.

P A3. Tractor trailers

In this part of the project provision was made of about fifty refrigerated tractor-trailers each with a standard capacity of about 20 tons.

Beneficiaries of subloans under this part of the project had to be experienced trucking companies the main activities of which included the export of fresh horticultural produce. The total number of tractor trailers to be financed for a single beneficiary couldn't exceed five.

However exemption was made for Eurokreta, a broad based company of Crete, and a loan was approved for the procurement of 19 tractor trailers but unfortunately this company didn't get the licence to operate as a trucking company.

Also an other exemption was made and private truck owners were considered as beneficiaries for credit because the trucking companies, despite the efforts made, didn't show interest to be financed. After this revision, the loans which were signed by private owners amounted to 77.705 thousand drs and concerned the purchase of 7 refrigerated tractor trailers, 4 tractors and 12 refrigerated trailers the total cost of which was 129.174 thousand drs. The factors which affected the implementation of this part of the project, were the high contribution of the beneficiaries and the high prices of the new refrigerated tractor trailers.

Part B. Marketing Organization

The original implementation schedule of this part of the project concerned the establishment of four companies in Crete and Peloponnesus for the marketing primarily of horticultural products to domestic and export markets, including inter alia about four man-years of foreign consultants' services for this purpose. The appointment of the consultants should have taken place not later than December 31, 1978 and the submission of implementation plans for the marketing companies not later than June 30, 1979.

Actually the first regional marketing company under the project was EPSIPAM in Messinia Peloponnesus which was already in existence but has broadened its scope in 1980 so as to include the marketing of agricultural products in its activities. The new brand of the company was AGREM and its shareholders were Agrex 51% and the Central Union of Cooperatives Unions of Messinia 49%.

The second regional marketing company under the project was LAKONIKI S.A. which was established in 1981 and is located in Scala-Lakonia-Peloponnesus.

The shareholders of the company are the Union of Agricultural Cooperatives of Lakonia 55%, the Agricultural Cooperative of Glycovrissi 3%, the Agricultural Cooperative of Apidea 0,5% and the Agricultural Bank of Greece 41,5%.

For LAKONIKI S.A. a loan of 33 million Drs has been also approved for the construction of a packing house and the procurement of the necessary machinery.

No other marketing company was established and those established didn't operate because there was a change in the policy concerning the marketing of the farm products. This policy is based on the establishment of Assembly Markets in the production centers.

As far as the employment of marketing consultants is concerned only one Mr. Hatjisotiriou - was hired through the Cypriot Consulting Firm N.V. Marketing Ltd (Mr. Vasiliou) and started his duties on the first of November 1981.

Mr. Hatjisotiriou was expected to activate the regional marketing companies of the Peloponnesus area (AGREM, LAKONIKI).

The Consulting Firm's proposals were submitted during the first quarter of 1982 but the World Bank didn't consider them reasonable.

Part C. Research and Extension Programs

a. Research

- Two Research Consultants, one for Crete and the other for Peloponnesus were provided. Dr. H. Passam plant physiologist has been working in the Vegetable Institute of Kalamata since March 1981 and Professors R. Carolus and A. Bry worked on a part time basis in the region of Crete during 1980 and 1981.

The above consultants helped the local research centres to plan and carry out various projects concerning:

- the testing of new vegetable varieties with special reference to fruit quality and productivity under unheated conditions.

- new cultivation techniques including the use of vibration for fruit-setting of tomatoes, new methods of crop spacing, support and pruning, the use of grafting for disease control of certain crops, the use of mulching and of alternative planting substrates and propagation composts.

- improvement of methods of irrigation and fertilization with the assistance of leaf and substrate analyses.

- improvement of disease and pest control methods including the use of biological control techniques and solar sterilization of the soil.

- determination of actual production costs and potential market returns for the principal greenhouse vegetable crops and investigation of ways to reduce costs.

- the solution of some special local problems caused by water and soil salinity, or the excessive use of fertilizers and other agrochemicals.

The main results of these projects were presented at special meetings to the research, extension and other relevant personnel at Heraclion, during April 1980, April 1982, and May 1984. Such meetings will be repeated every two years.

- The training of research personnel concerned 11 trainees, 8 of whom were sent abroad under the original programme and an additional 3 who departed this year under a supplementary agreement with the Bank and are still continuing their studies.

The majority of trainees have completed their training and are now reestablished in their research posts. Additionally 3 trainees, with the agreement of the Bank, converted their studies to the level of Ph.D. degree instead of the level of M.Sc. as originally provided in the loan.

Totally the above training programme has comprised 20 man-years abroad until now.

Four of the ^{above} trainees are for Peloponnesus and the remaining 7 for Crete. A list of these trainees, by subject country and University can be provided if necessary.

The equipment and supplies provided for the research centres included:

- the construction of new greenhouses for experimental purposes, the provision of heating systems, apparatus to monitor the greenhouse environment, apparatus for soil sterilization.

- two fourwheel transport vehicles

- some items of equipment for chemical residue testing, and for soil and leaf analysis.

The remaining equipment for the laboratories is in the process of procurement but, owing to delays in purchasing procedure, will not be supplied before the end of 1984.

b. Extension

Two extension consultants were provided, Mr. Eric Le Tissier and J.G. Gillow, who worked for 25 man months in total during 1980, 1981 and 1982.

The above consultants helped the extension services in the two regions with:

- the organization of two training centres, one in Crete and the other in Peloponnesus, which included four greenhouses. The centres, which are still in operation are used for the demonstration of improved cultivation practices to extension officers and farmers.

- the training of extension officers in all aspects of greenhouse operation and cultivation.

- the training of farmers to improve cultivation methods, crop production and quality.

- organization of seminars on special topics of greenhouse operation for both extension officers and farmers - the seminars being held both at the demonstration centres and in the areas of production.

- the provision of information leaflets for training purposes.

Following the departure of the extension consultants, the training of farmers and other extension officers was undertaken by the previously trained agronomists with the collaboration of the research consultant, Dr. Passam, who has continued to work in Peloponnesus.

Of the 33 man-years overseas training for extension staff provided for in the programme, approximately 18 man-years have been taken up. Totally, 17 agronomists have been placed in foreign institutions. Of these, 8 have returned and now work in the areas of the programme. The remaining 9 will return during 1985. Additionally two familiarization visits were arranged for extension officers to visit modern greenhouses, institutions and markets in various European states. Each visit comprised 20 days and in total 27 agronomists took part.

Failure to utilize all the training period provided for in the programme was due to language difficulties on the part of some agronomists and also to difficulties in securing places at foreign universities.

Of the various items of equipment for the extension service provided for in the programme, the most essential have been purchased and are in use.

Costs

The total cost of the project including physical contingencies and expected price increases was estimated at Dr. 3.076,7 million (US \$ 84 million) with a foreign exchange component (direct and indirect) of US \$ 40 million or 48% of total cost. The cost estimate was based on June 1978 prices and includes taxes and duties computed at Dr. 430 million (US \$ 11.7 million).

The actual cost of the project amounted US \$ 73.28 million with a foreign exchange component of US \$ 40.73 million or 56% of the total cost (Table 7).

Comparison between actual and estimated cost for the various components of the project shows the following:

- The actual cost for the construction of greenhouses is US \$ 70.5 million which is 41% more than that estimated while the area of the greenhouses constructed is 19.4% more than the original projection.
- The actual cost for the packhouses and cold stores is US \$ 0.90 million which is only 22% of that estimated but only two new packhouses were constructed instead of six and five existing were improved.
The high costs of greenhouses and packhouses are due to the high inflation rates.
- The actual cost for the refrigerated tractor trailers is US \$ 1.01 million which is only 15% of that estimated and this is due to the fact that only 7 refrigerated tractor trailers, 4 tractors and 12 refrigerated trailers were purchased instead of 50 refrigerated tractor trailers that were estimated.
- The actual cost for marketing organization concerns only the cost of the marketing consultant which is US \$ 59.300. The cost is lower than the estimated because only one marketing consultant was hired for sixteen months instead of four man-years consulting services.
- The actual cost for research and extension is US \$ 812.000 which is 21% of that estimated because the training of extension personnel concerned approximately 18 man-years instead of the 33 man-years overseas training.

Financial Sources

The financial sources of the project were the following:

	US \$ Million	%
World Bank	30,0	36
Agricultural Bank of Greece	33,9	40
Beneficiaries	18,3	22
Government	<u>1,8</u>	<u>2</u>
	84,0	100

Detailed financing plan for the different project components would have been as follows:

	IBRD	ABG	Beneficiaries	Government	Total
	(US \$ million)				
Greenhouses	23,4	28,0	12,9	-	64,3
Research-Extension	2,5	-	-	1,8	4,3
Marketing Organization	0,3	1,2	1,4	-	2,9
Packhouses-Cold stores	1,7	2,1	0,9	-	4,7
Tractor trailers	<u>2,1</u>	<u>2,6</u>	<u>3,1</u>	<u>-</u>	<u>7,8</u>
Total	30,0	33,9	18,3	1,8	84,0

The foreign exchange component of the project was estimated US \$ 40 million or 48% of the total cost. The percentage of the foreign exchange for the various components of the project was estimated as follows:

Greenhouses	42%
Research and extension	59%
Marketing organization	31%
Packhouses-Cold stores	65%
Tractor trailers	73%
Contingencies	49%

The proposed Bank loan of US \$ 30 million was expected to finance about 36% of the total cost of the project (75% of the foreign exchange component) or about 42% of total cost net of taxes and duties.

The beneficiaries of investments in greenhouses and in packhouses and cold storages were to contribute at least 20% each towards the costs

of these components while those eligible for investment in tractor trailers were ^{expected} to finance 40% of their cost.

Except for foreign expenditures on consultant services which were supposed to be financed by the World Bank, costs of establishing the proposed marketing companies would have been financed by equity contributions of the grower/exporter groups (51%) and of ABC (49%).

The actual financing of the project was as follows:

	US \$ Million	%
World Bank	24,625	33,6
Agricultural Bank of Greece	33,985	46,4
Beneficiaries	14,505	19,8
Government	<u>0,162</u>	<u>0,2</u>
Total	73,277	100,0

The actual financing for the different project components was as follows:

	(US \$ Million)				
	IBDR	ABG	Beneficiaries	Government	Total
Greenhouses	23,376	33,020	14,100	-	70,496
Research-Extension	0,650	-	-	0,162	0,812
Marketing-Organization	0,052	0,007	-	-	0,059
Packhouses-Cold Stores	0,318	0,580	-	-	0,898
Tractor trailers	<u>0,229</u>	<u>0,378</u>	<u>0,405</u>	<u>-</u>	<u>1,012</u>
Total	24,625	33,985	14,505	0,162	73,277

The actual foreign exchange component of the project is US \$ 40,73 million or 56% of the total cost.

The percentage of the foreign exchange for the various components of the project was as follows:

Greenhouses	56%
Research-Extension	81%
Marketing Organization	84%
Packhouses-Cold Storage	39%
Tractor trailers	82%

(Details for the above figures are shown in tables 6,7).

IV. FINANCIAL PERFORMANCE

The financial rate of return for the greenhouses component of the project was estimated higher than 31% which is considered satisfactory compared to the figures which had been calculated on typical investment models and which ranged between 22% and 40% according to the product concerned.

The computations were based on year 1983 prices of inputs and outputs and on the following assumptions:

- There is one year time lag between costs and benefits and the durability of the greenhouses is ten years.
- For yields, prices, costs etc. actual data for the different crops in the project areas were used until 1984. For the next years the 1984 figures were used.
- Without project, the area of the new established greenhouses would have been used for open-field cultivation while the existing greenhouses would have been replaced with constructions of lower quality and as a result with lower yields (About 70% of the new ones with the project).

This assumption is considered more realistic and is different from that made at the appraisal stage of the project where it was assumed that the entire area would be used for open field cultivation.

- Residual value is estimated 10% of the cost of investments.
- Details about the figures obtained after the above calculations are shown in table 8 .

V. ECONOMIC REEVALUATION :

The economic rate of return for the greenhouses component of the project is estimated higher than 29% which is considered satisfactory. The economic rate of return estimated at the appraisal stage was 35% but, concerned all the components of the project and so it cannot be compared with the figure estimated here.

The main assumptions ^{made} in addition to those for the estimation of the financial rate of return, are the following:

- The shadow price of US Dollar is estimated 10% higher than its official exchange rate. Thus whenever a foreign exchange component is involved there is a 10% increase of the relevant value.
- All the components of the project which are imported are free of duties and taxes.
- Prices of inputs and especially those of fertilizers are subsidized prices.
- Labor is valued at the same rate.
- Details about the figures obtained after the above calculations are shown in table 9 .

VI. CONCLUSIONS

The objectives of the project were to (a) increase foreign exchange earnings (and savings) and promote economic growth by expanding production of out-of-season vegetables in two high potential regions; (b) help raise labor productivity on small farms by promoting intensive cultivation; (c) strengthen existing research and extension institutions so as to promote production of high value crops; (d) strengthen the Agricultural Bank of Greece by enabling it to improve its lending operations and recourse mobilization efforts.

On the whole we consider that the project succeeded its objectives. The production of cucumbers which was the main product in the areas of the project increased by 8,4 times from 1978/1979 to 1983/84. In the same period the quantity of exports of cucumbers produced in the areas of the project increased by 4,9 times. On the other hand the net benefit per streama before interest and depreciation increased by 4,9 times. During the implementation of the project, from 1977 to 1984, the Agricultural Bank of Greece and its branches in the areas of the project received considered and approved 7.554 applications for loans for the installation of new greenhouses and for the replacement of the existing ones.

We consider that although the part of the project concerning the marketing facilities was not fully implemented, this fact did not have an adverse effect on the overall performance of the project because the already existing marketing channels were used efficiently for the promotion of the products to the final consumer.

The improvement of the infrastructure in research and extension facilities in the areas of the project contributed significantly to the application and use of modern intensive techniques by the farmers and to the increase of ^{the} productivity of cultivation under greenhouses.

Table 2a. Subloans signed during the year for greenhouses

		No of Loans (1)	Amount 000 Drs. (2)	Cost 000 Drs. (3)	Area Stremmas (4)	Loan 000 Drs/str. (5)	Cost 000 Drs/str. (6)
1978	Replacement	278	51.759	64.699	473,8	109	136
	New	315	56.888	71.110	570,2	100	125
	Total	593	108.647	135.809	1.044,0	104	130
1979	Replacement	1.055	288.562	360.702	1.814,9	159	199
	New	182	79.428	99.285	249,7	318	398
	Total	1.237	367.990	459.987	2.064,6	178	223
1980	Replacement	828	299.527	374.409	1.165,1	257	321
	New	310	140.651	175.814	490,2	287	359
	Total	1.138	440.178	550.223	1.655,3	266	332
1981	Replacement	942	306.276	382.845	965,5	317	396
	New	428	177.339	221.674	631,5	281	351
	Total	1.370	483.615	604.519	1.597,0	303	378
1982	Replacement	664	304.729	380.911	871,1	350	437
	New	325	200.966	251.207	548,3	366	458
	Total	989	505.695	632.118	1.419,4	356	445
1983	Replacement	700	486.480	608.100	959,6	507	634
	New	409	426.143	532.679	724,1	588	736
	Total	1.109	912.623	1.140.779	1.683,7	542	677
1984	Replacement	781	777.440	971.000	1.262,0	616	770
	New	337	618.885	773.606	615,0	1.006	1.258
	Total	1.118	1.396.325	1.745.406	1.877,0	744	930
Total	Replacement	5.248	2.514.773	3.143.466	7.506,0		
	New	2.306	1.700.300	2.125.375	3.829,0		
	Total	7.554	4.215.073	5.268.841	11.335,0		

Table 2b. Subloans signed at the end of the year for greenhouses
(Cumulative)

	No of Loans (1)	Amount 000 Drs. (2)	Cost 000 Drs. (3)	Area Stremmas (4)	Loan 000 Drs/str. (5)	Cost 000 Drs/str. (6)	
1978	Replacement	278	51.759	64.699	473,8	109	136
	New	315	56.888	71.110	570,2	100	125
	Total	593	108.647	135.809	1.044,0	104	130
1979	Replacement	1.333	340.321	425.401	2.288,7	149	186
	New	497	136.316	170.395	819,9	166	207
	Total	1.830	476.637	595.796	3.108,6	153	192
1980	Replacement	2.161	639.848	799.810	3.453,8	185	231
	New	807	276.967	346.209	1.310,1	211	264
	Total	2.968	916.815	1.146.019	4.763,9	192	240
1981	Replacement	3.103	946.124	1.182.655	4.419,3	214	268
	New	1.235	454.306	567.882	1.941,6	234	292
	Total	4.338	1.400.430	1.750.537	6.360,9	220	275
1982	Replacement	3.767	1.250.853	1.563.566	5.290,4	236	295
	New	1.560	655.272	819.090	2.489,9	263	329
	Total	5.327	1.906.125	2.382.656	7.780,3	245	306
1983	Replacement	4.467	1.737.333	2.171.666	6.250,0	278	347
	New	1.969	1.081.415	1.351.769	3.214,0	336	420
	Total	6.436	2.818.748	3.523.435	9.464,0	298	372
1984	Replacement	5.248	2.514.773	3.143.466	7.506		
	New	2.306	1.700.300	2.125.375	3.829		
	Total	7.554	4.215.073	5.268.841	11.335		

24

Table 3. Subloans signed for Packing houses-Gold stores

	Amount 000 Drs	Cost 000 Drs	Disbursement Amount	Year	Capacity tons/day/product
<u>Improvement of existing packhouses:</u>					
1. Union of Coops of Messara Crete	4.200	4.200	4.200	1981	Cucumbers 18 t.
2. Union of Coops of Selino Crete	13.000	13.000	13.000	1981	Cucumbers 20t, Tomatoes 28 t.
3. Cooperative of Timbaki Crete	11.500	11.500	11.500	1982	Cucumbers 48 t.
4. Cooperative of Filiatra Peloponessus	33.500	33.500	33.500	11.000 1981 22.500 - 1984	Cucumbers 44 t, Tomatoes 8 t.
5. Cooperative of Vori-Faneromeni Crete	6.500	6.500	6.500	1983	Cucumbers 24 t.
Total	68.700	68.700	68.700		
<u>New packhouses:</u>					
1. Cooperative of Finikous Peloponessus	24.500	24.500	24.500	1984	Cucumbers 20 t, Tomatoes 25 t
2. Iakoniki S.A. Skala Peloponessus	33.000	33.000	-		Tomatoes 50 t. (Curzettes 30 t)
Total	57.500	57.500	24.500		
Grand total	126.200	126.200	93.200		

Table 4. Subloans signed during the year for tractor trailers

			Amount of Loan 000 Drs (1)	Cost 000 Drs (2)	Items
1982	G. Nikoloudis	Thessaloniki	4.338	7.230	1 refrigerated tractor trailer
	N. Savopoulos	Chrisoupolis	5.136	8.560	1 " " "
	V. Roumeliotis	Sparti	4.500	7.500	1 " " "
	Total		13.974	23.290	
1983	V. Roumeliotis	Sparti	6.000	10.000	1 refrigerated tractor trailer
	A. Koccalas	Thessaloniki	4.270	7.117	1 " " "
	K. Berikos	Filiatra	5.886	9.810	1 " " "
	D. Koccalas	Thessaloniki	2.470	4.117	1 refrigerated trailer
Total		18.626	31.044		
1984	I. Pistopoulos	Attiki	3.540	5.900	1 tractor
	C.P. Marmanidis	Cria Vrissi	1.995	3.325	1 refrigerated trailer
	G. Boutsikos	Attiki	2.520	4.200	1 " "
	S.M. Savaki	Attiki	7.200	12.000	3 " "
	D. Ioannidis	Giannitsa	1.955	3.258	1 " "
	S.Mavridis-A.Katirtsoglou	Giannitsa	1.400	2.333	1 " "
	Papadas C. Nikolaras	Attiki	1.740	2.900	1 " "
	C.Parcharidis	Thessaloniki	1.854	3.090	1 " "
	I. Amperiadis	Giannitsa	6.621	11.035	1 refrigerated tractor trailer
	N. Savopoulos	Chrisoupolis	3.200	5.333	1 tractor
	C. Marmanidis	Cria Vrissi	3.300	5.500	1 tractor
	P. Verqos	Katerini	2.290	3.816	1 refrigerated trailer
	G. Zarolikos	Attiki	2.790	4.650	1 " "
	D. Chambidis	Giannitsa	4.500	7.500	1 tractor
Total		44.905	74.840		
Grand Total		77.705	129.174		

Table 5 Actual Cost per Year for Research and Extension

Million Drs

Year	Training		Equipment and Materials		Consultant Services		Total	
	Foreign	Total	Foreign	Total	Foreign	Total	Foreign	Total
1978	-	-	-	-	-	-	-	-
1979	0,9	1,0	0,6	0,8	-	-	1,5	1,8
1980	0,6	0,7	0,7	1,2	1,7	2,8	3,0	4,7
1981	4,1	4,5	7,6	10,7	3,4	5,3	15,1	20,5
1982	14,4	15,3	0,5	0,8	1,7	2,6	16,6	18,7
1983	12,2	12,6	4,7	10,7	0,8	1,3	17,7	24,6
1984	16,2	17,3	3,9	5,5	0,7	1,1	20,8	23,9
Total	48,4	51,4	18,0	29,7	8,3	13,1	74,7	94,2

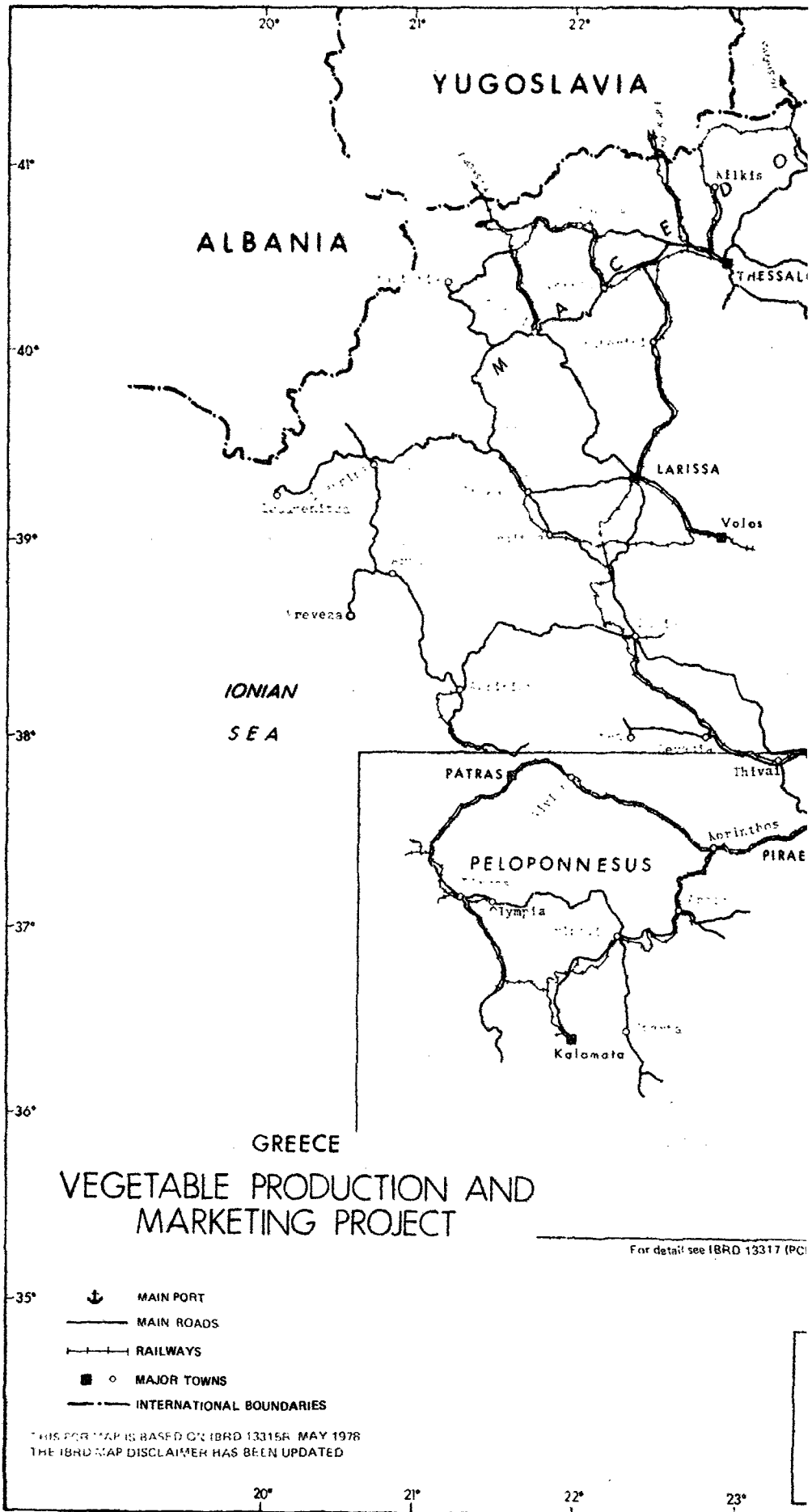
Table 6 Estimated Schedule of Expenditures Million Drs.

	1978		1979		1980		1981		1982		1983		1984		Total	
	Foreign	Total	Foreign	Total	Foreign	Total	Foreign	Total	Foreign	Total	Foreign	Total	Foreign	Total	Foreign	Total
Greenhouses	114,8	273,2	152,6	363,1	175,8	415,6	182,6	430,6	153,5	362,3					779,3	1.844,6
Research and Extension	6,2	8,0	44,4	68,2	14,0	25,4	11,8	22,7	7,7	17,6					84,1	141,9
Marketing organization	2,8	3,7	19,2	45,0	4,7	23,7	2,0	20,0	-	-					28,7	92,4
(Consultant services)	(2,8)	(3,7)	(5,5)	(7,4)	(2,8)	(3,7)	(-)	(-)	(-)	(-)					(11,1)	(14,8)
Packhouses																
Cold storage	26,1	37,4	44,4	65,7	23,1	37,5	5,5	10,5	-	-					99,1	151,1
Tractor trailers	26,2	35,9	36,0	49,3	43,6	59,6	43,3	59,2	32,5	44,4					181,6	248,4
Contingencies	13,3	29,0	38,2	78,4	65,9	133,3	88,3	176,6	90,6	180,8					296,3	598,1
Total	189,4	387,2	334,8	669,7	327,1	695,1	333,5	719,6	284,3	605,1					1469,1	3.076,7

- 28 -

Actual Expenditures Million Drs.

Greenhouses	65,5	135,8	254,8	460,0	316,9	550,2	339,1	604,5	345,1	632,1	622,9	1140,8	960,0	1745,4	2904,1	5268,8
Research and Extension	-	-	1,5	1,8	3,0	4,7	15,1	20,5	16,6	18,7	17,7	24,6	20,8	23,9	74,7	94,2
Marketing Organization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(Consultant services)	-	-	-	-	-	-	-	-	3,9	4,3	-	-	-	-	3,9	4,3
Packhouses																
Cold storage							4,2	18,5	2,5	16,2	1,5	11,5	26,4	47,0	34,6	93,2
Tractor trailers									19,5	23,3	25,6	31,0	59,1	74,8	104,2	159,2
Total	65,5	135,8	256,3	461,8	319,9	554,9	358,4	643,5	387,6	694,6	667,7	1207,9	1066,3	1491,1	3121,7	5991,7

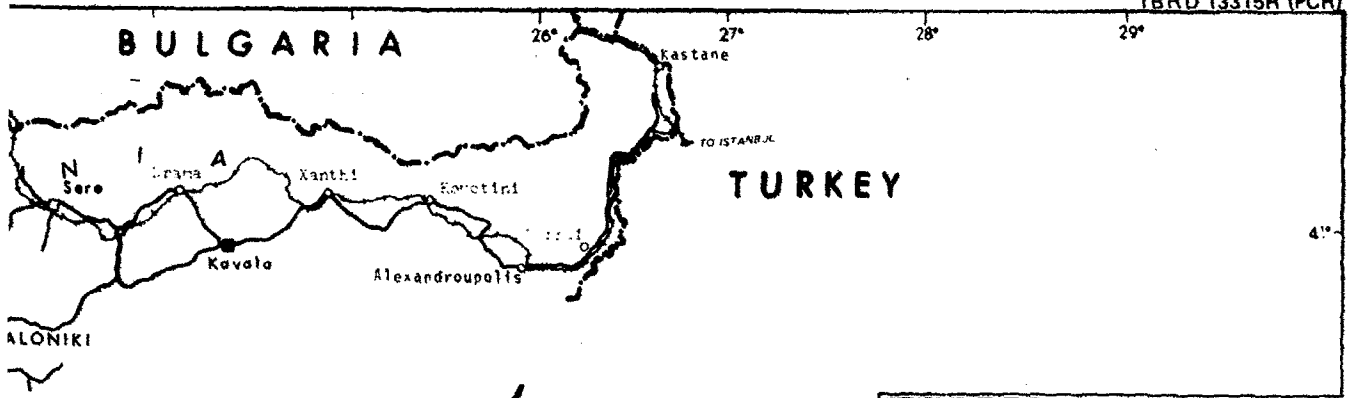


VEGETABLE PRODUCTION AND MARKETING PROJECT

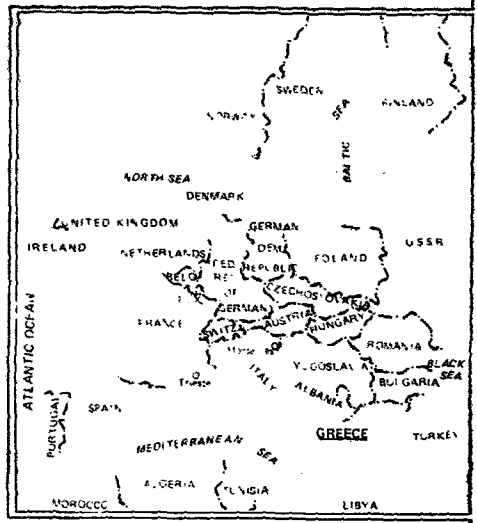
For details see IBRD 13317 (PC)

- -
 -
 -
- MAIN PORT
 MAIN ROADS
 RAILWAYS
 MAJOR TOWNS
 INTERNATIONAL BOUNDARIES

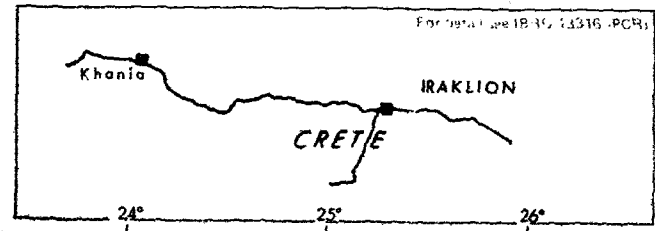
THIS FOR MAP IS BASED ON IBRD 13315R MAY 1978
 THE IBRD MAP DISCLAIMER HAS BEEN UPDATED



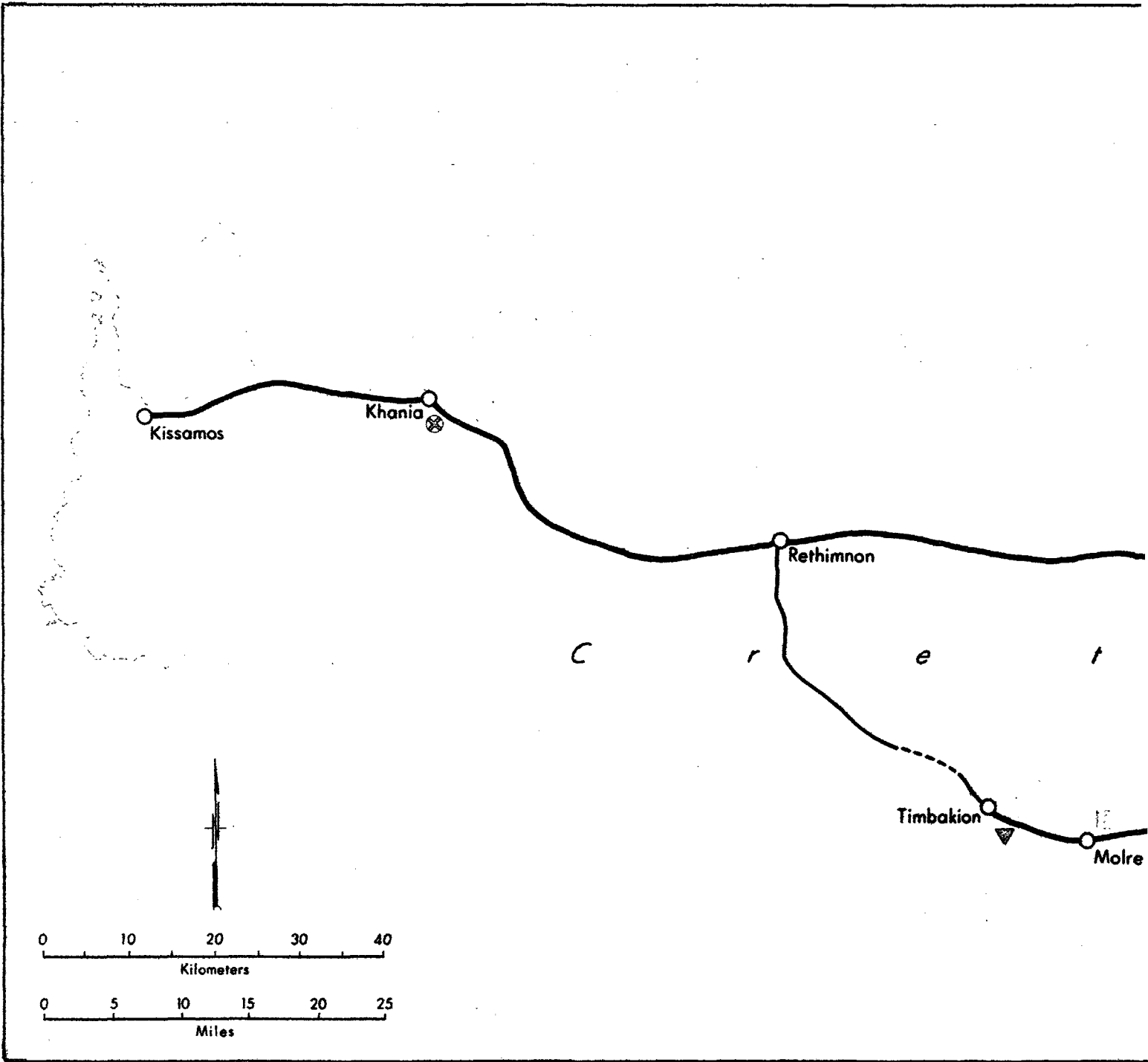
(PCR)



AEGEAN SEA












This map has been prepared by The World Bank's staff exclusively for the convenience of the readers and is exclusively for the internal use of The World Bank and the International Finance Corporation. The denominations used and the boundaries shown on this map do not imply, on the part of The World Bank and its International Finance Corporation, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries.



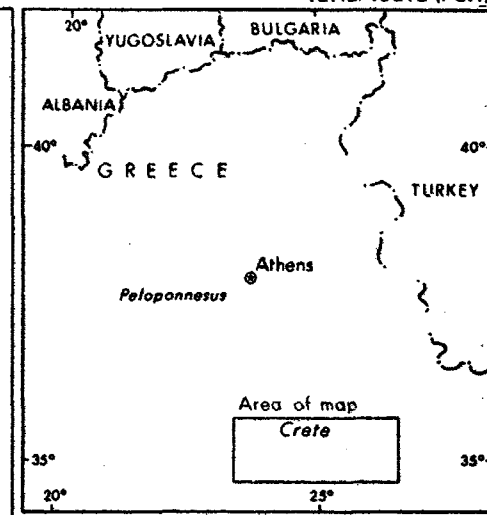
GREECE

Vegetable Production and Marketing Project

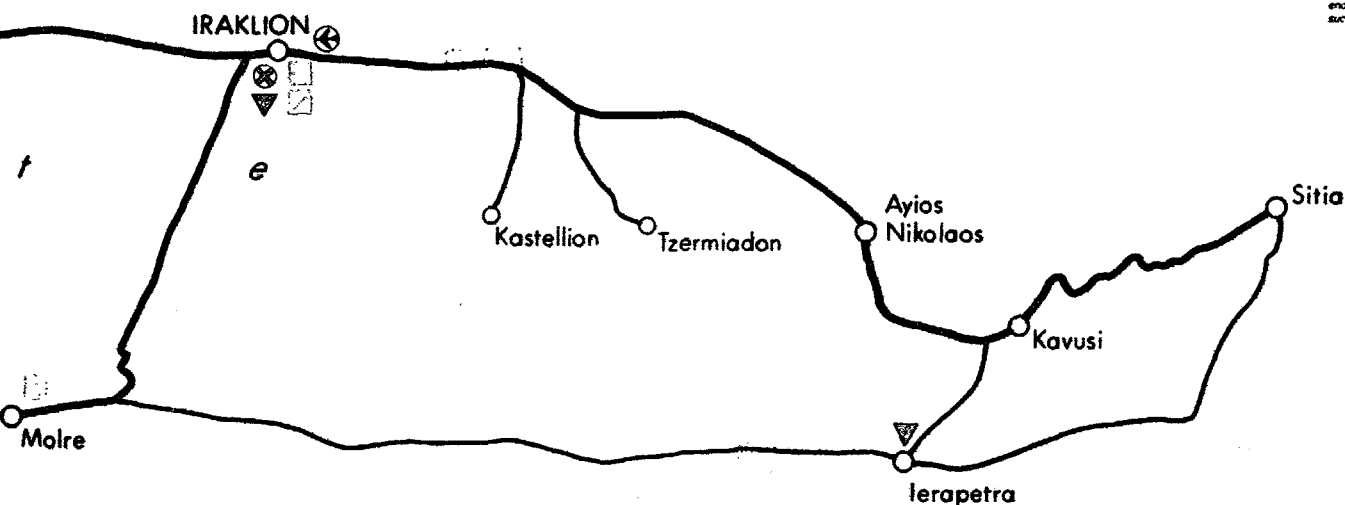
CRETE

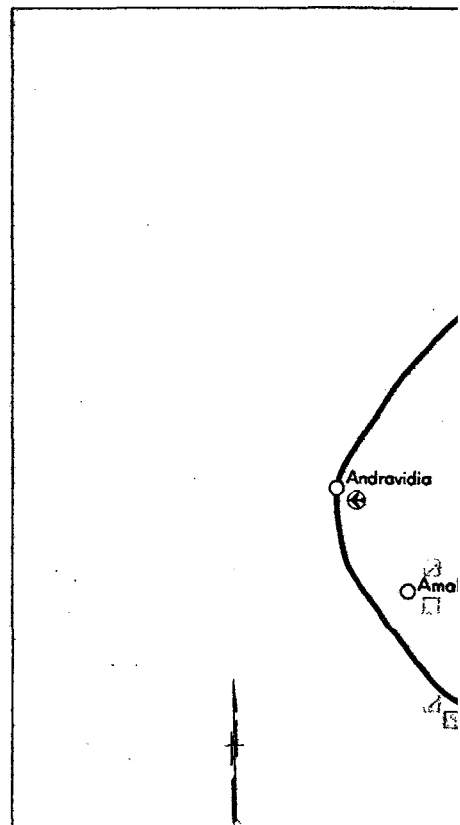
-  New research facilities
-  Laboratories
-  Greenhouse zones
-  Market centers
-  Packing plants and refrigerated units
-  National roads
-  Secondary roads
-  Ports
-  Airport

THIS PCR MAP IS BASED ON IBRD 13316,
JANUARY 1978 PROJECT INFORMATION
AND THE IBRD MAP DISCLAIMER HAVE
BEEN UPDATED.



*This map has been prepared by
The World Bank's staff exclusively
for the convenience of the
readers and is exclusively for the
internal use of The World Bank
and the International Finance
Corporation. The denominations
used and the boundaries shown
on this map do not imply, on the
part of The World Bank and the
International Finance Corporation,
any judgment on the legal status
of any territory or any
endorsement or acceptance of
such boundaries.*

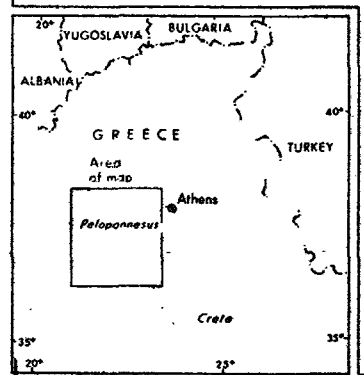
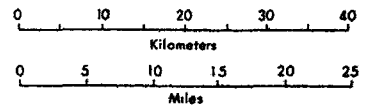




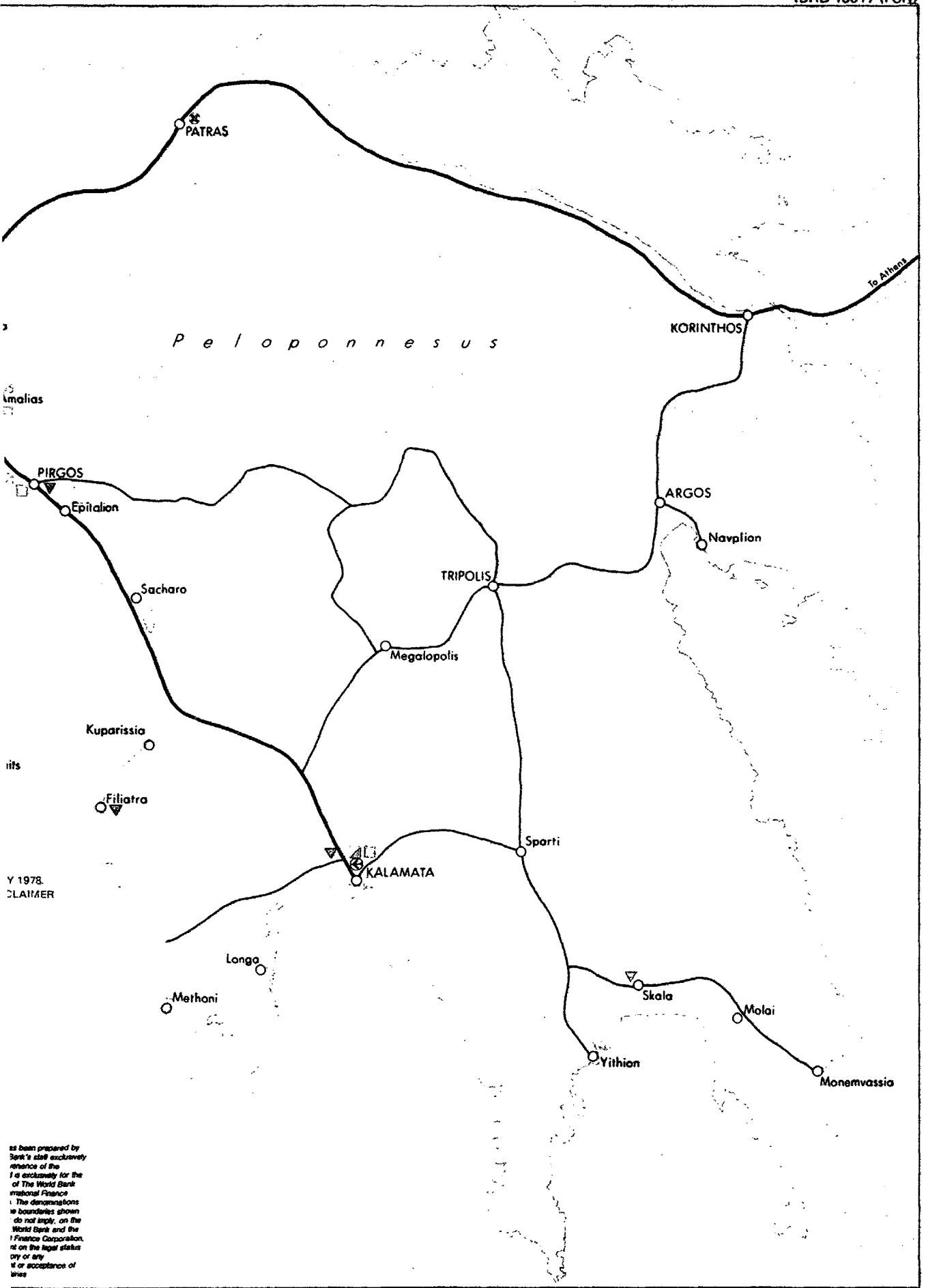
GREECE
**Vegetable Production and
 Marketing Project**
 PELOPONNESUS

- ▼ New research facilities
- ⊗ Laboratory
- ⊠ Greenhouse zones
- ⊡ Market centers
- ⊞ Packing plants and refrigerated units
- National roads
- Secondary roads
- ⊡ Ports
- ⊕ Airports

THIS PCR MAP IS BASED ON IBRD 13317, JANUARY 1981
 PROJECT INFORMATION AND THE IBRD MAP DISCLA
 HAVE BEEN UPDATED



The map has been prepared by The World Bank for the convenience of its readers and is for internal use of the International Development Cooperation. The use and the publication of this map do not constitute any part of The World Bank's International Development Cooperation. The use and the publication of this map do not constitute any part of The World Bank's International Development Cooperation. The use and the publication of this map do not constitute any part of The World Bank's International Development Cooperation.



Y 1978.
CLAIMER

has been prepared by
Bank is still exclusively
responsibility of the
1 is exclusively for the
of The World Bank
International Finance
1. The designations
of boundaries shown
do not imply, on the
World Bank and the
International Finance Corporation,
any or any
acceptance of
lines