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PROJECT PERFORMANCE AUDIT REPORT

YUGOSLAVIA FIRST AGRICULTURAL CREDIT PROJECT
(LOAN 1129-YU)

May 29, 1984

Operations Evaluation Department

ABBREVIATIONS

CPI	-	Consumer Price Index
EMENA	-	Europe, Middle East and North Africa Regional Office
FRR	-	Financial Rate of Return
IBRD	-	International Bank for Reconstruction and Development
ICB	-	International Competitive Bidding
IMF	-	International Monetary Fund
M&E	-	Monitoring and Evaluation
OED	-	Operations Evaluation Department
OPN	-	Operational Policy Note
PB	-	Participating Bank
PCR	-	Project Completion Report
PPAM	-	Project Performance Audit Memorandum
VB	-	Vojvodjanska Banka

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(LOAN 1129-YU)

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PREFACE

This is a performance audit of the First Agricultural Credit Project in Yugoslavia, for which Loan 1129-YU in the amount of US$50.0 million was approved on June 5, 1975. The Loan was closed on December 31, 1980 with a delay of one year. The final disbursement was made on March 23, 1981 and US$742,000 was cancelled. The project was followed by the Second and Third Credit Projects, for which the Bank financed US$75.0 million and US$85.0 million, respectively. These projects were approved, respectively, on July 5, 1977 and February 26, 1980. As of January 31, 1984, the loans for the Second and Third Credit Projects were 98% and 47% disbursed, respectively.

The audit report consists of a memorandum prepared by the Operations Evaluation Department (OED) and a Project Completion Report (PCR). The PCR was prepared by the Europe, Middle East and North Africa Regional Office and is partly based on information obtained during a visit to Yugoslavia in December 1982 and on a project completion report prepared by the Borrower. The audit is based on a review of the Appraisal Report (No. 737-YU), dated May 12, 1975, the President's Report (P-1581a-YU) of May 20, 1975, the Loan and Guarantee Agreements dated June 20, 1975 and the PCR, together with a review of minutes of the Board presentation, correspondence with the Borrower and internal Bank memoranda in project files, and on interviews with Bank staff who have been associated with the project.

On the basis of the above procedure, the audit agrees with the main findings of the PCR. However, the audit elaborates on the issues of interest rates for onlending, individual farmer beneficiaries, procurement, and measurement of project benefits which are important for other similar projects to be supported by Bank financing in Yugoslavia and other countries.

The audit was sent to the Borrower on January 27, 1984 for comments. Comments received from the Secretariat of Finance, Republic of Slovenia and Vojvodjanska Banka are reflected in the report and appear as attachments to the audit memorandum.

PROJECT PERFORMANCE AUDIT BASIC DATA SHEET

YUGOSLAVIA FIRST AGRICULTURAL CREDIT PROJECT (LOAN 1129-YU)

KEY PROJECT DATA

	Appraisal Estimate	Actual or Current Estimates	Actual as % of Estimated
Total Project Costs (US$ million)	125.0	130.4	104
Loan Amount (US$ million)	50.0	50.0	100
Disbursed)	-	49.26	-
Cancelled) as of February 29, 1984	-	0.74	-
Repaid)	-	15.03	-
Date Physical Components to be Completed	06/30/79	06/30/80	-
Months to Completion	48	60	125
Proportion then completed (%)	n.a.	100/a	-
Economic rate of return (%)	27	15	-

Cumulative Estimated and Actual Disbursements (US$ million)

	FY76	FY77	FY78	FY79	FY80	FY81
Estimated	0.950	17.600	39.350	50.000	50.000	50.000
Actual	-	6.400	24.000	37.200	44.000	49.258
Actual/Estimated (%)	-	36	61	74	88	99

Date of final disbursement: 03/23/81

OTHER PROJECT DATA

Item	Original Plan	Revisions	Actual or Current Estimates
Government's Application Date	-	-	07/20/73
Negotiations Date	-	-	03/24 - 04/03/75
Board Approval Date	-	-	06/05/75
Loan Agreement Date	06/11/75	06/20/75	06/20/75
Effectiveness Date	11/17/75	01/31/76-02/27/76	02/12/76
Closing Date	12/31/79	12/31/80	12/31/80

Borrower	Vojvodjanska Banka, Udruzena Banka	
Guarantor	Socialist Federal Republic of Yugoslavia	
Executing Agency	Vojvodjanska Banka and Seven Other Participating Banks in each Republic/Province	
Fiscal Year of Borrower	January 1 - December 31	
Follow-On Projects:	Second Agricultural Credit Project	Third Agricultural Credit Project
Loan Numbers:	1477-YU	1801-YU
Loan Amounts (US$ million):	75.0	86.0
Loan Agreement Dates:	July 29, 1977	February 29, 1980

MISSION DATA

Item		Month/ Year	No. of Persons	Mandays/b in Field	Specializations Represented /c	Performance Rating /d	Trend /e	Types of Problems /f
Preparation Report (from Borrower)		06/74	-	-	-	-	-	-
Appraisal		10/74	6	180				
Supervision	I	06/75	2	6	C,I	2	2	M
Supervision	II	10/75	2	10	E,I	2	2	M
Supervision	III	04/76	2	20	C,I	1	1	M
Supervision	IV	08/76	3	42	C,F	1	2	M
Supervision	V	05/77	2	20	A,C	1	2	M
Supervision	VI	10/77	2	36	A,C	1	2	M
Supervision	VII	05/78	2	24	A,C	1	2	M, O
Supervision	VIII	09/78	2	12	C	1	2	M
Supervision	IX	03/79	1	12	C	1	2	-
Supervision	X	10/79	2	36	F,C	1	1	-
Supervision	XI	04/80	4	60	A,C,C,L	1	1	-
Supervision	XII	12/80	3	54	A,F,L	1	2	-
Subtotal				332				
Completion		12/82	3	30		1	-	-
Total				542				

COUNTRY EXCHANGE RATES

Name of Currency (Abbreviation)	Dinar (Din)
Appraisal Year Average	US$1 = 17.5
Intervening Years Average	US$1 = 23.4
Completion Report Year Average	US$1 = 55.2

/a Project was scaled down.
/b Includes days spent by supervision missions on identification/preparation and supervision of other projects, particularly the follow-on projects (Loans 1477-YU and 1801-YU).
/c A = agriculturalist; C = credit specialist; E = economist; F = financial analyst; I = Agro-industries specialist; and L = livestock specialist.
/d 1 = problem-free; 2 = stationary; 3 = deteriorating.
/e 1 = improving; 2 = stationary; 3 = deteriorating.
/f M = managerial; O = Other.

PROJECT PERFORMANCE AUDIT REPORT

YUGOSLAVIA FIRST AGRICULTURAL CREDIT PROJECT (LOAN 1129-YU)

HIGHLIGHTS

The objectives of the project were to increase farm incomes (especially on individual farms), improve food self-sufficiency and increase agricultural exports through increased agricultural production, improved product quality, stabilized agricultural development, and increased productivity.

The project was complex, involving Kombinat and individual farm beneficiaries in all eight Republics and Provinces. As approved by the Board on June 5, 1975, the project was expected to cost US$125.0 million at completion, of which Loan 1129-YU would finance 40%, the eight participating banks 34%, and Kombinat individual farmers 26%.

Main investments of the project included dairy and vegetable production, farm buildings, irrigation, grain drying and general farm equipment, orchards, small fruits, and land development through clearing, leveling, draining, irrigation, and construction of access roads. The Vojvodjanska Banka (VB - Republic of Vojvodina) was the Borrower and channeled funds to its own clients and to seven banks in the other Republics and Provinces; all of which shared responsibility for executing the project, although VB's Project Operations Department had ultimate responsibility for all subloans.

Project completion was delayed by one year partly because of a three-month delay in the date of effectiveness, and problems of learning and applying the Bank's methodology for appraisal of subloans. There was a modest cost overrun of 4%, but the levels and types of investments were considerably different from those envisaged at appraisal; for example, investments in tractors by individual farmers exceeded appraisal expections by over 600%, and investments in dairy enterprise development in the social sector fell far below those expected.

Because no monitoring and evaluation program was set up for this wide-ranging and complex project, the benefits of the project are not precisely known. The information available indicates that the project went a long way in achieving its social and economic benefits. The reestimated rate of return at completion is 15% compared with the appraisal estimate of 27%, and 13,000 farm families (individual farms) benefited from the subloans compared with about 10,000 expected. Seventy-four subprojects were financed in the social sector.

Other points of interest are:

- the Bank's impact on subproject appraisal procedures by onlending banks (institution-building) has been significant (PCR, para. 7.06);

- the project would have benefited from greater indepth supervision in Republics and Provinces (PCR, para. 8.03);

- investments in large-type livestock in social sector appears to be uneconomic at the present time (PCR, para. 8.04);

- a large portion of farmers of the individual farmer subsector evidently have not benefited from the project due to their reluctance to associate with Kombinats or cooperatives (PPAM, paras. 23-26); and

- monitoring and evaluation programs need to be well-structured and established before project approval if project benefits are to be measured with an acceptable degree of accuracy (PPAM, paras. 28-31).

A lesson to be learned is: general issues such as interest rates and other pricing policies may best be dealt with at the Ministerial level rather than through projects (PPAM, paras. 17-22; PCR, para. 7.02).

PROJECT PERFORMANCE AUDIT MEMORANDUM

YUGOSLAVIA FIRST AGRICULTURAL CREDIT PROJECT (LOAN 1129-YU)

I. SUMMARY

Objectives and Background

1. The project aimed to support Yugoslavia's long-term objectives of food self-sufficiency and increased exports of agricultural products. Supporting objectives were to increase agricultural production, improve product quality, stabilize agricultural development, and improve productivity and incomes in agriculture, particularly on private (individual) farms. It was the second agricultural project supported by Bank financing to promote investment and development on private (mainly small) farms; the first being the Agricultural Industries Project (Loan 894-YU), which was approved in May 1973.

Cost and Financing

2. The project was approved by the Board on June 5, 1975 and was expected to cost US$125.0 million, of which Loan 1129-YU would finance US$50.0 million; the Borrower, Vojvodjanska Banka, together with seven other participating banks, US$42.9 million; and subborrowers/beneficiaries, US$32.1 million.

The Project

3. The project would provide financing for on-farm development and agro-industry investments through a selected bank in each republic or province in the country. Project design was complex. Main project components expected to be financed in the social sector or Kombinats included: (a) purchases of 5,600 head of in-calf heifers and dairy cows for basic herd development and improvement of buildings and other physical facilities for milk production; (b) construction of facilities to fatten, concurrently, 7,500 head of young cattle; (c) development of 4,000 ha of land for commercial vegetable production through purchase of on-farm irrigation equipment, harvesting implements, and plastic greenhouses; (d) construction of on-farm irrigation systems on 7,600 ha and open-and-closed field drainage systems on 8,400 ha; and (e) development of 9,800 ha of land through land clearing and leveling, construction of access roads, installation of functional drainage systems, land consolidation, surveying and pumping, and relocation of facilities. Developed land would be provided with machinery, fertilizers, protective agents and miscellaneous equipment; and (f) construction and provision of equipment for 9,800 tons of cold storage, 320,000 tons per annum of grain drying facilities, and 240 milk collection stations.

4. Main components to be financed in the private sector were: (a) purchase of about 13,000 in-calf heifers and dairy cows; (b) stocking of individual farms with about 55,000 ewes, and construction of winter housing and feeding facilities and pasture improvement for sheep flock development; (c) development of 1,000 ha of land for labor intensive mixed vegetable production through construction of small-scale, on-farm irrigation systems and about 40 ha of plastic greenhouses for early vegetable production; (d) development of 400 ha of orchards, 30 ha of small fruit, and 850 ha of vineyards through provision of planting materials, fertilizers, labor, land preparation and vine supports; (e) development of about 1,200 ha of land through clearing, leveling, draining, irrigating, constructing of access roads and land consolidation together with machine services, surveying, fertilizers and plant protection; and (f) mechanization of about 400 farms through purchase of 400 tractors and complementary implements.

5. The Vojvodjanska Banka (VB) was the borrower of the loan and the principal executing agency for the project. A "Project Operations Department" in VB was to be responsible for all subloans under the project. However, VB together with the seven other participating banks were to be directly responsible for executing the project in their respective Republics or Provinces. All of the Bank loan funds were to be channeled through VB and it was to receive an interest rate spread of one percent to cover expenses of its on-lending operations with other participating banks (PBs). A committee to coordinate agricultural investments in Yugoslavia had been established under the Agricultural Development Plan at the time of appraisal. This committee was expected to coordinate investments approved under the project and have responsibility for policy questions and reallocation of proceeds of the loan between Republics, Provinces, and sectors.

6. Seminars on appraisal criteria and techniques used in Bank agricultural credit projects were to be held for VB and PB staff to prepare them for administering subloan requests under the project. Sub-borrowers in the social sector would provide a minimum of 30% of investment costs and private sector sub-borrowers, 20% of such costs, which could in part be provided by family labor. Subloan repayment terms ranged from two to five years' grace period and maximum repayment terms of seven to fourteen years, depending on the nature of the investment. The interest rate of the subloans financed out of the proceeds of the loan was set at 11%. Because of the practice in Yugoslavia of subsidizing interest costs to the agricultural sector, a study was to be carried out by VB to analyze the present interest rate structure for the agricultural sector in Yugoslavia and to determine whether uniform interest rates throughout the country for all types of investments would be effective and feasible.

Implementation

7. Loan effectiveness was expected to take place by November 17, 1975; it was delayed to February 12, 1976 due to problems encountered in signing subsidiary loan agreements between VB and the seven PBs, and in providing other loan documentation to the Bank. The project was expected to be completed by June 30, 1979. It was delayed by one year and essentially

completed by June 30, 1980. In US dollar terms there was a slight cost overrun of 4%, but in Dinars the cost overrun amounted to 32% due to high internal rates of inflation and a slower rate of Dinar devaluation. The project was considerably scaled down, primarily due to rapidly rising costs in a period of worldwide inflation.

8. Project start-up was slow, primarily due to difficulties encountered by the PBs in learning and applying Bank methodology to subproject appraisals. The investors, too, were unprepared to follow procedures required by the methodology. Consequently, subprojects were not prepared and appraised by the PBs in sufficient time to enable project implementation to begin immediately after loan effectiveness. Further, during project implementation, Yugoslav banks were reorganized according to new credit and banking laws which became effective in 1978. This restructuring delayed project implementation by some of the participating banks, especially in Croatia, where the participating bank was disbanded.

9. As might be expected under a credit project, there was a considerable difference between actual investment demand and that envisaged at appraisal. Some investments exceeded expectations, others fell far short, and investments were made in enterprises not envisaged at appraisal. For example, considerable investments were made in housing for cattle in the individual and social sectors but were not envisaged at appraisal. Individual farmers also invested in imported dairy cattle, which also was not envisaged; however, total investments in dairy cattle by this group exceeded expectations. Investments in tractors in the individual sector exceeded estimates by over 600%. In the social sector, investments in dairy cattle fell far below expectations, but investments in land development and drainage exceeded expectations by a considerable margin. A cold storage plant was constructed with a nominal capacity of 10,000 tons compared with 6,800 tons planned at appraisal. The design of this plant could have been improved with a more efficient floor design and by providing better fitting doors that would have prevented frosting. Six grain drying plants were constructed in the social sector which have about one-half the capacity expected at appraisal. Further, the facilities employed the indirect method of drying in place of the more cost-efficient direct method which was envisaged at appraisal (for further details on investment achievements, see PCR, para. 4.01).

10. The interest rate study, as required under the project, was carried out by a consultant for VB. It was received by the Bank about eight months later than agreed. The Second Credit Project (Loan 1477-YU) was delayed in presentation to the Board, awaiting the final report of this study. However, the final report did not provide the Bank with information it considered useful in structuring interest rates for agricultural credit projects in Yugoslavia. As a result, a comprehensive study of interest rates was included in the Second Credit Project.

11. Because of the fact that the project provided credit to individual farmers and Kombinats for many alternative investments throughout all Republics and Provinces in Yugoslavia, measurement of the economic and social impacts of the project's investments has been understandably difficult. The project did not specify a monitoring and evaluation program for economic benefits; it did specify, however, that project accounts and investments

would be monitored. Nevertheless, Vojvodjanska Banka was required to provide for monitoring of both the First and Second Credit Projects under the Loan Agreement of the Second Project, which was approved in July 1977. VB invited consultants to submit proposals for designing and implementing such a system in September 1977, and a consultant was hired in early 1978.

Procurement, Financing and Covenants

12. There were no major procurement problems which affected project implementation. All procurement was carried out in accordance with the Loan Agreement. During implementation, the Bank agreed to amend the Loan Agreement to reallocate the loan proceeds from the social sector to the private sector. However, at completion, the proportion of Bank funds utilized by the private sector was not much different than that envisaged in the original Agreement, 22.6% vs. 21.5%, and the proportions of total project cost incurred in the social and private sectors were the same as expected. Because of subproject implementation delays, full disbursement of the loan was delayed by 21 months. All loan covenants were complied with by the Borrower.

Project Impact

13. Institutional. The Borrower carried out a comprehensive reorganization to improve its efficiency and a training program to improve its and other PBs' knowledge of appraisal and lending procedures used by the Bank in agricultural credit projects. Seven seminars were held by VB for the staff of all PBs: five on appraisal techniques; one on procurement procedures of the Bank, particularly for ICB procurement; and one on the Bank's withdrawal and disbursement procedures. Both the Borrower and other PBs, however, did not provide adequate supervision to on-going projects after subloan approval. This deficiency is likely due to the fact that the banks are not strictly economic development-oriented.

14. Production. Because of the wide range of type and location of subprojects financed under the project, and the late date at which an M&E program was established, only partial and fragmentary information has been obtained on the benefits of the project (see Annex 9 of the PCR). It has been estimated that incremental annual production of maize in the individual sector has amounted to 45,200 tons on farms that invested in mechanization and/or land improvement compared with 53,300 tons estimated for the project as a whole. The estimated increase in annual milk production as the result of project investments in both sectors is estimated at 92.8 million liters compared with 93.0 million liters estimated at appraisal (PCR, para. 6.02). Incomplete or no information is available for incremental production for the following commodities or commodity groups, which, at appraisal, were expected to be increased through project investments: sugar beets, alfalfa, silage, tomatoes, peas and beans, other fresh vegetables, fruits and beef.

15. Beneficiaries. At completion, an estimated 13,476 individual farms benefit directly from subloans (PCR, para. 6.04)—at appraisal, 10,200 individual farms were expected to receive loans—however, there is some

uncertainity about the current estimate. Further, at appraisal, it was expected that 380 social sector enterprises would benefit directly from the project and that 2,650 jobs would be created as a result; at completion, 74 subprojects in this sector had been financed. Of these 74 projects, 27 were included in the sample survey undertaken by the consultant (PPAM, para. 28). Under these 27 subprojects, 276 jobs were created. Therefore, if the sample is representative, job creation in the social sector has been less than envisaged at appraisal.

16. Rate of Return. According to the completion report, the reestimated economic rate of return (ERR) to the project is 15% compared with 27% estimated at appraisal. Because of certain project problems and data deficiencies noted in paragraphs 11 and 14 above and in the PCR (para. 3.10, 4.10, 4.25, 4.27, 5.08 and Annex 9), the adequacy and validity of this ERR is discussed in a following section.1/

II. ISSUES

A. Interest Rates

17. The rates of interest to be charged sub-borrowers under the project was the subject of long and sometimes heated debates between various departments of the Bank and between the Bank and the Government. The Bank's position, though by no means unanimous, was that uniform interest rates should be charged all sub-borrowers in all Republics and Provinces, for the same class of sub-borrower. The PCR considers this issue in paragraphs 2.11, 3.09, and 7.02. However, in the audit's view, there is more to this issue than endorsement of the Bank's position and the view that progress is being made in moving toward the Bank's position. A considerable amount of time was spent by Bank personnel and authorities in Yugoslavia in dealing with or attempting to deal with this issue. As noted in the PCR (para. 2.11), at the time of negotiations the Bank wanted (i) a 3.0 percentage point spread between its lending rate and the rate charged sub-borrowers--the Borrower proposed a 2.0 point spread--and (ii) the Bank wanted uniform on-lending rates for all Republics and Provinces but different rates for individual sector and social sector sub-borrowers; these rates, when weighted by relative loan amounts, would give a blend rate that would be 3.0 percentage points above the Bank's lending rate--the Borrower wanted the on-lending rates to be varied according to the Republic and Province and by the type of investment that was being supported, which was in accordance with the law and current practice in Yugoslavia. Finally, after much negotiation, both before and during formal negotiations, a compromise was effected under which: (i) the point spread would be 2.5%; (ii) the interest rate charged sub-borrowers on that portion of the subloan provided by Bank funds would be 11% for both individual farmers and social sector beneficiaries; and (iii) the interest rate charged

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1/ See also comments of Republican (Slovenia) Secretariat of Finance (PPAM, Attachment 1).

on funds provided by the participating banks would be not less than the prevailing rate that was being charged for a designated type of investment in the Republic or Province. In order to reach this compromise, the Borrower was requested and agreed to undertake a special study that would analyze the present interest rate structure for the agriculture sector and determine whether uniform interest rates would be effective and feasible.

18. The Bank received a first draft of the interest rate study in November 1976 which some Bank staff found useful but others found lacking because the report took the position that uniform interest rates, i.e., unsubsidized interest rates were not appropriate due to the socialist nature of the economic system in Yugoslavia. A final draft of the report was received in February 1976. This too was judged to be unacceptable by some of the Bank staff because it attempted to justify the prevailing interest rate system. It was hoped that this study would provide a case for imposing uniform interest rates in the Loan Agreement for the Second Agricultural Credit Project. Some progress in this direction was made in the Loan Agreement for this project in that it was agreed that the interest rate to be charged on subloans for the portion of funds from domestic sources, primarily the participating banks, would be not less than 5% and not less than 6% for the individual and social sectors, respectively. The Guarantee Agreement also stipulated that another interest rate study would be carried out.

19. This new study was initiated by the Yugoslav Bank Association and a partial report was received by the Bank in April 1979. Although incomplete, this report came to the same general conclusion as the first report: that the interest rate issue was complex in Yugoslavia's unique socialistic economic system and that uniform rates were inappropriate. The report was reviewed in the Bank and a letter was sent to the Borrower which, in essence, stated that the Bank found the report interesting and recognized that it was incomplete and would await the final report. Subsequently, during a meeting of high-level Bank and Yugoslav officials, the Bank emphasized the importance of the study to the Third Credit Project. A following supervision mission was promised that the final report would be sent by the end of December 1979. The final report was not received until February 1980. In the meantime, the Third Agricultural Credit Project was approved in February 1980. The Loan Agreement for this project provides for the same interest rate terms as those contained in the Loan Agreement for the Second Credit Project.

20. The final report of the interest rate study received widespread review in the Bank. Some reviewers agreed with its conclusions, others did not. The consensus conclusions were that while the study did not fully meet the terms of reference originally specified in 1975, it met the Borrower's commitment under the Second Agricultural Credit Project to complete the study and that further studies would serve no purpose. At a general meeting to discuss a position paper, it was concluded that the interest rate policy to be pursued in Yugoslavia would be one where onlending rates would be set on the basis of a computed average cost of alternative sources of foreign exchange and that this recommendation would exclude specially earmarked domestic funds from floor interest rates. This policy has been reflected in Loan 1951-YU of August 1981 under which interest rates on the proceeds of the

loan would be 11% and interest rates on funds not provided by the SFUR[2/] would be not less than 10%, implying that funds supplied by the SFUR could be less than 10%, which comes under the category of earmarked funds noted above. In loan agreements for other more recent projects, the interest rates to be charged on intermediated funds has been further increased, to 18%, earmarked funds still being exempt. More recently, under the Structural Adjustment Loan (Loan 2326-YU), Government expressed its intent to adjust annually the floor lending rates for credits from domestic commercial bank resources. As of May 1, 1984, it increased the floor interest rate for primary production in agriculture to 25.4%[3/] in accordance with the formula set forth in the Letter of Development Policy furnished to the Bank.[4/]

21. In light of these developments, the question is: why was the resolution of the disagreement between the Bank and Yugoslavia on the interest rate issue attempted through funding of agricultural credit projects? In retrospect, it seems that the interest rate study which was undertaken under the First Credit Project was a pragmatic way of resolving an impasse both within the Bank and between the Bank and the Borrower on the rate of interest to be charged on funds provided by sources other than loan proceeds. The Bank's apparent objective was to have "unsubsidized" interest rates charged on all project funds which it believed would improve resource allocation in the country. There was a general feeling in the Bank that investments made in Yugoslavia were too capital-intensive as a result of subsidized interest rates. Since the second interest rate study was not completed until the Third Credit project was approved, the studies provided a way for continuing lending while delaying a confrontational impasse on the issue. In the meantime, the Bank was able to get a floor interest rate imposed on part of the funds not provided by the loan proceeds in the Second and Third Credit Projects. Since the interest rate issue was related to all projects supported by Bank financing, it might have been better to have addressed the issue at the ministerial level rather than through an agricultural project study. There was some progress in that direction under the evolution of the interest rate study because the first study, which the Bank did not accept, considering it unresponsive to the objectives of the study, was done by a consultant to the Vojvodjanka Banka, and the second study was done under the auspices of a Coordinating Committee of the Yugoslav Bank Association.

22. The Bank has made progress in raising nominal interest rates only recently (PPAM, para. 20). During the period 1975 through 1981, the inflation rate in Yugoslavia averaged over 24% (CPI). The index of producers'

2/ Serbian Fund for Underdeveloped Regions.

3/ For non-priority investments in agriculture the interest rate has been set at a minimum of 30.3%.

4/ Under its agreement with the IMF, Government has agreed to increase interest rates on term deposits to positive real levels by April 1, 1985.

prices rose, on the average, over 23%. Even those subborrowers who were required to assume the exchange rate risk likely did not pay positive rates of interest because the decline in the value of the Dinar vis-a-vis the dollar averaged 14%. Thus, even though some increase in the nominal interest rates was effected, rates still remained subsidized. In terms of resource allocation, it may have been more fruitful for the Bank to have sought agreement on subloan indexation rather than on uniform and higher nominal rates.

B. Individual Farmer Beneficiaries

23. It has been noted in the PPAM (para. 13) and the PCR (para. 6.04) that 13,476 farm families (individual sector) benefited from the subloans. There are characteristics of these beneficiaries worth noting. They are generally from the better-off or higher-income group of individual farmers and from the group of individual farmers who have contracts with either agro-kombinats or cooperatives. Other independent farmers, those who do not have contracts with agro-kombinats or cooperatives, have no formal credit available to them, either through Bank loans or other sources.

24. Government has come to realize that in order to fully develop the agricultural sector, more investments have to be made in the individual sector. The Bank has supported this effort through the Agricultural Industries Project (Loan 894-YU), the three credit projects, and a number of other agricultural projects which have focused on development of the individual farm sector. In total, eight projects which have been supported by Bank financing have to some extent promoted individual farm development. The Government's policy has been to integrate all farmers into the socialized production system. Previous Bank projects have supported such an objective. However, presently still 46% of total arable land is controlled by independent farmers not associated with either the social or cooperative sectors. Progress in integration has varied regionally. This issue is currently being reviewed and addressed by the Yugoslav authorities.5/

25. It is likely that Bank projects would have had a greater impact on agricultural development in Yugoslavia if the Bank had sought to obtain definitive information on the projects' beneficiaries in the individual sector sooner.

26. Another question concerning benefits in the individual sector relates to the types of investments that were made. At appraisal, about 400 tractors were expected to be purchased by individual sector farms; at completion, just over 3,000 had been purchased. The PCR (paras. 4.16-4.18 and Annex 10) makes a rather strong case for the increased mechanization (purchase of tractors) but concludes that it is difficult to evaluate the benefits which have resulted from mechanization due to the lack of information on farm costs and production before tractors were purchased. In the audit's view, many of the stated benefits of tractorization are highly conditional, depending on the farm size, farm topography and productivity,

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5/ See also comments by Vojvodjanska Banka (PPAM, Attachment 2).

and the family labor supply. The maximum acreage for individual farms in Yugoslavia is 10 ha, not large enough to efficiently utilize an average-sized tractor. Further, in most cases, tractors are labor displacing. The appraisal report for the project notes that there was under-employed labor on the individual farms. For that reason, labor on these farms was shadow-priced at zero for calculating the economic benefits of the project. In the PCR (para. 6.06), it is assumed that the shadow wage rate for individual farms is between 40 and 70% of the social sector net social income indicating that some underemployment of labor is believed to exist. However, this may be inconsistent with the view that tractors are economically beneficial. In cases where tractors are required to ease planting or other production constraints, one tractor would need to be used on a number of individual farms in order to be economical because of their small size. Thus, more definitive information is necessary to determine the economic benefits of tractorization on individual farms. This type of investment needs to be closely monitored in the Second and Third Credit Projects to verify that funds are being used to achieve the greatest economic benefit.

C. Procurement

27. The PCR (para. 3.11) notes that there were no major procurement difficulties or delays which affected project implementation but describes certain problematic situations. In its discussion, the PCR attributes these problems mainly to the ineffective management by the sub-borrowers. This may be true for the specific instances mentioned; however, the draft PCR of the Borrower states that there were various problems in the course of project implementation in procurement procedures, particularly ICB. These problems are attributed to lack of experience in carrying out procurement procedures as required by IBRD. As a result, there were certain irregularities in procedure and misunderstandings between bidders and investors--several examples are cited. Procurement problems occur in many projects because of lack of experience in carrying out IBRD procurement procedures. The PPAR for the Yugoslavia Agricultural Industries Project[6/] highlighted such procurement problems. To ameliorate procurement problems, the Bank has recently issued OPN 4.02, "Procurement Checklist for Appraisals", and is also in the process of standardizing tender documents. Another action the Bank could take to facilitate procurement, as pointed out before,[7/] is to send, immediately after loan/credit approval, a supervision mission, which would include a procurement specialist, to countries where procurement problems are expected due to special conditions or inexperience with Bank procurement procedures. The specialist would instruct project authorities on procurement procedures and assist in preparing tender documents. He would also approve tender documents on-site, thus eliminating delays that result from sending such documents to the Bank for review.

6/ OED Report No. 4490, dated May 13, 1983.

7/ Ibid, page 6.

D. Project Benefits

28. As noted in paragraph 16, in the audit's opinion there are some deficiencies in the measurement of the project benefits and consequently in the reestimated rate of return. The benefits of the project are measured on the basis of a partial set of investments. In the private sector, the benefits of investment in sheep, swine, vegetable production, orchards and land development have not been measured. In the social sector, no estimates are available for the benefits of investments in vegetable production, irrigation, land development and milk collection stations. These investments account for an estimated 20% of the total project cost at completion. However, unless the rates of return to these components are very low, their omission may not seriously affect the overall estimated benefits of the project. But more importantly, the data which have been used to estimate rates of return for the other project components are rather tenuous, mainly for two reasons; first, because benefits of credit project are difficult to measure, and second, because an adequate monitoring and evaluation program was not implemented. These two factors are, of course, related. A recent OED summary of project performance audit results[8/] cited some of the problems relating to measuring the benefits of credit projects which include: accounting for project overhead cost, measurement of "without project" development including additionality, substitution, and diversion. Other problems are the numbers, dispersion, and heterogeneity of the beneficiaries. These problems related especially to the individual farm beneficiaries in the First Credit Project. They numbered over 13,000 and were distributed throughout all Republics and Provinces in Yugoslavia. Data were obtained for just 301 of the 13,500 private farm beneficiaries, or a sample of about 2%. In light of the dispersion and heterogeneity of the beneficiary farms, such a sample size may not provide sufficiently precise estimates. Further, observations were made of most of the farms for one to three years. The sample was drawn from just 8,500 farms for which the consultant had received subloan information out of the total of 13,500. On the other hand, of the 74 subprojects financed in the social sector, 27 were included in the sample for measuring, inter alia, project benefits. The latter size should provide relatively precise information if the sample has been appropriately selected.

29. As a result of completion of the First Agricultural Credit Project and the preparation of its completion report, the Bank has become aware of the limitations of the monitoring and evaluation that has been carried out for the project. It likely should have been aware of this limitation sooner. The proposed methodology for M&E was reviewed by Bank personnel in 1978. It is noted again, however, that a program for M&E of the First Credit was only arranged with the approval of the Second Credit Project.

30. Because of the Bank's concern about M&E of the credit projects in Yugoslavia, an M&E specialist recently visited the country to review the situation. He concluded that a reasonable sample size might total 1,000 but

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8/ Ninth Annual Review of Project Performance Audit Results, OED Report No. 4720 dated September 16, 1983, Volume 2, Chapter V, Supplement 2.

that such a size could not be reasonably requested, and that a compromise sample of 300, selected to give better representation of the farms than is being done at present, could be used. The specialist also concluded that it was probably too late to introduce revised sampling procedures in the Second Credit Project. Even if new sampling procedures are introduced for the Third Credit Project, information may be incomplete due to inability to obtain information on early project years which are required to measure with and without project trends.

31. In the audit's opinion, the Bank needs to give more effort and study to improving monitoring and evaluation programs for credit projects. Otherwise, the benefits of credit projects will continue to be the subject of controversy and their design will be less than optimal.

ATTACHMENT 1

PROJECT PERFORMANCE AUDIT MEMORANDUM

YUGOSLAVIA FIRST AGRICULTURAL CREDIT PROJECT
(LOAN 1129-YU)

BORROWER COMMENTS

MR. SHIV S. KAPUR
DIRECTOR
OPERATIONS EVALUATION DEPT.
THE WORLD BANK
WASHINGTON D.C. 20433 U.S.A.

Ljubljana,
April 6, 1984

DEAR MR. KAPUR:

RE:PROJECT PERFORMANCE AUDIT REPORT: YUGOSLAVIA FIRST AGRICULTURAL CREDIT PROJECT

WE HAVE, IN COOPERATION WITH LJUBLJANSKA BANKA - ASSOCIATED BANK, STUDIED YOUR DRAFT AUDIT REPORT UPON YUGOSLAVIA FIRST AGRICULTURAL CREDIT PROJECT.
ALMOST ALL OF YOUR STAFF'S OBSERVATIONS AND CONCLUSIONS ARE IDENTICAL OR CLOSELY SIMILAR TO OUR KNOWLEDGE AND VIEWS UPONEXECUTION OF THIS PARTICULAR PROJECT AND YUGOSLAV AGRICULTURAL POLICIES IN GENERAL.
HOWEVER, WE FEEL FREE TO COMMENT UPON SOME PARTICULAR POINTS AND ISSUES OF THE DRAFT:

PAGE 4, ART.8: NOT ONLY PBS, BUT THE INVESTORS ALIKE HAVE BEEN UNPREPARED FOR THIS TYPE OF WORK.

REORGANIZATION OF THE BANKING SYSTEM HAS, IN THIS CONTEXT, HAD AN IMPACT ONLY UPON PARTICULAR BANKS AND NOT UPON ALL OF THEM.
PAGE 8, ART.16: ESTIMATES FOR IRR WEREPROBLABLY DIFFERENT FROM REPUBLIC TO REPUBLIC, SOME OF THEM, LIKE SLOVENE ONES, CLOSER TO THE FINAL RESULT., WE THINK THAT IN FUTURE MORE STRESS SHOULD BE PUT ON THIS SEGMENT OF SUBPROJECTS EVALUATION.

PAGE 10: HAVING IN VIEW RECENT CHANGES IN INTEREST RATES, WHICH ARE TO CONTINUE, WE SUGGEST THAT A REMARK SHOULD BE PROBABLY IN PLACE TO EXPLAIN THE SITUATION FOR FUTURE LOANS.

LESSONS AND ISSUES, ART. 8.04: WE ARE NOT CERTAIN THAT THE PROPOSITION THAT ALL THE SUBBORROWERS SHOULD BE FIXEDLY MARKED BEFORE NEGOTIATIONS IS PRACTICAL BECAUSE USUALLY THE BEST PROJECTS FIND OTHER WAYS OF FINANCING AND DO NOT WAIT THE OPERABILITY OF A WB LOAN.
WE DARE TO PROPOSE, FOR FUTURE ACTIONS, THAT A DATE FOR FINAL EVALUATION AFTER COMPLETION OF NEGOTIATIONS SHOULD BE SET AND THAT AFTER SUCH A DATE REALOCATION FOR WB FUNDS BETWEEN BANKS WOULD BE OBLIGATORY. THIS WOULD REQUIRE A SOMEWHAT HIGHER ''BASIC STOCK'' OF SUBPROJECTS IN EACH PARTICIPATING BANK.

SINCERELY

DR. JOZE KUNIC
DEPUTY SECRETARY, RSF

Republican Secretariat of Finance
Republic of Slovenia

BORROWER COMMENTS

vojvođanska banka
-udružena banka

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Poštanski fah 272
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Telefon (centrala): 57-222
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14172

INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT
Attn. Mr. Shiv S. KAPUR, Director
Operations Evaluation Department
1818 H Street, N.W.
Washington D.C. 20433
U. S. A.

Vaš znak:

Naš znak: 04-8510

Novi Sad, April 2o, 1984

Dear Mr. Kapur,

Re: Project Performance Audit Report (PPAR) and Project Completion Report (PCR) of the First Agricultural Credit Project (Loan 1129 YU)

In PCR for the Loan 1129 YU prepared by IBRD on June 3o, 1983 and PPAR of January 27, 1984 in most conclusions and numerous indicators physical and financial achievements in development of agriculture in Yugoslavia are shown quite realistically. The significant problems and difficulties in loan implementation can also be estimated in the same way.

In addition to undoubtedly useful estimations, conclusions and recommendations given in quite a voluminous report, which we mostly accept, the representatives of Participating Banks (PBs) and Vojvodjanska banka (VB) at the meeting of Interbank Coordination Committee, held on April 1o,1984, noticed certain attitudes, conclusions and proposals of IBRD upon which they would like to give their comments.

Comment

It is often more useful to review project experience in a wider context.

1. In all concluding discussions and recommendations writers of the PCR have not confined themselves to the first Loan (1129 YU) and period of its implementation from 1975 to 198o, but more widely, have encompassed estimates on overall Yugoslav agrarian policy till now, current problems and difficulties and future IBRD policy towards Yugoslavia. Thus presented problems, in connection with one loan, are not characteristic for the entire period of

collaboration or for reaching such important conclusions.

PPAR text adjusted

2. The IBRD estimate expressed in para 24 of the PPAR that "partly through the Bank's efforts the Government has come to realize that in order to fully develop the agricultural sector, more investments have to be made in the individual sector" and in attitudes expressed in sections 7.o1. and 7.o2. of the PCR an overestimated importance has been given to IBRD efforts in determining development policy of agriculture in Yugoslavia and individual sector in particular.

footnoted in PCR

Comment

We recognize the validity of these remarks. In fact, reference has been to the constructive dialogue between the Borrower and the Bank which was, as the "partly" indicated, one among many factors to shape agricultural policy.

We, however, would like to emphasize that development of the agricultural individual sector after the Second World War has been a matter of permanent concern and aid of our overall social community through various aspects, among others through important investments by various forms of developmental loans, production supply and enormous efforts towards overall transformation of the village.

Slowdowns in production integration of individual producers and social sector, which are demonstrated in relatively underdeveloped forms of production collaboration, particularly in mountinuous and less developed regions of the country, will gradually be overcome by efforts of the society.

PPAM, para. 24

Also related thereto is the IBRD statement that "the Governments's policy has been to integrate all farmers into the socialized production system". Nobody in our country has ever written or stated that the process of production integration in the village could be completed in a few years or that it was an easy and simple way. The production integration of individual producers with the social sector through various forms of cooperative ties is still a primary objective of our agrarian policy in the village and also towards individual sector. Therefore we think that the IBRD has not made a mistake in accepting and supporting such development policy of ours.

Comment

There is no contradiction between the PPAM and this statement. Cross-reference footnoted.

3. The statement expressed in section 5.o2. of the PCR that the PBs "were reluctant to deal with the Bank through VB because five of the eight PBs

disagreement footnoted

have been direct borrowers from the Bank does not reflect actual relations and feelings among PBs in Yugoslavia. None of the PBs has expressed such opinion, in particularly it refers to implementation of the First Loan.

This clarification does not contradict statement in PCR.

4. The estimate stated in section 5.o4. that Yugoslav commercial banks have limited authority which does not allow them to guide the investment programs is general. Banks have both right and obligation to guide investment programs according to valid legal regulations and their self-management acts.

footnoted in PCR

But regional staff add that their reference to Agrobanka should not be interpreted to imply that specialized agricultural banks should be established everywhere.

5. With more adequate supervision over implementation of the Project on the whole, by VB and PBs, better results would undoubtedly be achieved. However, we are not convinced that foundation of specialized banks for each economic sector in the country (in each republic and province) is the best way towards more successful implementation of the investment programs.

PCR, paras. 5.05 and 5.06

footnoted in PCR

disagreement footnoted

6. In section 8.o5. of the PCR proposals are given for future investment types in the social sector of agriculture. It is an unacceptable attitude by which it is proposed that in future only procurement of quality breeding stock in the poultry and pig industries be financed. Such limitation is not acceptable as well as stated reasons.

footnoted in PCR

7. Concerning monitoring and evaluation system in section 3.lo. of the PCR it is stated that the Institute for Agricultural Economics, as employed consultant, has not analysed the without-project situation and also that it used incorrect deflators. It is true that monitoring has started subsequently for the Loan 1129 YU and that monitoring and evaluation methodology was approved by the IBRD as well as used deflators in setting current prices into constant ones.

PPAM text adjusted

8. In the PPAR para. 15 a wrong conclusion is drawn that only 276 new jobs have been created by the project implementation in the social sector. In the Completion Report prepared by the Institute for Agricultural Economics it is stated that 276 new jobs were created in 27 subprojects which were included in the poll. For the total number of 74 implemented subprojects there is no information on new jobs created.

We hope that aforesaid conclusions from the meeting of the Interbank Coordination Committee will contribute to better understanding of conditions and problems which affected the implementation of the First Yugoslav Agricultural Credit Project (Loan 1129 YU) and therefore would ask you to consider them in preparation of the final text for the PCR.

Yours sincerely,

Dr. Andraš Mora
President Management Board
Vojvodjanska banka - Udružena banka

VOJVODJANSKA BANKA NOV SAD

YUGOSLAVIA

FIRST AGRICULTURAL CREDIT PROJECT

LOAN 1129-YU

Project Completion Report

June 30, 1983

Europe, Middle East and North Africa Region
Projects Department

YUGOSLAVIA

FIRST AGRICULTURAL CREDIT PROJECT

LOAN 1129-YU

Project Completion Report

I. Introduction

(a) The Agricultural Sector:

1.01 Agriculture was no longer the leading sector in Yugoslavia by mid-1970s, but it still accounted for about one-fifth of the social product, constituted roughly 15-20% of total commodity exports, and employed about 44% of the labor force. The social product in the agricultural sector grew by 3.2% annually from 1968 to 1973, with the social sector output increasing annually at 5.2% and the private sector at 2.4%. Agricultural production fluctuated considerably with weather conditions, and its growth did not keep pace with consumption growth. The major constraint to further agricultural development in the social sector was the lack of capital for large investments needed in crop and livestock production and processing facilities. The sector required large investments particularly in irrigation, drainage, and land development to further increase productivity. The individual sector's major constraints were the lack of capital and credit facilities for on-farm mechanization, and purchase of better quality livestock breeds and fertilizers, and inadequate extension services particularly for farmers not participating in cooperative arrangements with the social sector.

1.02 In July 1973, an 'Inter-Republican Agreement on the Long-Term Development Policy for Agriculture'/1 was finalised setting out the policy objectives for the period 1973-85. It provided a comprehensive framework for the development of agriculture including, for the first time, the private as well as the social sector. The 1973 agricultural development plan provided a suitable framework for Bank lending, since it aimed, by explicitly supporting the individual sector, to improve resource allocation and promote more even income distribution within the sector.

(b) Project Background:

1.03 The Bank by 1973, had made 32 loans totalling about US$1,021 million to Yugoslavia. Bank lending was generally concentrated on infrastructure projects, including transportation, power, telecommunications, and multipurpose projects. Nine loans had been made for industry, two for tourism, and one for agricultural industries in Macedonia. The Bank was also providing technical assistance to Yugoslavia in several areas. A series of regional studies of the four less developed regions of Yugoslavia was initiated in 1973. This series, upon completion, assisted the Yugoslavs and the Bank in formulating development strategies for these regions. Other Bank activities included assistance with a study on the Yugoslav capital market designed to help improve resource allocation, and assistance with a training program for auditors of the Social Accounting Service, which audits all enterprises and Government activities, including Bank-financed projects. The Green Plan was also reviewed by the Bank in September 1974.

1/ The Agreement is also referred to as the 'Green Plan' of Yugoslavia.

1.04 Although three previous IBRD loans included a small agricultural component, the first integrated agricultural development project the Bank assisted in was the 1973 Agricultural Industries Project in Macedonia (894-YU) - PPAR, November 10, 1982. The Agricultural Credit Project (1129-YU) was, however, the first nation-wide project in which the Bank participated.

II. Project Formulation/Loan Processing

(a) Identification/Preparation:

2.01 The IBRD economic mission in 1971 recommended increased transfers of capital to labor surplus areas (the lesser developed regions) and also for more labor-intensive types of investment. By 1973, the Yugoslav government's priorities had shifted from predominantly large-scale investments in best agricultural regions to smaller subprojects throughout the Federation, and from predominantly social sector investments to greater involvement of private sector farms. On July 20, 1973 the Yugoslavs requested World Bank assistance. With these developments in background, the Identification mission in October 1973 saw good prospects for formulating a project suitable for IBRD financing and in line with Government priorities. The Bank, at the identification stage itself, advised the Yugoslavs that it would be a 'credit project' rather than a 'line of credit' which would require the Bank to earmark its loan proceeds for major investment purposes, and the Bank to appraise and approve each major investment category, though within designated investment purposes the proceeds could be used with flexibility in response to the evolving demand for credit. Under the Green Plan, the Republics/Provinces had designated Vojvodjanska Banka as a coordinating bank for certain agricultural investments, at the federal level. It was, therefore, a logical channel for an IBRD credit project. However, the Bank rightly recommended that prior to appraisal, a financial analyst would visit the Vojvodjanska Banka and assess its suitability as the principal financial institution for a credit project.

2.02 The first Preparation mission visited Yugoslavia in January 1974. It emphasized that the project was not merely for increasing production of 5 major commodities - cereals, sugarbeet, sunflower, meat and milk, as outlined in the Green Plan, but was also a channel of Bank assistance to the Yugoslav agricultural sector so that adequate development of less developed regions and sectors would be ensured.

2.03 The preparation report, done jointly by the Federal Committee for Agriculture and Vojvodjanska Banka, was received in the Bank in June 1974. The report was fairly well-prepared. However, it raised some issues, which had to be clarified prior to appraisal. So a second preparation/pre-appraisal mission was undertaken by the Bank in August 1974. According to the preparation report, all commercial banks in Yugoslavia (numbering about 55) could participate in the project. The Bank informed the Yugoslavs that it could not appraise such a large number of banks, as the objective of institution building would be lost. The Yugoslavs agreed on the need to reduce the number of participating banks to between 12 and 15. The formula used for the proposed regional allocation of project funds, was also not satisfactory to the Bank, as it resulted in low allocation (27% of loan funds) to the less developed regions. The Yugoslavs were prepared to consider changes in allocation. The Bank agreed that the major issues were sufficiently resolved to proceed with the appraisal.

2.04 Being the first nation-wide project, and with issues like republic and sectoral allocation of loan funds, and with unknown appraisal capability of the banks, the time taken by the Bank to prepare the project was reasonable. However, some of the initial questionnaires and data requirements of the Bank to assess the creditworthiness of various local banks were somewhat extensive but were later simplified.

(b) Appraisal:

2.05 In October 1974, a 6-person appraisal mission visited Yugoslavia for about one month. The Project objectives, as established by the mission, were: (a) to increase agricultural production primarily to meet domestic demand; (b) to improve through credit, the productivity and income of the rural population, particularly private farmers; (c) to strengthen the appraisal capability of the participating banks through institution building including training and, thus, contribute to more efficient use of resources; and (d) to support efforts being made in improving the inter-republican coordination of investment planning in the agricultural sector. Project objectives were generally achieved. The project was part of Yugoslavia's Agricultural Development plan, and upon physical completion, over a 5-year investment period, 1976-1980, the project accounted for 3.5% of total investment in agriculture.

2.06 The Bank had a limited impact on the regional and sectoral allocations of the loan proceeds, which were agreed upon by the Republics and Provinces, but the Republics did take into account the agricultural development priorities, regional income and sectoral distribution objectives. The private sector, which had been neglected in the past, was to receive 43% of the loan proceeds, and the four less developed republics/provinces were to receive 27%, as spelt out in the Borrower's Preparation Report. However, with each repeater credit project, Bank succeeded in getting the Yugoslavs to allocate more funds to the individual sector, and to the less developed republics. In the Second Credit Project (Loan 1477-YU), 57% of loan proceeds were allocated to the individual sector; 50% to the less developed Republics/Provinces. In the Third Credit Project (Loan 1801-YU), 70% of the funds were allocated to the individual sector; 51% to the less developed Republics/Provinces.

2.07 The major project investments financed under the project are: - dairy and sheep farms, vegetable and fruit production, land development, and on-farm mechanization in the individual sector; dairy and cattle fattening farms, vegetable production, irrigation, drainage, and land development, grain drying and cold storage facilities, and milk collection centers in the social sector. All these investments were included in the priority list established by the 'Green Plan'.

2.08 The organizational arrangements were as follows: The Federal Coordination Committee, which was established under the Agricultural Development Plan was to continue to perform its coordination role with respect to the project. Vojvodjanska Banka (VB) was the Borrower and an apex bank for the project. One bank from each Republic/Province participated under the project, and VB functioned as a participating bank (PB) for the province of Vojvodina. Similar organizational arrangements exist for the repeater credit projects. The appraisal mission outlined detailed criteria for appraising subprojects by VB and the PBs. The procedures to be applied

were: (a) PBs would approve all subprojects having an investment cost below US$1 million; (b) VB would review the appraisal of and approve all subprojects having an investment cost between US$1 million and US$1.5 million; and (c) the Bank would review the appraisal of and approve all subprojects having an investment cost above US$1.5 million. The Bank would also review and approve the appraisal of the first social as well as private sector subprojects of each PB and of VB, and all cattle fattening subprojects, for which the export prospects were somewhat uncertain. The PBs and VB prepared 41 subproject appraisal reports, of which 36 were submitted to IBRD and 5 to VB for review. These appraisal procedures constituted a good learning experience for the PBs, and fostered institution building. In the repeater projects, the procedures were simplified by the Bank, as in the Second Credit Project, the Bank did not review the first subprojects of each PB, and in the Third Credit Project, only the subprojects (in support services and agroindustries) having an investment cost more than US$3.0 million are submitted to the Bank for approval.

2.09 The major issues flagged by the appraisal mission were: (a) the Yugoslav request for a loan of US$66.6 million based on total investment cost of US$166.5 million excluding contingencies. The mission believed that a project of this size, including contingencies, would increase to about US$245 million, which would exceed the capacity of the PBs to appraise subprojects, to process subloans and to commit funds in the 2 year commitment period proposed. The mission recommended a reduction in all investment categories to a total project size of about US$163 million including contingencies, and a Bank loan of US$65 million equal to 40% of investment costs; and (b) the prevailing distinct interest rates for investments in agriculture which varied between 3 and 8% for the individual sector and between 3 and 12% for the social sector, depending upon the Republic/Province and the type of investment. The initial proposal was to have uniform on-lending interest rates (9.75% for loans to the social sector and 7.75% for loans to the private sector) which were to apply irrespective of the purpose of the loan and the source of funds for lending.

2.10 In the decision meeting, held on November 11, 1974, it was decided that, in view of the prevailing limit on Bank's current lending program to Yugoslavia, it would be necessary to reduce the proposed loan amount from US$65 million (recommended by the appraisal mission) to US$50 million. But the initial proposal on uniform interest rates was accepted. The regional allocation of loan proceeds (73% available to developed Republics and 27% to less developed Republics), though not raised as an issue, was accepted at the decision meeting. It was accepted because any reallocation would have required lengthy negotiations, and the project was aimed at supporting improvements in agricultural productivity.

(c) Negotiations:

2.11 Negotiations started on March 24, 1975 following pre-negotiations in Yugoslavia, and were substantially completed on April 1, 1975, except for the issue of foreign exchange risk which was not finally resolved until April 21, 1975. The three major issues were:

(a) Spread on Bank proceeds: The Bank proposed a spread of 3 percentage points—1 for VB and 2 for PBs—to cover operating costs and risks. The Yugoslavs counter-proposed a spread of 2%. Finally, a compromise of 2.5% spread was reached;

(b) Interest rate on domestic funds: the Bank's original position called for 2 rates, 1 for the social sector and 1 for the individual sector applicable both to proceeds of the loan and the local finance, based on a blend of the total cost of the funds made available. This proposal was unacceptable to the Yugoslavs. They proposed instead that, on the proceeds of the Bank loan, a sub-borrower should pay the standard rate plus 2.5 percent spread, and on the locally funded component of a subloan, the sub-borrower should pay the prevailing interest rate for that type of investment in the particular Republic or Province. The Yugoslav proposals were eventually accepted by the Bank's management on March 28, 1975. The Yugoslav position was that interest rates do not play any role in resource allocation in a socialist economy. Prior to 1975 the Bank accepted this position. However, in 1975, during negotiations of Credit I project it was debated within the Bank that interest rates should play a role in Yugoslavia. It was ultimately agreed that the Borrower would carry out a study of interest rates in the agriculture sector. The basic objective of the study was to analyse the existing interest rate structure for the agriculture sector, and to determine whether a uniform interest rate would be effective and feasible. The agreement of the Bank not to insist on uniform interest rates applicable to both Bank proceeds and to local funds, and to all investments in agriculture in all Republics/Provinces continues to have negative consequences on investment decisions and resource allocations in the Yugoslav economy.

(c) Foreign Exchange Risk: The Bank proposed that VB and PBs would not bear any foreign exchange risk. The social sector sub-borrowers would bear the full foreign exchange risk on portion of subloans financed out of the proceeds of Bank loan. The individual sector sub-borrowers would not carry any foreign exchange risk, which would be assumed by national banks in each republic/province. The Yugoslavs maintained that the issue of how the foreign exchange risk should be borne on foreign credits was being discussed at the highest levels within Yugoslavia, and thus it would be impossible to register, in the loan documents, any agreement because it might seem to pre-empt a decision by the Yugoslav Government. This problem was resolved by including in the Loan Agreement a clause providing for satisfactory protection for the Borrower and making it a condition of effectiveness that a regime covering the foreign exchange risk satisfactory to the Bank, would be introduced.

(d) Board Presentation:

2.12 The Loan was approved by the Executive Directors on June 5, 1975. The theme of the loan presentation was 'Improving Agricultural Productivity and Incomes in Yugoslavia'. The Board members welcomed the project as it provided a balance to the predominance of large infrastructure projects in Yugoslavia, and commended the policy implications of Para. 21 in President's Report, which stated that the Bank assistance could be extended through fewer projects, by financing a part of the local costs rather than the financing of foreign exchange costs alone would allow. The Loan was signed on June 20, 1975.

III. Project Implementation

(a) Loan Effectivness

3.01 Before the loan became effective, Bank missions visited Yugoslavia in June and October 1975, to discuss the staffing, organization and training of Vojvodjanska Banka and to focus on steps taken to make the loan effective, particularly the signing of the Subsidiary Loan Agreement between VB and 7 other PBs. The Yugoslavs on November 12, 1975 requested the Bank to postpone the effectiveness date from November 17, 1975 to December 20, 1975. The Bank decided to postpone the date to January 31, 1976 to allow for the receipt and review of necessary documents. The remaining conditions to be fulfilled by the Borrower for effectiveness were the approval of the Guarantee Agreement by the Federal Assembly, its publication in the Official Gazette, the corresponding legal opinions, and the final decision on the allocation of the foreign exchange risk. The Bank had to postpone the date of effectiveness once more, to February 27, 1976. However, by February 12, 1976 the Borrower had met all the conditions satisfactorily and the Loan was declared effective. The extension of the effectiveness date did not have an adverse impact on the timely and adequate start-up of the project, as very few subproject appraisal reports had been prepared by the Borrower and the PBs and submitted to the Bank for its review.

(b) Project Start-up

3.02 Two months after loan effectiveness, six subprojects were approved by the Bank, of which two were from Vojvodina, two from Slovenia, and one each from Montenegro and Croatia. Considering that Bank was to review the first 16 subproject appraisal reports i.e. in each sector in each Republic/Province, it was a slow start-up. Besides, the staffing of the Project Operations Department in VB was expected to be completed only by July 1976. But the Bank mission in April 1976 was of the opinion that the existing staff seemed competent to appraise the subprojects. This assessment was justified at the time, as 2 seminars on project appraisal had already been held, one for the PBs in January 1975, in which the Bank staff participated, and another for the investors in June 1975, and the previous missions had also discussed the subproject appraisal procedures.

(c) Implementation

3.03 The slow initial pace of project implementation reflected largely the problems involving the application of methodology of project appraisal required under the project, and in the lead bank's efforts to develop its role vis-a-vis the PBs. The quality of the analysis in the sub-project appraisal reports, initially, differed among the PBs. Marketing analysis was often weak, and insufficient consideration was given to employment effects and capital intensity. The Bank missions, therefore, used the appraisal reports already received by IBRD, to discuss the methodology with the PBs, and suggested in-service training in VB for the staff of PBs. Through the project implementation years, the IBRD missions identified the following problems which resulted in slow disbursements: (a) shortages of construction materials in 1977; (b) reorganization of the banks according to the credit and banking law, which became effective in January 1978 (See Footnote, pp. 23); (c) elapse of a long period between the approval of subloan and the signing of contract with the sub-borrower, and the tendency by some PBs to conserve clerical effort through submission of withdrawal applications only upon

subproject completion; (d) lack of identification/preparation of subprojects; (e) initial slow start of the project, as the disbursement rate in later stages picked up, but was not high enough to compensate for the earlier shortfall; and (f) inadequate supervision by the PBs. Every Bank mission suggested that PBs should increase supervision of subloans and provide guidance to sub-borrowers in the preparation of documents. The Borrower attributes the slow rate of implementation to an additional problem which was an insufficient commitment of the basic banks to project implementation. In retrospect, it appears that some of these problems, which could have been avoided, stemmed largely from: (i) optimistic appraisal assumptions concerning the initial development of institutional capacity to absorb project funds; and (ii) insufficient supervision activity by VB, PBs and basic banks. The problem of inadequate supervision continues to exist in the 2 repeater credit projects.

(d) Costs and Financing

3.04 The appraisal mission' cost estimate and the actual costs are compared below. Details are given in Annex 1.

Project Costs

Investment Type	Appraisal Estimates/1	Actual	Cost Overrun/Savings ( )
Individual Sector	Din Million		(%)
Livestock Production	575.5	707.3	23
Vegetable Production	72.6	14.8	(80)
Fruit Production	118.6	139.0	17
On-farm Mechanization	130.0	348.3	168
Land Development	13.8	7.3	(47)
Subtotal	910.5	1,216.7	34
Social Sector			
Livestock Production	472.5	696.1	47
Vegetable Production	132.6	127.7	(4)
Land Reclamation	366.4	474.5	29
Agroindustries	242.9	289.5	19
Subtotal	1,214.4	1,587.8	31
Total Project Costs	2,124.9	2,804.5	32
US$ Equivalent (million) /2	125.0	130.4	4

1/ Including Contingencies.
2/ Appraisal exchange rate was US$1=Din 17. The average annual exchange rates during implementation years were 1976: US$1=Din 18.25; 1977: $1=Din 18.34; 1978: $1=Din 18.71; 1979: $1=Din 19.12 and 1980: $1=Din 28.35.

3.05 The total project cost in current Dinars increased by about 32% compared to appraisal estimates. However, the cost over-run in US dollars was only 4%, as the exchange rate fluctuated with Dinar depreciating/devaluing through the implementation years. Most significant cost overrun (168%) was in the case of on-farm mechanization, and it was primarily due to investment in 3,052 tractors instead of 400 as projected at appraisal. Changes in physical capacities, for each subproject, are indicated in Para 4.01. Other reasons for over-all cost overrun were inflation, and changes in design and specifications by sub-borrowers, which led to delays. At appraisal, it was projected that the implementation rate would be 37% of total investment in Year 1, 56% in Year 2, and 7% in Year 3. However, the actual phasing of total investment costs in current Dinars has been 1.5% in 1976, 17.8% in 1977, 21.4% in 1978, 21.3% in 1979 ad 38.0% in 1980./1

3.06 The sectoral allocation of total investment was 43% in individual sector and 57% in social sector, as at appraisal. However, because of reallocations from social to individual sector, the actual utilization of IBRD Loan proceeds (US$49.258 Million) was 46% in the individual sector and 54% in the social sector (See Annex 2). The regional allocation of total investment was in favor of developed Republics/Provinces - 77%, whereas at appraisal it was projected to be 73%./2 But as there were no reallocations of IBRD loan proceeds between republics, the regional allocation of Bank proceeds remained at 73% for developed Republics.

3.07 The cost over-run led to the social sector investors' reduced participation in total investment. The Loan Agreement (Schedule 5, Section 3A) had stipulated that their contribution would be at least 30%. The average contribution by social sector investors was 28.6%. A large share of cost overruns was financed by PBs and local banks. The Bank's original participation (40%) in social sector investments, declined to 37%. The actual distribution of financing in the individual sector was not available, except that for different subprojects, the sub-borrower and the domestic bank's contribution ranged from 60-66% (appraisal estimate was 60%) and the Bank's participation varied from 34-40% (original participation was 40%). But, most of the cost overruns in the individual sector were financed by increased contribution of the sub-borrowers, and their participation was definitely more than 20% stipulated in the Loan Agreement.

(e) Interest Rates

3.08 The interest rate on the portion of subloans financed out of the proceeds of the Loan was 11%, and on the portion of subloans financed cut of local funds the following interest rates were applied:

Republic/Province	Interest Rates Individual Sector	Social Sector
	Percentage Per Annum	
Slovenia	3	3
Vojvodina	5	9-11
Croatia	8-11	8-12
Serbia	5-11	5-10
Bosnia-Herzegovina	4	4
Montenegro	6	6
Macedonia	11	6-11
Kosovo	4	4

1/ See Annex 1.
2/ See PCR prepared by the Borrower - Pp. 16.

Interest rates for investments in agriculture actually varied between 3% and 12% for the social sector, as expected by the appraisal mission. However, for the individual sub-borrowers, the interest rates varied between 3 and 11%, whereas at appraisal it was projected to be between 3 and 6%. It appears that the blend-rates for the social sector averaged about 9.75%, but the blend interest rate for the individual sub-borrower was probably higher than the average 7.75%, estimated by the appraisal mission.

(f) Studies/Consultants

3.09 Terms of reference for the interest rate study were approved by the Bank in March 1976, and the draft of the study was received in November 1976. There was very little analytical content on the impact of the interest rate regime on resource allocation and the draft study basically concluded that differentiated rates are necessary. The Bank decided to wait for the final interest rate study, before proceeding to the Loan Committee with the Second Credit Project. However, the study did not place the Bank in any better position to examine the question of resource allocation, and/or capital intensity. But it provided a basis for initiating a dialogue with the Yugoslavs. Assurances were obtained at negotiations of the Second Credit Project that the Association of Yugoslav Banks would undertake a comprehensive study on interest rates. Assurances were also obtained that an interest rate reform would be undertaken by the PBs, so that floor rates would be set on domestic resources loaned under Second Credit Project. The interest rate study commissioned under the Second Agricultural Credit Project was a basis for further dialogue with the Yugoslav authorities. As a result of these studies, in 1980, the Yugoslav authorities began to acknowledge and agree that interest rates have a valid role to play in resource allocation in Yugoslavia. It should be noted that getting such an agreement was a prerequisite to any significant changes on interest rate policy. The Bank obtained agreement of Yugoslav authorities under the Third Agricultural Credit Project, that interest should play a more meaningful role in resource allocation. Since then progress has been impressive: (a) in World Bank projects, on-lending rates on funds mobilized through commercial banking system have increased on several occasions. These changes have led to increase in on-lending rates from 7 to at least 18% in recent projects; and (b) interest rates on priority projects extended on basis of funds mobilized through commercial banks have increased from a range of 2-7% to a range of 8-12%, and other lending rates (consumer credit) have increased to as much as 20%. The rapidity of these changes contrasts markedly from the previous policy whereby nominal interest rates were held fixed for the 5-year period regardless of changes in inflation. Over the years, the gap between the nominal domestic interest rates on medium/long-term loans and the inflation rate has decreased, but the interest rates have remained negative in real terms. As part of the recently approved Structural Adjustment Loan, Yugoslav government has expressed its intent to set interest rates on intermediated funds of the domestic banking system at real positive levels, within 3-5 years. However, resources are also made available to the Borrowers in the less developed regions from the "special funds", which continue to be charged highly concessional interest rates. These "special funds" are essentially raised through levies on social sector enterprises and are provided to investing enterprises in pursuit of regional development objectives, and include the Federal Fund for the Development of the Less Developed Republics and Kosovo and the Republic Funds, intended to foster development of the less developed communes.

3.10 Under the Second Credit Project VB was made responsible for evaluating the project's benefits at the level of social and individual sector sub-borrowers. These monitoring procedures were to apply to both First and Second Credit Projects, though the monitoring and evaluation (M&E) system was not initially planned for under the First Credit Project. The design of the M&E system was spelt out in detail by the Bank. The methodology was approved by the Bank in August 1978. VB employed a consultant who prepared four monitoring and evaluation reports for the First Agricultural Credit Project. The statistical analyses, with estimation of coefficients of variation, confidence intervals, and t-tests are good and rigorous in the evaluation reports. However, the Completion Mission was able to make only limited use of the investment models from the Reports, as a basis for the rate of return calculations. The without-project situation was not analysed in most of the models, and the deflators used for doing constant analyses were incorrect.[1/] Some of the broad-based, general conclusions are not supported by any data. A greater in-depth study of a smaller but the same sample observed through the years may be more advisable (see Annex 9).

(g) Procurement

3.11 International Competitive Bidding procedures were followed for procurement of a coldstore facility constructed under a turnkey contract, and for planting and harvesting equipment for the social sector vegetable subprojects. The in-calf heifers were procured through solicitation of bids from suppliers from at least 3 countries. About 1,800 in-calf heifers for the social sector and 1,561 heifers for the individual sector were imported, while at appraisal it was estimated that about 1,400 in-calf heifers for the social sector would be imported. There were no major procurement difficulties or delays which affected the project implementation. There was only one instance of unclear specifications for tractors in the tender documents. So the Borrower was advised by the Bank to request quotations for new bids for tractors from all bidders, using revised specifications. In the case of ICB procurement for the coldstore facility, the investor declared the lowest bidder as non-responsive and, in consultation with the Bank, decided to open negotiations with the second lowest bidder. The lowest bidder requested the Bank through its Embassy in Washington to reverse this decision. The Bank staff, after subsequent discussions with the Borrower and the investor, was convinced that the decision to negotiate with the second bidder was correct, as the lowest bid was non-responsive because it failed to provide a fixed price bid in accordance with the tender documents. Bid opening for procurement of mushroom equipment took place on July 7, 1980, and the Bank received the bid evaluation report on August 19, 1980. There were subsequent changes in the bid evaluation report as one bidder withdrew. The Bank gave its concurrence to the final contract on January 28, 1981, after seeking clarification on the bids, from the Borrower. Procurement for the mushroom equipment could have been completed on time, but the investor for several reasons (discussed in para. 5.05) did not start the construction of civil works, or the purchase of domestic equipment, and to date the imported equipment is lying idle. The delay in the implementation of this subproject is attributable more to import restrictions, and to the investor not discharging his responsibilities than to procurement delays.

1/ VB basically agrees but provides some additional comments (PPAM, Attachment 2, page 3)

(h) Loan Amendments/Covenants

3.12 The Loan Agreement, Schedule 1 had stipulated that the Bank would finance 57% of disbursements effected by the Borrower to Social Sector Subprojects. On July 27, 1976, the Bank amended the Schedule 1 and agreed to finance 100% of foreign expenditures or 57% of disbursements from subloans. The Bank also showed flexibility in reallocation of loan proceeds primarily from social to individual sector, and in reallocation for investment type within a sector. In view of changing pattern of credit demand, 23 such requests for reallocation were favorably complied with by the Bank. The Loan Agreement was also amended in June 1980, when all the responsibilities of Udruzena Banka, Zagreb were transferred to Zagrebacka Banka, Zagreb in Croatia. Bank agreed to the split of the spread of 2.5% on loan proceeds to be 0.75%, instead of 1% for VB, and 1.75%, instead of 1.5% for PBs. The proposal to reduce VBs spread was accepted by the Bank, because it was based on 4 years experience of VB in its administering costs, and VBs risk on its loans to PBs was negligible. Under Credit II Project, VB is receiving a 1% commission instead of a spread on funds on-lent.

3.13 The Borrower complied with the Loan covenants including the supplemental letter on Allocation of Loan Proceeds satisfactorily

(i) Disbursements

3.14 Project implementation delays adversely affected the disbursement schedule projected in the Appraisal Report. The PBs in 4 Republics/ Provinces--Serbia, Montenegro, Kosovo and Croatia--did not disburse any funds in the first year of project implementation. Although the loan closing date had been extended from December 31, 1979 to December 31, 1980, disbursements were made until March 23, 1981 to settle outstanding withdrawals. Loan disbursements took about 21 months longer than anticipated. Quarterly estimated and actual disbursements are given in Annex 6. The Bank cancelled the undisbursed balance of US$742,057.91 from the loan account.

IV. Operating Performance

(a) Pattern of Credit Demand

4.01 The pattern of credit demand, which evolved during the project implementation, has been assessed by comparing the physical capacities as planned at appraisal with the capacities completed, as shown in the following table:

Pattern of Credit Demand

Type of Investment	Unit	Physical Capacities Appraisal	Physical Capacities Completed	% Achieved
Individual Sector				
Livestock Production:				
Cattle Sheds	No.	-	2,875	-
Purchase of in-calf heifers/ dairy cows	No.	13,000	7,906	61
Of which imported	No.	-	1,561	-
Purchase of ewes	No.	55,000	10,798	20
Purchase of gilts	No.	-	457	-
Vegetable Production:				
Mixed Vegetable Production	ha	1,000	157	16
Plastic green houses	ha	40	17	43
Fruit Production:				
Orchards	ha	400	548	137
Vineyards	ha	850	916	108
Land Development	ha	1,200	1,850	154
On-farm Mechanization:				
Tractors	No.	400	3,052	763
Social Sector				
Livestock Production:				
Cattle Stalls	No.	-	9,874	-
Purchase of in-calf heifers/ dairy cows	No.	5,600	2,172	39
Of which imported	No.	1,400	1,797	128
Cattle Heads per batch	No.	7,500	7,150	95
Vegetable Production:	ha	4,000	4,409	110
Land Reclamation:				
Irrigation	ha	7,600	4,755	63
Drainage	ha	8,400	14,556	173
Land Development	ha	9,800	23,226	237
Agroindustries:				
Grain Drying Facilities (6)	tons/hour	333	162	49
Milk Collection Centers (148)	liters/day	480,000	273,950	57
Cold Store facility	tons	6,800	10,000	147

The table shows that in the individual sector there was the strongest demand for tractors, and whether this has resulted in over-mechanization in Yugoslavia has been discussed in Annex 10. Nearly 40% of the tractors financed under the project were in Bosnia-Herzegovina alone. (See Annex 3). Demand was also strong for investments in orchards and vineyards, particularly in Serbia. Investment in the land development in the individual sector was higher than projected at appraisal, but was exclusively in Croatia. In the social sector, the demand for investments in land development and drainage was the strongest, but again primarily in Croatia. In both individual and social sectors, the demand for in-calf heifers was weaker than for the construction of cattle sheds. There was a very limited demand in Croatia for investments

in mixed vegetable production in the individual sector, and a relatively strong demand for vegetable production in the social sector, but only in Vojvodina. The grain drying facilities were constructed in Vojvodina, which is the granary of Yugoslavia, and the only cold store financed under the project was also in Vojvodina. The demand for milk collection centers was the strongest in Bosnia-Herzegovina, and some demand for the centers existed in Macedonia too.

(b) Individual Sector

(i) Dairy Farms

4.02 Implementation of dairy farm development was delayed during the initial years of project implementation due to a shortage of building materials and of in-calf heifers. Investment in buildings is about twice that expected and investment in livestock is lower than expected with an average of only 1.7 cows purchased. The appraisal estimate was 2 cows.

4.03 Estimates at appraisal were based on the expansion of existing buildings to enable milking cow numbers to be increased from 3 to 6 milking cows. Most borrowers have however constructed buildings to house at least 6 cows. The buildings have been constructed in the traditional manner, in many cases with fodder storage above. The farmers have kept cow purchases to a minimum, preferring to breed their own. This however takes time and most borrowers are not yet fully utilising the facilities.

4.04 Since appraisal, there has been a decline in the profitability of dairying due to a greater increase in concentrate price relative to milk price as shown in the following table:

Milk and Concentrate Prices

Year	Milk Din/lit.	Conc. Din/kg	Milk/Conc. Ratio	Beef Din/kg.lw	Beef/Conc. Ratio
1974	4.00	1.60	2.50	15.5	9.69
1978	4.95	2.92	1.70		
1979	6.30	3.30	1.91		
1980	9.05	5.24	1.73		
1981	12.43	8.57	1.45		
1982	18.10	13.10	1.38	113.93	8.69

During the same period, the beef-concentrate price ratio has declined only slightly. Farmers have therefore not increased cows as rapidly as expected but have turned to greater beef production by taking all surplus young stock to relatively heavy slaughter weights.

4.05 In order to maintain viability in dairy production, farmers are feeding lower quantities of high-priced concentrate and increased amounts of cheaper fodder. This reduces the level of per cow production which could be achieved. Production per average cow on participating farms is 2,970 liters per annum, implying a production of approximately 4,000 liters per mature cow lactation which, considering the tendency to feed lower quality feedstuffs, is satisfactory. The annual calving percentage is 80% and mortality rates are approximately 3%, as expected at appraisal.

4.06 In addition to the investor's contribution to the investment cost as determined in the subloan, many farmers have made other investments, particularly in pasture and forage development, from their own resources.

(ii) Sheep Farms

4.07 According to the "Evaluation of the Economic Effects of Agricultural Project 1129-YU Final Report", loans have been made to sheep farms for the purchase of livestock only.

4.08 The major sources of fodder for sheep are the communal and social pastures. Farmers are required to make payments for grazing these pastures. The level of payment varies markedly between regions. No capital cost is therefore involved in developing fodder for livestock and, apart from the annual grazing charge and the conservation of some hay, no other costs are involved. The profitability of sheep farming is therefore high.

4.09 It must, however, be recognised that the number of sheep which can be grazed on these pastures is limited unless a major pasture development program is initiated. Sheep numbers have declined markedly since the 1940's but the number of additional sheep which can be carried will need to be carefully controlled to prevent overgrazing.

(iii) Vegetable Production

4.10 Total investment in private sector vegetable production was Dinars 14.7 million. As no survey was undertaken on vegetable production, no information is available on the benefits resulting from this investment. Total investment in mixed vegetable production and plastic houses in the private sector was well below that planned, on account of low vegetable prices both on the green market and from processing facilities.

(iv) Fruit Production

4.11 Investments were made for fruit production for sour cherries, raspberries and vineyards. Investment costs have been fairly close to the appraisal estimates.

4.12 Yields of cherries have been considerably in excess of those expected at appraisal. Third year plantings yielded 2.3 t/ha and fourth year plants yielded 4.47 t/ha. This compares very favorably with the projected yields of nil until Year 4, 3.6 t in Year 5, increasing to 8 t in the ninth year. As annual operating costs have proved to be less and output prices higher than expected, the overall profitability is excellent. This can, however, result in over-production of cherries in future years.

4.13 The survey undertaken by the consultant engaged in monitoring and evaluation shows that in 1980, the second year of raspberry production, the yield was 5.6 t/ha. This compares very favorably with the expected yield of 3.4 t/ha. A survey in the following year showed an average yield of 4.5 t/ha, but this included plantings which were only in their first year. The overall profitability for raspberry production is high.

4.14 The profitability of vineyard production has also been good as yields have been better than expected. This is shown in the following table:

Vineyard Yields
(tons/hectares)

Year of Development	Planned	Achieved	Now Expected
Year 3	3	3	
4	6	7	
5	10	10	
6 - 24	10	-	13

(v) Land Development

4.15 Land development in the individual sector was mainly for drainage and related civil works. Crop yields exceeded projected estimates and have resulted in financial profitability.

(vi) Mechanization

4.16 The major component of loans for mechanization was for tractors (57%). The mission was, however, advised by all the organisations visited that in all cases where subloans were made for tractors, the appropriate equipment required by the farmers to use the tractor was either also included in the subloan or already owned by the farmers.

4.17 It would appear that subloans made to farmers for machinery only were designated mechanization even in cases where such subloans were to support livestock or fruit production. In some cases farmers received a subloan for mechanization and a separate subloan for livestock. It is apparent to the mission that the introduction of mechanization in general, and tractors in particular, has had a major impact, particularly in marginal agricultural areas (see Annex 10).

4.18 The survey undertaken by the consultant did not attempt to determine the pre-project situation on farms which obtained loans for mechanization. It is therefore extremely difficult to evaluate the benefits which have resulted from mechanization. Crop yields obtained by farmers who invested in mechanization are well in excess of the average yields for the individual sector in Yugoslavia.

(c) Social Sector

(i) Dairy Farms

4.19 There were 15 sub-projects for dairy farms financed by the Project. In some of these investments, the subloans were obtained for part of the investment such as additional buildings, additional herd, or reconstruction. The financial results achieved have been poor due to two major factors: the marked increase in concentrate price relative to the price of milk and the very high labor cost relative to the milk price (see para 4.23).

4.20 Production per cow has reached a level of 5,200 liters per lactation, but total milk production has failed to come up to expectations due to a delay in fully stocking the facilities (on the farms surveyed, only 86% of the projected number of cows was reached in the fourth year of monitoring) and the calving rate of 78.2% is below the expected level of 90%.

4.21 A cash flow statement is given in Annex 8A. Fodder accounts for 50% of the operating costs, and personal income accounts for about 17%. Those dairy units which are operated as separate organizations, purchasing all feedstuffs, are having difficulty in meeting costs. Those units which have land have had fodder costs valued at the direct cost of purchasing the fodder. Returns would be poorer if the fodder costs were calculated on an opportunity cost basis. This is also true for those organizations which are purchasing feed from other organizations on a contractual basis at prices lower than the opportunity cost of other crops.

4.22 Total staffing varies between social sector work organizations. The mission observed units ranging from 1 worker per 100 cows to 4 workers per 100 cows. Low rates of staffing are essential to obtain satisfactory returns. Four workers per 100 cows should be considered the maximum.

4.23 The returns from dairy subprojects in social sector are poor due to high labor costs and overheads. Livestock production is relatively labor intensive and the large social sector dairies have not demonstrated that better economy of labor use can be achieved in the large units. Individual sector livestock farmers operate small livestock enterprises with much of the labor being done by the family or by the farmer in addition to his normal workload. The direct cost of labor is therefore very low in the individual sector but high in the social sector. Individual farmers also have some fodder resources such as crop by-products available, and the use of uncropped areas for livestock feeding are available at a low cost. In the large social sector livestock units, the collection and transport of the very large quantities of crop by-products required to obtain the same benefits is difficult and expensive. Bank has recognized the inherent advantage and relative efficiency of the individual sector undertaking investments in labor-intensive livestock production, and has been reorienting investment in that direction.

(ii) Cattle Fattening

4.24 Five cattle fattening sub-projects have been undertaken. The data had been collected from one unit only and that was during its first year of operation when the facilities were only used for part of the time. Daily growth rates of 0.965 kg/day were achieved. This is below the planned growth rate of 1.1 kg liveweight. The returns from social sector cattle fattening subprojects are poor, for the same reasons as for social sector dairy farms (para 4.23).

(iii) Vegetable Production

4.25 Results achieved in commercial vegetable production have been poor. The price in real terms for field-produced vegetables has declined and, as a result, the area sown of the organizations which obtained loans for this purpose has declined. Of three projects surveyed by the consultant, the total area planned for commercial vegetable production of 2,080 ha resulted in only 677 ha being sown until 1980. Yields have been better than those projected at appraisal, with the exception of tomatoes in 1980. Vegetable production failed to show a profit in 1979 and 1980.

4.26 Good financial results were obtained from plastic greenhouse vegetable production.

(iv) Land Reclamation

4.27 The project proposed four types of land reclamation:

1. Irrigation North;
2. Irrigation South;
3. Land Drainage; and
4. Land Development.

The results from the survey undertaken by the consultant do not differentiate between the different types proposed. The Irrigation North project, visited by the mission, has not yet made full utilisation of irrigation, as the area of vegetable crops remains small due to the low vegetable prices.

4.28 All drainage sub-projects visited have obtained a marked increase in yield and are obtaining yields well in excess of the projected level. A large area of high quality land, from which marked increases in yield could be obtained, exists particularly in Croatia.

4.29 The projected and realized technical coefficients for primary production are presented in Annex 4.

(v) Grain Drying Facilities

4.30 Six grain drying facilities were constructed in Vojvodina Province. The facilities have rated capacities ranging from 24 to 32 tons per hour. The total capacity of 6 facilities is about 162 tons per hour at an average of 27 tons per hour per drier.

4.31 One of the driers was built at Aleksa Santic and has a rated capacity of 32 tons per hour. It was commissioned on October 10, 1977. The investment cost was Din 11,005,000 compared to the Borrower's subproject appraisal report estimate of Din 9,300,000, an increase of 18.3%. The reason for this increase was escalation of costs due to inflation. The estimate of investment cost at appraisal in November 1974, for a model with an identical rated hourly capacity, was Din 3,557,000 or 32% of the actual investment cost in 1977/78. At appraisal, however, the concept was to use the direct method of heating, rather than the indirect method of removing moisture from the grain (see Annex 10).

4.32 The driers are located adjacent to the existing grain elevators. The silo at Aleksa Santic can store 18,000 tons and consists of 12 cells and 6 interstice cells each with a capacity of 1,000 tons, together with a weighbridge and cleaning facilities. The driers are of the vertical tower type and use light oil as a fuel. Operating capacity when drying maize with a moisture content of about 33% to about 14% is about two thirds of the rated capacity. The operating capacity of the Aleksa Santic plant is 20 tons per hour or 480 tons of maize drying per day. The plants operate 24 hours per day about 40 days per year from about October 1 to mid-November.

4.33 The utilization of the Aleksa Santic drier since completion in 1977 has been as follows:

Utilization	Based Upon Rated Capacity (40 days x 32 x 24 = 30,000 tons)	Based Upon Actual Capacity (40 days x 20 x 24 = 19,200 tons)
1977	30%	47%
1978	50%	78%
1979	55%	86%
1980	57%	90%
1981	58%	90%
1982	60%	94%

4.34 The fuel consumption at 49.5 liters per ton of grain is about 10% higher than expected in a modern plant even allowing for high grain moisture contents and high humidity. The electricity consumption estimates are also extremely high at 30.7 kWh per ton (almost 5 times those of a modern facility). The electric power consumption is probably for both the grain elevator and drying facility since there is only one source. Maintenance of the plant appears to be satisfactory. The downtime represents about 2% of total operational time and most of the downtime results from the conveyor feed to the drier and not from the drier proper.

(vi) Cold Store.

4.35 A coldstore with a nominal capacity of 10,000 tons was constructed at Tavankut in Vojvodina Province for the storage of fruit, vegetables, meat and dairy products, the freezing of fruit and vegetables and the ripening of fruit. At appraisal, total cold storage facilities of 6,800 tons were planned to be erected in various locations in Vojvodina at a model size of 3,000 tons. The actual investment cost of a single coldstore with 10,000 tons capacity was Din 179,795,717 compared to the subproject appraisal report (March 1977) estimate of an investment cost of Din 113,201,275. The complex was procured through ICB on a turn-key basis (see para. 3.11) with construction commencing on August 1, 1978 and commissioning on September 1, 1980, a construction period of 25 months.

4.36 The cold storage facility and freezing equipment were financed with funds from the Project, while the fruit and vegetable processing equipment which was installed following the completion of the complex, was procured with local funds. The facility consists of a reception, sorting, palletizing and processing area including processing equipment, freezing tunnel and vertical plate freezer; 4 fruit ripening rooms with capacities each of 27 tons; cold storage with multi-temperature capabilities consisting of 8 rooms with capacities of 1,000 tons and 4 room with capacities of 500 tons; also amenities, administrative offices, engine room, workshop, boilerhouse and truck and rail loading platforms. The structure is of reinforced concrete and the insulation system is of sandwich panels with steel faces and expanded polyurethane cores.

4.37 The utilization of the cold store since completion in 1980 has been as follows:

Monthly Average Utilization	Based Upon Useable Capacity (6,500 tons)
1981 Min.	38%
Max.	77%
1982 Min.	55%
Max. (9 months)	105%

4.38 The general standard of construction and equipment varies from satisfactory to good. There are problems however with the cold store doors where there is a build up of ice and snow at the door sills caused by improperly fitted doors. The build up could result in damage to the doors in trying to free them. In addition, the door protection posts are inadequate and some damage to doors and door jambs is already evident. The standard of maintenance is only fair.

4.39 The design and layout of the cold storage could have been better with more efficient flow. The long corridor from the reception sorting and palletizing area to the cold storage rooms is narrow and congested and leads to unnecessarily long travel distances at almost ambient temperatures. The rooms are small, even those with a capacity of 1,000 tons, and workable storage is about half to three quarters of the rated capacities depending upon product type and storage turnaround requirements. For the type of product presently being stored, larger rooms of at least 4,000 tons capacity should have been constructed to reduce investment costs, improve storage efficiency and reduce operating costs. It is estimated that about 10% could have been saved on the investment cost of the structure and real storage increased by about 10% if larger rooms had been adopted.

4.40 (vii) Milk Collection Stations. One hundred and forty-eight milk collection stations with a daily capacity of 273,950 liters were constructed or equipped under the project. At appraisal it was expected that about 240 milk collection stations would be financed under the project. Of the total of 148 stations financed, the 32 located in Macedonia are completely new stations, and the 116 located in Bosnia involved the installation of new vats and equipment within existing stations. The average vat capacity of each station is 1,851 liters compared to a minimum of 2,000 liters specified at Bank appraisal. The average cost of a milk collection station constructed and equipped in Macedonia was Din 1,225,430. The average cost of equipment including installation in an existing building in Bosnia was Din 119,296.

4.41 The milk collection stations constructed in Macedonia consist of simple masonry structures of about 25m^2 for the milk collection station plus 15m^2 for a store. This store is used for the distribution of goods supplied by the cooperatives to the farmers. The stations are equipped with two vats with a total capacity of 2,000 liters. With milk collection twice a day by a tanker, up to 4,000 liters of milk per day can be handled through the station. The refrigeration equipment is simple and reliable and is serviced regularly by a mechanic employed by the cooperative operating the stations. There have been no problems with the operation of the equipment.

4.42 The station buildings are rough cast masonry with timber trusses and asbestos sheet roofs. Some buildings are badly cracked indicating the lack of reinforcing steel in the walls or good foundations. This is rather surprising in an area of Yugoslavia which is seismically active. The area around the stations is rough and unpaved and little or no attention has been paid to tanker access and turnaround. If tankers with trailers are utilized in the future to reduce milk transport costs, difficulties will arise from access which could have been avoided with more careful planning of stations and their location.

4.43 The stations are operated by one of the farmer cooperants living near each station, who opens the station for a set time and is available also between these times. He also records the milk received. Periodic testing of milk quality is carried out by a technician from the cooperative.

4.44 A comparison of projected and actual physical capacities of the grain drying and cold store facilities and the milk collection stations, is made in the following table:

Physical Capacities - Agroindustries

	Projected	Actual
1. Grain Drying Facilites		
Number of driers	-	6
Nominal hourly capacity of driers (tons)	22-32	24-32
Actual hourly capacity maize (tons)	-	15-20
Nominal hourly capacity all driers (tons)	333 (implied)	162
Nominal annual capacity all driers (tons) (Basis loading of 40 days per season)	about 320,000	about 160,000
2. Cold Store Facilities		
Number of plants	various locations	1
Nominal storage capacity (tons)	6,800	10,000
3. Milk Collection Stations		
Number of milk collection stations	about 240	148
Number of milk collection stations constructed	-	32
Number of milk collection stations equipped only	-	116
Capacity of each MC station (liters)	minimum 2,000	average 1,851
Total Daily capacity single use (liters)	about 480,000	273,950

V. Institutional Performance

5.01 Federal Coordination Committee. The Federal Coordination Committee performed well in its coordination role with respect to the project. It held frequent meetings with the participating banks (PBs), addressed the problems which were delaying project implementation, and responded to changes in credit demand by approving the reallocation of loan proceeds between sectors. Its initiative in encouraging the PBs to work in close collaboration with the Republic/Provincial committees for agriculture, association of cooperatives, and with Republic/Provincial chambers of economy, was constructive. The Committee continues to perform its coordination role with respect to the repeater agricultural credit projects.

5.02 Borrower and Participating Banks. The organizational arrangements for a nationwide project (with a bank from each Republic/Province participating under the project, and VB, functioning as a PB for Vojvodina and as an apex bank) were innovative. However, the working cooperation between VB and PBs was at times lacking. This is in part due to the decentralized nature of the banking system in Yugoslavia, and due to the decision-making process under the self-management system, which is a time-consuming process of consultation, debate, and final consensus. Besides, over the years, five of the eight PBs have been direct borrowers from the Bank under various agricultural and industrial credit projects and are therefore reluctant to deal with the Bank through VB,[1/] as required under the Agricultural Credit Projects.

5.03 The Borrower undertook a comprehensive organizational and staff reinforcement program for the purpose of assisting the staff of the Borrower and the PBs in improving their knowledge of investment appraisal techniques used by the Bank in agricultural credit projects. Vojvodjanska Banka (VB) has a staff of 14-15, working in the Project unit, and the PBs had employed 38 additional staff to work on the project. The staff are now involved with the implementation of the repeater credit projects. Seven seminars were organized by VB to train the staff of VB and PBs: five on appraisal criteria and techniques used in Bank agricultural credit projects, one on procurement procedures particularly through International Competitive Bidding, and one on withdrawal and disbursement procedures. The Borrower and the PBs were consequently introduced to financial, economic, and technical evaluation in project analyses. The project helped in the establishment of a nationwide agricultural system with uniform appraisal criteria, which was a particularly notable achievement, given the complexity and diversity of Yugoslav environment.

5.04 Extension of investment appraisal criteria used in Bank-financed agricultural projects to all agricultural investments in Yugoslavia has been limited due to: (a) the decentralized decision-making process, which depends on a system of multipartite negotiations, to match aggregate demand and supply of investment resources, as well as their allocation. The Bank has therefore been emphasizing the importance of making capital more expensive, which will induce investors to make rational/economic decisions; and (b) the limited capacity of the Yugoslav banks to guide the investment program.[2/] The Yugoslav banks are owned by their investors (combinats), who overrule the advice of the banks when it does not suit them. Bank has been supporting institutional reforms in the Yugoslav banking system, particularly simplification of internal procedures and enlargement of the authority of the Yugoslav banks. As part of recently approved Structural Adjustment Loan, the Yugoslav government has expressed its intent to adopt uniform investment criteria, including economic efficiency criteria for all large investments.

5.05 A major shortcoming in the performance of the Borrower and the PBs is inadequate supervision of on-going projects. This is in part due to lack of development orientation of the Yugoslav banks. The prime example of inadequate supervision of a subproject is the Dukat Compost Plant for Mushroom Production financed under Category B (Loan Agreement, Schedule 2) Social Sector, vegetable production. The original appraisal was carried out by

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1/ VB disagrees (PPAM Attachment 2, pages 2 and 3)

2/ VB clarifies that "banks have both right and obligation to guide investment programs according to valid legal regulations and their self-management acts" (PPAM Attachment 2, page 3).

Udruzena Banka Zagreb (the PB responsible for project implementation in Croatia, before the reorganization of the banks in Yugoslavia) in October 1979. A facility with a compost capacity of 5,000 tons per year and including supply of equipment and construction of civil works was approved by the PB. The equipment was procured under ICB. Import licenses were issued in the middle of 1980, and equipment started arriving in the second half of 1981. Because of import restrictions, there were delays and the last customs clearance of the equipment was made only in March 1982. About this time the investor revised the technical specifications of the subproject. The annual capacity was increased from 5,000 tons to 9,000-10,000 tons. Though the civil works were included in the original appraisal, the investor chose not to proceed with these until the imported equipment was cleared through the customs. The investor never finalized contracts to procure domestic equipment. As a result, the facility was not constructed and equipped under the project. After discussions between Zagrebacka Banka (which replaced Udruzena Banka Zagreb, as the PB in Croatia), the investor, VB, and Bank missions, it was decided that the subproject should proceed with funds allocated from Agricultural Credit III Project. A new appraisal of the subproject on the basis of 10,000 tons capacity was carried out in May 1982, and the investment costs were estimated at Din 116,324,351, an increase of 168% over the investment cost in October 1979 appraisal. Another source of serious delay in the implementation of the sub-project has been due to long involved procedure in obtaining a building permit. As a result of environmental objections from adjacent poultry breeding farms, the subproject has been delayed by a further 6 months with the completion date now scheduled for December 31, 1983. The final cost will probably be even higher than Din 116 million due to inflation, and also due to further delays which have occurred since construction started.

5.06 It appears that many if not all of these problems could have been avoided if adequate supervision of implementation and effective appraisal procedures had been carried out by the VB and PB. The above example also highlights the lack of technical expertise available to VB and PBs on agroindustries. It is recommended that for on-going sub-projects of this type, 'within country' consultants with expertise and competence be employed by VB and the PBs to advise on appraisal and to assist in project implementation. The 'in house' technical expertise available to some of the PBs is inadequate. But more important are the fundamental changes needed in the Yugoslav banking system. Unless the banks become more development oriented, they cannot be expected to recognize the importance of supervision of the projects. The creation of a Specialized Agriculture Bank in Serbia and the establishment of a cadre of trained Agricultural Credit Officers at commune level in Kosovo are steps in the right direction.[1/]

1/ Additional observations on this by VB and Regional staff are provided under Borrower comments (PPAM Attachment 2, page 3).

5.07 Basic Banks. After January 1978, the basic banks became the core of the restructured banking system./1 Of the 8 PBs, ZBZ (Croatia) is the only basic bank. The other 7 PBs are all associated banks. The distinct roles and responsibilities of the Associated Banks and the basic banks in Yugoslavia are not clearly defined. The basic banks were not totally committed to project implementation. The basic banks can play a major role in the appraisal and supervision of the subprojects if they can exercise more authority over the investors. In future projects, it is important that the specific roles and responsibilities of the Basic Banks are clearly defined and the supervision effort is coordinated at all levels i.e. VB, PBs, Basic Banks and the Zadrugas.

5.08 Sub-borrowers. In the social sector investments, major deficiencies are (a) delays due to frequent changes in the investors' requirements such as,increases in capacity, changes in product processing and process layout, and design changes due to 'improvements' in items of equipment. Grain Dryers and Dukat Compost Plant are examples of delays due to changes in investor's decisions. It should be possible to freeze the process design early in the design phase of implementation, which would avoid delays and hence overall investment costs; (b) maintenance of facilities is poor. The attitude is that obsolescence is inevitable and that it is better to obtain credits to purchase a new and more modern item of equipment than to spend resources on maintenance. Cold store doors are an example of poor maintenance with ice build up at the sills because electrical door seal heating circuits are not operating, thus leading to door damage when being freed to open; and (c) in general, efficiency is relatively low due in large part to over-investment, output maximizing production policies, and lack of financial discipline and management skills.

5.09 The sub-borrowers in the individual sector frequently withdrew their credit requests. Changes in the decisions of the farmers were on account of frequent changes in input-output price parities. The agricultural output prices are kept low, which adversely affects the viability of investments and discourages future investment. The inadequate input distribution system also adversely affects the farmers' investments. Undoubtedly, there have been shortages of construction materials. But distribution problems have been one of the factors which have caused local, regional and republic shortages as distinct from economy-wise shortages. Invariably, breeding stock and construction materials are not planned for in advance. With better resource planning and forward ordering of materials of this type, some of the problems

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/1 The Federal Banking Law established a three-tier organizational commercial banking structure consisting of internal banks, basic banks, and associated banks, also introducing new forms of specialized association such as banking consortia and self-management funds of associated labor. The internal bank is essentially a service organization established as a legal entity through a self-management agreement by two or more basic organizations of associated labor (BOALs) within a working organization. The basic bank is the only banking organization which carries out all kinds of credit and banking operations in Yugoslavia. An associated bank is established as a legal entity through a self-management agreement of two or more basic banks. Associated banks are formed mainly to concentrate resources for financing major investments and to carry out foreign business transactions on behalf of their member basic banks.

of cows sheds being built but no livestock procured or vice versa can be avoided in future. The individual farmers are also reluctant to associate with the social sector[1/], which probably reflects the fear of social sector encroachment over the control of land ownership, or more plausibly is due to limited market orientation of private farms. Also because the countervailing power lies with the social sector, the individual farmers cannot be expected to cooperate with it. Cooperation can succeed only if the bargaining power of the individual sector is increased, and greater economic benefits accrue to the sector, via increases in its productivity, marketable surplus, and income.

VI. Financial and Economic Re-evaluation

6.01 The financial analysis has been carried out for all the major investments financed under the project, and for those investments which were projected to be extremely sensitive to changes in benefits and operating costs, at the time of appraisal. The financial rates of return (FRR) are based on actual investment and operating costs and revenues generated, and projected operating costs and benefits have been recalculated. Details on costs, revenues, and cash flows are presented in Annexes 7 and 8. All costs and benefits used are in constant 1982 prices. The FRRs for subprojects, estimated by the PCR mission are compared below with the appraisal estimates.

	Financial Rates of Return (%)	
Subproject	Appraisal Estimates	PCR Mission Estimates
Individual Sector:		
Dairy Farms	20	15
Vineyards	23	10
On-farm mechanization	20	11
Social Sector:		
Dairy farm	14	-11
Cattle Fattening	17	6
Drainage	22	31
Cold Store	18	21
Grain Dryer	28	5

1/ The key form of cooperation between the social and individual sectors has been through the Zadrugas (Cooperatives) and Basic Organization of Contract Farmers. Both these organizations consist of groups of individual farmers who choose to associate either on a long- or short-term basis. It is through this mechanism that the individual farmers can have access to technical know-how, credits, inputs, and most importantly, to markets. Despite the apparent benefits to be gained by cooperating with the social sector, individual farmers have been reluctant to associate.

The Table indicates that all subprojects, with the exception of drainage and coldstore subprojects, recorded a decline in their financial rates of return. The reasons, as mentioned earlier, are Government policies with regard to pricing—for instance, a greater increase in the concentrate price relative to the price of milk—delays in fully stocking the facilities, and very high labor costs in the social sector investments. Dairy farms are more profitable in the individual than in the social sector (see para 4.23). This comparative advantage is being taken into consideration in designing future projects. A better without project situation than that estimated at appraisal affected the financial rates of return of vineyards and on-farm mechanization, though the grape yields, and crop yields from mechanization are higher than projected at appraisal. The major reasons for the unsatisfactory financial performance of the grain dryers are high labor and fuel costs and increased investment costs which could have been reduced had the appraisal concept of using direct hot air, rather than the indirect method of drying grain been adopted (See Annex 10). Similarly, the investment and operating costs of the cold store could have been reduced, and the storage efficiency improved, had larger cold storage rooms been constructed.

Economic Impact

6.02 Yields/Incremental Production. In the individual sector, the milk production per average cow, and the crop and fruit yields have been higher than projected at appraisal. The nation-wide average crop yields on the farms participating under the project are also greater than the yields obtained for the control group (the households permanently surveyed by a Yugoslav institute) in Serbia, but slightly lower than the yields obtained for the control group in Vojvodina. The incremental annual production of maize on project farms with mechanization and/or land improvement in the individual sector alone is 45.2 thousand tons, which compares favorably with the appraisal estimate of total incremental production in both sectors of 53.3 thousand tons of maize. In the social sector, however, total milk production has failed to come up to expectations due to delays in fully stocking the facilities. As a result, the incremental production of milk at full development, from both the sectors, is 82.8 million liters, compared to the appraisal estimate of 93.0 million liters. The daily growth rate of fattened cattle in social sector is also much less than planned. However, the drainage subprojects in the social sector have obtained a marked increase in crop yields and are obtaining yields greater than the projected levels (See Annex 4).

6.03 Land Ownership Structure. The land ownership structure of individual sector farms participating in the project is as follows:

Land Ownership

Farm Size	Participation (%)		Average Farm Size	
	All Farms	Sub-borrowers	All farms	Sub-borrowers
Up to 2 ha	30.8	9.4	1.05	1.08
2-3 ha	16.4	6.1	2.55	2.69
3-5 ha	22.4	17.9	4.02	4.22
5-8 ha	17.6	33.8	6.31	6.80
Above 8 ha	12.8	32.8	12.44	13.00
Yugoslavia	100.0	100.0	4.34	7.58

This table indicates that about 67% of the sub-borrowers under the project own farm holdings, each larger than 5 ha. The average farm size of the sub-borrower is 7.58 ha compared to Yugoslav average farm size of 4.34 ha. This probably reflects that the sub-borrowers under the project are mostly those farmers who are long-term cooperants with the social sector (See Footnote, pp 24), and the large sized holdings are intrinsic to the types of investments (mechanization) undertaken in the project.

6.04 Beneficiaries/Employment. Total number of farm families benefitting directly from subloans is 13,476, compared to the appraisal estimate of 10,200 direct beneficiaries. The project's contribution to employment is substantial. About 276 new jobs were created in the social sector. In addition, there is also increased employment of hired seasonal labor, and increased family labor requirements on participating farms, which has reduced under-employment and pressure to migrate.

6.05 Foreign Exchange Effect. Most of the incremental production due to the project has been used to satisfy domestic consumption needs. At appraisal, it was expected that the project, over its 20 year life time would generate about $115 million in foreign exchange through increased exports. No assessment can be made about the project's success in achieving export targets, as no estimates on annual incremental exports earnings are available. However, the increased self-sufficiency in wheat and industrial crops should enable the country to reduce imports, and result in savings in foreign exchange.

6.06 Economic Analysis. Quantifiable benefits include (i) incremental production; (ii) reduction of grain losses from grain dryers; and (iii) value added by the cold storage investment. Costs quantified include all investment and operating costs, excluding transfer payments such as taxes and duties. The outputs of wheat, maize, sugarbeet, soyabean, and beef, and the inputs of fertiliser and concentrate feed have been priced as tradeables based on their border equivalent values with adjustment for quality differentials and transportation, as appropriate. Economic prices for these tradeables have been based on World Bank Commodities and Export Projections Division's historical and forecast prices (in constant 1982 terms). Prices of grapes are based on the average unit value of Yugoslav exports. At appraisal, the prices of wheat, maize, beef and feedgrains were projected on the basis of the Bank's commodity price estimates. The economic price of milk has been obtained by reducing the appropriate subsidy, as done at appraisal. However, the family labor has been costed as an operating expense, and the shadow wage rate used ranges from .4 to .7 of average social sector net personal income varying in different Republics/Provinces, depending where the majority of the investment

is. At appraisal, the family labor was not treated as an operating cost.[1/] The investment costs have been adjusted by the civil works and the equipment specific conversion factors applicable in each year. After deriving the rates of return for the subprojects and phasing their participation in the project, the aggregate economic rate of return (ERR) of the project is re-estimated at 15% compared to 27% appraisal estimate.[1/] In Yugoslavia, where the opportunity cost of capital is assumed to be 12%, the completed project is economically viable.

VII. Bank's Performance 2/

7.01 Bank's initiative in making the government recognize the importance of sectorally balanced economic growth, with due importance to agricultural development projects, and in inducing the government to shift its emphasis from predominantly large-scale investments to smaller subprojects throughout the country was timely and constructive. The Bank also had a significant impact on Yugoslavs in their recognizing the importance of the individual sector development. Bank funds under the project were earmarked for the individual sector. To the extent that the investments financed under the project were located in Republics/Provinces which had a comparative advantage in specialising in those types of investments, the Bank helped in avoiding the inefficiencies associated with compromises in investment allocation which are struck to accommodate different economic interests of individual Republic/Provinces.

7.02 Bank's influence on policy matters and other issues was significant. The interest rates for investments in agriculture in Yugoslavia varied depending upon Republic/Provinces and type of investment. The initial proposal of uniform on-lending interest rates, which were to apply regardless of the purpose of the loan and the sources of funds for lending, was a major recommendation and was accepted at the decision meeting. However, during negotiations, the Bank accepted the Yugoslav position that interest rates do not play any role in resource allocation in a socialist economy. The agreement of the Bank not to insist on a uniform interest rate regime continues to have negative consequences on resource allocation in the Yugoslav economy. However, as a result of studies on interest rates done by the Yugoslavs, as part of the First and Second Agricultural Credit projects, and

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1/ The economic rates of return for each subproject were not presented in the Appraisal Report. The PCR mission has estimated the ERRs, and Net Present Values in Din Million in parentheses, as follows:
Individual Sector: Dairy Farms: 14% (95.6);
Vineyards: 19% (120.6); Mechanization: 23% (241.3);
Social Sector: Dairy Farms: -0.4% (-342.4);
Cattle Fattening: 20% (69.9); Drainage: 26% (336.2);
Cold Store: 18% (94.8); Grain Dryer: 4% (-31.0).
If family labor were treated as at appraisal, the ERR would be higher than 15%, as the project is sensitive to changes in operating costs. However, the conservative estimate of ERR is presented in the report, because the project is equally sensitive to changes in benefits.

2/ For additional observations by VB and Regional staff, see Borrower comments (PPAM Attachment 2, page 2).

as a result of Bank's subsequent strong stand, for the first time in 1980 the Yugoslavs acknowledged that interest rates do play a role in resource allocation. Such an agreement by the Yugoslavs was a prerequisite to any significant changes in interest rate policy and was a major achievement by the Bank. Since then, the Bank has succeeded in persuading the Yugoslav authorities to move the overall interest rates higher and to more realistic levels. In more recent Bank-financed projects, Serbia and Kosovo regional development projects, Bank has obtained assurances from the Yugoslavs that the on-lending interest rates on both the Bank loan proceeds and the local bank funds would be at least 18%, and would be subsequently adjusted to be in line with the inflation rate in Yugoslavia. However, along with the funds lent by the domestic banking system, there are also "Special Funds" in the less developed regions which continue to be lent at highly concessional interest rates.

7.03 Bank staff's input in the design and preparation of the project was also significant. The decision that it would be a credit project rather than a line of credit, which involved the Bank earmarking its funds for major investment purposes and the Bank appraising the major investments, was a correct decision by the Bank. During the preparation phase, Bank's decisions to have fewer Yugoslav commercial banks participate in the project, and to widen the scope of the project from a mere increase in the production of 5 major commodities as outlined in the Green Plan to a channel of assistance for the entire agricultural sector, were correct decisions. The time spent on the preparation phase of the project was reasonable. Some of the initial data requirements of the Bank, to assess the creditworthiness of various local banks were extensive, particularly at a time when the Bank did not even know which banks would be participating in the project. However, the Bank on recognizing the limitations of the local banks, in providing such extensive information, simplified the data requirements.

7.04 The appraisal mission recognised the organizational and technical limitations of the Borrower and the PBs, and reduced the project scope so that it would be in conformity with the capability of the local banks to appraise subprojects and to process subloans. However, in retrospect, it appears that despite the Bank's assistance with staff reinforcement and training, the development of the institutional capacity took much longer than anticipated (see paras 5.02-5.04). The Bank did not have much of an impact on regional and sectoral allocation of loan proceeds. The decision on allocation was taken by the Republics/Provinces, but it was based on the development priorities and the income distribution objectives. Over the repeater credit projects, however, the Bank has succeeded in getting the Yugoslav authorities to allocate a larger share of loan proceeds for both the less developed republics and the individual sector.

7.05 Supervision of the project was adequate. Missions had staff continuity and technical specialists, and inclusion of new members complemented their efforts. Supervision missions initially assisted the Borrower and the PBs in appraisal procedures, with interpretation of the Loan Agreement, disbursement procedures, and in the preparation of the tender documents. This helped considerably in the implementation of the future projects. The Bank's contribution in making the PBs give special emphasis to market analyses and employment effects in the sub-project appraisal reports was noteworthy. The Bank also succeeded, though to a limited extent, in encouraging the local banks to simplify loan procedures for the individual

sector. The Bank's flexibility in reallocation of loan proceeds from the social sector to the individual sector, resulted in 46% of Bank loan proceeds being invested in the individual sector, compared to 43% projected at appraisal. The Bank recognised the realities of the slow start-up of the project due to slow initial development of institutional capacity, and the problems that the project encountered during the implementation years. It was therefore flexible in extending the loan closing date.

7.06 The Bank's impact on institution building has been quite significant in a few Republics/Provinces, where the PBs have started replicating the appraisal procedures used in the Bank-financed projects, to other locally-financed larger projects. However, in some of the Republics/Provinces, the Bank's impact on institutional development has been limited to the project units. Such project units have become isolated enclaves within the Banks. The units have been used for the repeater projects. However, it is important that the Bank should now reassess these project units, and design methods of either shifting the responsibilities to other units within the local banks or recommend a more practical approach which is to make project units do the appraisal, procurement, and supervision jointly with other divisions within the local banks. In more recent Bank financed projects, the Bank has started recommending such organizational changes within the local banks, which should provide a more effective institutional assistance.

7.07 Greater in-depth supervision is required by the Bank, particularly for nationwide credit projects. The supervision mission should visit just 1 or 2 Republics, and reassess particularly the technical and organizational aspects of the project. A review of the sub-project appraisals, particularly the ones done by the local banks and not sent to the Bank for its review, is extremely important. The mission got an impression that many of the appraisals of individual farm investments were carried out by simply reusing the pre- and post-subproject data provided in the Staff Appraisal Report. Many of the loans for farm mechanization were not effectively appraised.

7.08 The Bank instituted the monitoring and evaluation (M&E) system for the project, even though it was not originally included in the project design. The costs of the M&E system are reasonable for the Borrower, and its benefits are great, as it analyses the investments and their impact on agricultural production, productivity, and farm incomes. The Bank's technical assistance for the establishment of the M&E system was adequate, but the M&E reports were not always adequately reviewed in the Bank. The Bank now needs to ensure that not only the sampling techniques and statistical analyses are correct, but also that the M&E system serves a more useful purpose for the post evaluation (see Annex 9). The M&E system established under several Bank-financed projects in Yugoslavia probably needs a mid-term, in-depth review.

VIII. Lessons Learned and Outstanding Issues

8.01 Some of the lessons learned are described below.

8.02 The Bank's impact on institutional development should be more pervasive, and not confined to project units alone as in some Republics. The project units should be required to do appraisal, procurement, and supervision of subprojects, both Bank-financed and other investments, jointly with other divisions within the local banks. If the 'in-house' technical expertise available to the PBs is inadequate, 'within country' consultants with expertise and competence should be employed by PBs to advise on appraisal and assist in project implementation. In more recent Bank-financed projects, the Bank has started re-assessing the organizational arrangements within the Yugoslav banks. In the Kosovo Regional Development Project, the Bank has obtained assurances that the Borrower would employ a development banking advisor, establish a cadre of trained Agricultural Credit Officers in the communes, recruit an international consultant who would prepare a training program, and employ a full-time training officer who would be responsible for implementing the training program.

8.03 Greater in-depth supervision is required by the Bank. In such a nationwide credit project, Bank missions should visit just 1 or 2 Republics, and spend more time visiting the subprojects, the basic banks, and the organizations, particularly the organizations involved in providing credit to individual farmers. The Bank is now undertaking mid-term project evaluations, as part of supervision.

8.04 The Borrower should prepare and appraise a sufficient number of subprojects, prior to the negotiations of the loan. This would help start project implementation immediately after loan signing, and speed the disbursement rates. Detailed identification of sub-borrowers prior to negotiations is being insisted upon by the Bank, and all major subprojects are now being appraised by the Bank, to reduce risks.

8.05 No further livestock projects should be undertaken in the social sector, with the exception of the production of quality breeding stock in the poultry and pig industries.[1/] The Bank and the Yugoslavs have recognized the inherent advantage of encouraging labor-intensive livestock production in the individual sector. Owing to high labor costs and overheads, returns from livestock projects in the social sector are poor. In the individual sector, however, by using family labor and by providing additional employment for under-employed farm workers, high marginal financial returns can be obtained from small livestock enterprises. In addition the small individual sector farms can also obtain cheaper feed by using crop by-products such as maize stalks, at little cost. The same crop by-products are expensive to collect, transport and store on the large social sector enterprises. Intensive livestock industries such as dairying, beef fattening and pig production respond well to close personal involvement from those responsible for looking after them. This involvement is provided in the individual sector but is difficult to achieve with large enterprises in the social sector. Future Bank-financed projects should place emphasis on pasture development programs and on drainage. In the agroindustries subsector, the emphasis should be on better maintenance of existing facilities, training and improving the financial discipline and management skills. Better resource planning and forward ordering of materials, particularly construction materials and breeding stock, and better input distribution system should relieve regional and local shortages.

1/ VB disagrees (PPAM Attachment 2, page 3).

8.06 The agricultural pricing policy in Yugoslavia has affected the viability of investments and discouraged future investment leading to inefficiencies. For instance, with respect to dairying, the major problem was the decline in the real price of milk vis-a-vis fodder costs. While this may reflect long-term price trends throughout the world, the completion mission believes that it was an imbalance caused by the price fixing mechanism. A thorough review of the future of dairy production in Yugoslavia is required, and long-term price adjustments made to ensure that the dairy industry is heading in the right direction. In future Bank projects, the emphasis which should be given to livestock production depends on the long-term plan for the livestock industry with prices adjusted accordingly. Long-term input-output price trends in Yugoslavia are being analysed within the Bank.

Issues

8.07 The Bank has to be more insistent and tougher on supervision by the PBs. The Yugoslav banks, both associated and basic banks, should be induced to undertake comprehensive regular supervision. The Borrower should be requested to attach to future progress reports a detailed report enumerating date, number, and kind of field visits including comments on the project's impact in achieving its stated objectives. Greater coordination of supervision efforts by VB, PBs, Basic Banks, and the Zadrugas is required. Separate staff may have to be assigned by the local banks for effective and continuous supervision of the on-going subprojects. But more important are the institutional reforms needed in the Yugoslav banking system, which will enlarge their authority over the investors and make them more development oriented. Unless such reforms are undertaken, the Bank may continue to have a limited impact in inducing Yugoslav banks to undertake regular supervision.

8.08 The roles and responsibilities of the Basic Banks and the Associated Banks have to be clearly defined. A banking expert on preparation missions should be able to clarify the role of the basic banks in both the appraisal and the supervision of investments. Greater involvement of basic banks in future Bank financed projects is absolutely essential for the successful implementation of the projects.

8.09 Lack of cooperation between the individual and social sectors continues to be an issue. The individual farmers can have access to technical know-how, credits, inputs, and markets, only through the mechanism of cooperation. Despite the apparent benefits, the individual farmers have been reluctant to associate. A specific program needs to be developed to enhance the cooperation between the two sectors.

8.10 The Monitoring and Evaluation Reports appear to give an impression that there has been over-tractorization in Yugoslavia. With the relative decline in the real value of agricultural output, and the higher standard of living expected by the people, maintaining and increasing the agricultural production in the Individual Sector can only be achieved by marked increases in the output per worker. Without mechanization, such an increase is impossible. Before the Bank shifts its emphasis in lending away from any further mechanization in Yugoslavia, a thorough study needs to be done to check whether or not mechanization can be justifiably excluded and such a study should analyse the net labor displacement, if any, resulting from

mechanization. It is easy to conclude that tractors are being purchased by farmers for purely social reasons, and that there are already sufficient tractors in the country by comparing it to other places in Europe. However, the small, intensive, and diversified farms in Yugoslavia will have a different pattern of optimum tractor requirements than would be found in countries with larger farms, and where agriculture is mainly on large areas of arable land.

8.11 The monitoring and evaluation system needs to be modified. The pre-project situation for the sub-borrowers should be determined, and the subprojects starting in different years should be differentiated. A more useful survey can be undertaken by sub-sampling a limited number of Project beneficiaries in detail so that full data, including the pre-project situation is determined, and by collecting only key indices from the balance of the surveyed sub-borrowers.

ANNEX 1

YUGOSLAVIA

FIRST AGRICULTURAL CREDIT PROJECT

LOAN 1129-YU

Project Completion Report

Actual Project Costs

	1976	1977	1978	1979	1980	Total	1976	1977	1978	1979	1980	Total
	Din '000						US$ '000 /1					
Individual Sector												
Livestock Production	286	131,066	129,142	280,117	166,649	707,260	15.7	7,146.4	6,902.3	14,650.5	5,878.3	34,593.2
Vegetable Production	4,500	4,000	27	6,238	-	14,765	246.6	218.1	1.4	326.2	-	792.3
Fruit Production	1,858	23,456	23,018	45,156	45,595	139,083	101.8	1,279.0	1,230.3	2,361.7	1,608.3	6,581.1
On-farm Mechanization	16,599	91,173	86,176	2,154	152,216	348,318	909.5	4,971.3	4,605.9	112.7	5,369.1	15,968.5
Land Development	-	-	7,320	-	-	7,120	-	-	391.2	-	-	391.2
Sub-Total	23,243	249,695	245,683	333,665	364,460	1,216,746	1,273.6	13,614.8	13,131.1	17,451.1	12,855.7	58,326.3
Social Sector												
Livestock Production	-	110,434	222,043	85,206	278,425	696,108	-	6,021.5	11,867.6	4,456.4	9,821.0	32,166.5
Vegetable Production	-	23,558	6,542	48,978	48,586	127,664	-	1,284.5	349.6	2,561.6	1,713.8	5,909.5
Land Reclamation	18,852	97,599	97,903	86,933	173,236	474,523	1,033.0	5,321.6	5,232.7	4,546.7	6,110.6	22,244.6
Agroindustries	-	19,146	27,979	41,163	201,213	289,501	-	1,043.9	1,495.4	2,152.9	7,097.5	11,789.7
Sub-Total	18,852	250,737	354,467	262,280	701,460	1,587,796	1,033.0	13,671.5	18,945.3	13,717.6	24,742.9	72,110.3
Total Project Costs-Actual	42,095	500,432	600,150	595,945	1,065,920	2,804,542	2,306.6	27,286.3	32,076.4	31,168.7	37,598.6	130,436.6
Percent of Total Investment-Actual	1.5	17.8	21.4	21.3	38.0	100.0	1.8	20.9	24.6	23.9	28.8	100.0
Total Project Costs -Appraisal	779,694	1,199,407	145,899	-	-	2,125,000	45,864	70,554	8,582	-	-	125,000
Percent of Total Investment-Appraisal	37.0	56.0	7.0	-	-	100	37.0	56.0	7.0	-	-	100.0

1/ Average Annual Exchange rates : 1976: $1=Din 18.25; 1977:$1=18.34; 1978: $1=18.71; 1979: $1=19.12; 1980: $1=28.35.

YUGOSLAVIA

FIRST AGRICULTURAL CREDIT PROJECT

LOAN 1129-YU

Project Completion Report

Bank Loan Proceeds - Planned Allocation and Actual Utilization
(US$'000)

Type of Investment	Vojvodina		Serbia		Montenegro		Kosova		Slovenia		Bosnia-Herzegovina		Macedonia		Croatia		Total		Percent Utilized
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	
Individual Sector																			
Livestock production	1,500	1,470	4,118	3,521	250	500	975	730	1,300	1,311	2,479	2,161	900	73	2,050	3,580	13,572	13,346	98
Vegetable production	300	-	290	-	100	-	-	-	-	-	-	-	270	167	738	135	1,698	302	18
Orchards	-	-	668	345	-	-	64	-	-	-	-	-	180	341	-	-	912	686	75
Vineyards	150	0	376	1,231	-	-	131	315	-	-	-	-	270	330	984	809	1,911	1,985	104
On-farm mechanization	1,050	1,568	348	2,069	150	-	130	128	-	-	1,221	1,466	180	875	-	-	3,079	6,106	198
Land Development	-	-	-	-	-	-	-	-	-	-	-	-	-	-	328	162	328	162	49
Sub-Total	3,000	3,038	5,800	7,166	500	500	1,300	1,173	1,300	1,311	3,700	3,627	1,800	1,786	4,100	3,986	21,500	22,587	105
Social Sector																			
Livestock production	2,640	2,487	1,634	2,335	110	140	824	957	1,020	802	1,394	1,383	825	331	2,684	2,344	11,131	10,779	97
Vegetable production	1,600	1,507	304	-	-	-	110	-	-	-	-	-	495	-	610	637	3,119	2,144	69
Irrigation	3,180	2,917	-	-	-	-	-	-	-	-	-	-	488	422	-	-	3,668	3,339	91
Drainage	-	-	-	-	-	-	-	-	680	887	-	-	-	-	1,964	1,772	2,644	2,659	101
Land Development	-	-	380	-	60	60	110	-	-	-	-	-	832	1,762	842	1,202	2,224	3,024	136
Grain Drying facilities	1,049	1,373	-	-	-	-	-	-	-	-	-	-	165	-	-	-	1,214	1,373	113
Milk Collection centers	-	-	1,482	-	30	-	56	-	-	-	306	295	165	766	-	-	2,039	1,061	52
Cold Storage facility	2,131	2,291	-	-	-	-	-	-	-	-	-	-	330	-	-	-	2,461	2,291	93
Sub-total	10,600	10,575	3,800	2,335	200	200	1,100	957	1,700	1,689	1,700	1,679	3,300	3,281	6,100	5,955	28,500	26,671	94
Both Sectors	13,600	13,613	9,600	9,501	700	700	2,400	2,130	5,000	3,000	5,400	5,306	5,100	5,067	10,200	9,941	50,000	49,258	99

ANNEX 2

LOAN 1129-YU

Project Completion Report

Physical Capacities - Projected and Actual

Type of Investment	Unit	Vojvodina	Serbia	Montenegro	Kosova	Slovenia	Bosnia - Herzegovina	Macedonia	Croatia	Total Achieved	Total Planned	Percent Achieved
Individual Sector												
Livestock Production												
Cattle Sheds	No.	599	727	82	133	234	331	29	740	2,875	-	-
Purchase of in-calf heifers/dairy cows	No.	393	2,945	400	450	107	-	51	486	7,906	13,000	61
of which imported	No.	-	981	400	180	-	-	-	-	1,561	-	-
Purchase of ewes	No.	4,038	-	-	-	-	4,486	2,274	-	10,798	55,000	20
Purchase of gilts	No.	457	-	-	-	-	-	-	-	457	-	-
Vegetable Production												
Mixed vegetable prod.	ha	-	-	-	-	-	-	-	157	157	1,000	16
Plastic green houses	ha	-	-	-		-	-	17	-	17	40	43
Fruit Production												
Orchards	ha	-	445	-		-	-	103	-	548	400	137
Vineyards	ha	-	596	-	105	-	-	164	51	916	850	108
Land Development	ha	-	-	-		-	-	-	1,850	1,850	1,200	154
On-farm Mechanization												
Tractors	No.	536	626	-	48	55	1,189	334	264	3,052	400	763
Social sector												
Livestock Production												
Cattle stalls	No.	2,910	400	112	1,450	520	982	-	3,500	9,874	-	
Purchase of in-calf heifers/dairy cows	No.	492	146	112	-	30	776	416	200	2,172	5,600	39
of which imported	No.	492	135	112	-	30	776	52	200	1,797	1,400	128
Cattle heads per batch	No.	-	4,500	-	1,600	-	-	-	1,050	7,150	7,500	95
Vegetable production	ha	4,407	-	-	-	-	-	-	2	4,409	4,000	110
Land Reclamation												
Irrigation	ha	3,307	-	-	-		-	1,448	-	4,755	7,600	63
Drainage	ha	-	-	-	-	1,228	-	-	13,328	14,556	8,400	173
Land Development	ha	-	-	290	-	-	-	8,350	14,586	23,226	9,800	237
Agroindustries												
Grain Drying (6)	tons/hour	162	-	-	-	-	-	-	-	162	333	49
Milk Collection (148)	litres/day	-	-	-	-	-	232,700	41,250	-	273,950	480,000	57
Cold Store	tons	10,000	-	-	-	-	-	-	-	10,000	6,800	147

YUGOSLAVIA
First Agricultural Credit Project
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Project Completion Report

TECHNICAL COEFFICIENTS[1]
Individual Sector

		PROJECTED[2]					REALIZED[3]			
	Year	1	2	3	4	Full Development	1978	1979	1980	1981
DAIRY - Calving rate	%	80	80	80	80	80	-	-	74.5	80.0
- Production per av.cow	l.	2000	2400	2500	2600	2800	-	-	2957	2970
SHEEP - Lambing rate	%	85	85	90	90	90	-	-	89.8	
VINEYARDS -Grapes	t/ha	-	-	3	6	10	-	-	7.41	7.55
RASPBERRIES - Fruit	t/ha	1.4	3.4	6.4	6.4	6.4	-	-	5.58	4.54
MECHANISATION - Wheat	t/ha	2.9	3.2	-	-	3.5	3.64	4.24	4.17	-
- Maize	t/ha	4.0	4.5	-	-	5.0	5.83	6.34	6.57	-
- Alfalfa	t/ha	8.0	8.5	-	-	9.0	9.47	8.86	6.44	-
- Cows	No./farm	2	3	-	-	3	2.08	3.44	3.68	-
- Pigs	No./farm	10	50	-	-	100	1.64	10.92	12.21	-
- Hens	No./farm	25	25	-	-	25	19.44	72.38	76.58	-
LAND DEVELOPMENT[4]										
- Wheat	t/ha	-	-	-	-	3.2	-	4.77	5.14	-
- Maize	t/ha	-	-	-	-	4.7	-	7.61	6.07	-
- Sunflower	t/ha	-	-	-	-	1.44	-	2.60	-	-
	Year	5	6	7	8	Full Development				
CHERRIES		3.6	4.6	6.0	7.0	9.0	-	-	2.30	4.71

1/ This table includes yield data only for crops where information is available in both the Appraisal Report and from the survey undertaken by the consultant.
2/ Source: Staff Appraisal Report.
3/ Yields given are the average for surveyed farms in that year and do not differentiate between development programs started in different years. They do not show the yield progression.
4/ The Evaluation Report included all land development projects together.

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TECHNICAL COEFFICIENTS[1/]
Social Sector

		PROJECTED[2/]			REALIZED[3/]			
	Year	1	2	Full Development	1978	1979	1980	1981
DAIRY - Calving rate	%	95	90	90	82	79	73	
- Milk per average cow/year	l.	4210	4100	4500	5002	5193	5197	5176
CATTLE FATTENING - Daily growth rate	g/day			115			96.5	
VEGETABLES - Peas	t/ha	3.0	4.0	5.0	4.0	5.7	5.9	
- Beans	t/ha	3.6	4.8	6.0	7.0	6.6	5.6	
- Tomatoes	t/ha	29.0	38.0	48.0	42.8	41.8	16.3	
LAND DEVELOPMENT	Irrigation North	Irrigation South	Drainage Open/Closed	Non Irrigated	All Land Development Projects[4/]			
	..... Full development. t/ha				..... t/ha			
- Wheat	5.5	4.3	3.8	3.02	4.70	4.59	3.82	
- Maize	6.0	5.6	4.5	5.62	6.40	5.35	5.12	
- Sugarbeet	60.0	50.0	40.0		39.31	47.36	39.80	
- Alfalfa	15.0			7.37	6.01	4.10	6.38	
- Maize silage	60.0	23.0	45.0	32.90		31.00	20.00	
- Barley		4.8			3.50	2.92	3.38	

1/ This table includes yield data only for crops where information is available in both the Appraisal Report and from the survey undertaken by the consultant.
2/ Source: Staff Appraisal Report.
3/ Yields given are the average for surveyed farms in that year and do not differentiate between development programs started in different years. They do not show the yield progression.
4/ The Evaluation Report included all land development projects together.

YUGOSLAVIA

FIRST AGRICULTURAL CREDIT PROJECT

LOAN 1129-YU

Project Completion Report

Prices - Appraisal and Actual (Dinars)

Major Outputs/Inputs	Units	Appraisal: Individual Sector	Appraisal: Social Sector	Actual	
Milk	litre	4.00	4.00	4.95-18.10	/1
Cattle-fattened	kg	-	-	27.15-113.93	/1
Hogs-fattened	kg	-	-	67.20	/2
Wheat	kg	2.30	2.40	2.88-12.72	/1
Maize	kg	1.50	1.70	3.11-10.44	/1
Sugarbeet	kg	0.40	0.40	0.66-2.17	/1
Alfalfa	kg	0.80	0.80	2.50	/2
Wheat Seed	kg	5.40	5.40	3.42-9.20	/2
Maize seed	kg	6.00	6.00	39.92	/2
Grapes (table)		3.40	-	8.68-16.23	/1
Complex fertilizer (8:8:8)	kg	1.35	1.35	1.87-3.23	/3
Complex fertilizer (16:16:16)	kg	2.58	2.58	2.94-11.00	/1
Breeding Heifer	head	-	16,000.00	18,000-60,000	/2
Calves	kg	-	-	48.00	/2
Concentrate feed	kg	-	-	2.92-13.10	/1

/1 Range specifies current prices in 1978 and 1982.
/2 Prices used in 1980 Monitoring and Evaluation Report.
/3 Price in 1978 and 1980.

YUGOSLAVIA

FIRST AGRICULTURAL CREDIT PROJECT

LOAN 1129-YU

Project Completion Report

Disbursements - Appraisal and Actual
(US$ Million)

IBRD Fiscal Year and Quarter	Appraisal Estimate	Actual	Actual as a Percent of Appraisal Estimate
1976			
06/30/76	0.950	-	-
1977			
09/30/76	2.950	0.4	14
12/31/76	7.400	1.4	19
03/31/77	12.200	2.9	24
06/30/77	17.600	6.4	36
1978			
09/30/77	23.400	10.6	45
12/31/77	29.700	16.0	54
03/31/78	34.950	21.2	61
06/30/78	39.350	24.0	61
1979			
09/30/78	42.950	26.4	61
12/31/78	45.950	29.2	64
03/31/79	48.250	35.4	73
06/30/79	50.000	37.2	74
1980			
09/30/79	-	39.2	78
12/31/79	-	40.9	82
03/31/80	-	43.5	87
06/30/80	-	44.0	88
1981			
09/30/80	-	44.2	88
12/31/80	-	46.6	93
03/31/81	-	49.3	99

YUGOSLAVIA

First Agricultural Credit Project

Loan 1129-YU

Project Completion Report

Individual Sector

Dairy Farm

Cash Flow Statement

	PRE-PROJECT	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7-25
	din							
INVESTMENT								
Livestock		87084						
Building		363341						
Equipment		67451						
	0	517876	0	0	0	0	0	0
REVENUE								
Milk	87552	87557	179083	212816	213348	224837	249274	269817
Livestock	34024	33608	36468	50403	60897	60315	65813	71978
Insurance receipts	5250	5292	8669	9125	10138	11308	12218	13114
	126826	126458	224220	272344	284383	296459	327305	354909
OPERATING COSTS								
Concentrate	44990	46555	72190	82405	90651	96960	105044	113992
Other fodder	19409	20085	31144	35551	39108	41830	45317	49178
Other costs	19425	20101	31169	35579	39139	41864	45354	49217
Taxes	4139	4283	6642	7581	8340	8920	9664	10487
	87964	91024	141145	161116	177238	189574	205379	222875
CASH FLOW	38862	-482443	83075	111228	107145	106885	121926	132034
INCREMENTAL CASH FLOW	0	-521305	44213	72366	68283	68023	83063	93172

INDIVIDUAL SECTOR

DAIRY FARM

LIVESTOCK PROJECTION

		PRE-PROJECT	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7
Fertility	(%)	--	--	--	--	--	--	--	--
	Heifers	70	70	70	70	70	70	70	70
	Cows	80	80	80	80	80	80	80	80
Mortality	All stock	3	3	3	3	3	3	3	3
Cullins(%)	Heifers 0-1 yr	10	10	10	10	10	10	10	10
	Heifers 1-2 yrs	10	10	10	10	10	10	10	10
	Cows	20	20	10	15	20	20	20	20
Production (litres/ lactation)	Heifers	2400	2400	2800	3200	3200	3200	3200	3200
	Cows	3000	3000	3500	4000	4000	4000	4000	4000
STOCK AT START									
	Cows	2.00	2.00	3.70	3.75	3.77	3.59	4.02	4.43
	Heifers 2-3 yrs	0.40	0.40	0.42	0.57	0.57	1.15	1.21	1.20
	Heifers 1-2 yrs	0.46	0.49	0.66	0.66	1.32	1.39	1.38	1.51
	Heifers 0-1 yr	0.50	0.67	0.67	1.34	1.41	1.42	1.54	1.73
	Males 0-1 yr	0.50	0.47	0.47	0.81	0.85	0.85	0.92	1.02
		3.86	4.03	5.93	7.14	7.92	8.40	9.07	9.88
BIRTHS	Heifers	0.94	0.94	1.63	1.70	1.71	1.84	2.03	2.19
	Males	0.94	0.94	1.63	1.70	1.71	1.84	2.03	2.19
		1.88	1.88	3.26	3.41	3.41	3.67	4.06	4.38
PURCHASES	Cows	0.00	1.70	0.00	0.00	0.00	0.00	0.00	0.00
DEATHS	Cows	0.07	0.07	0.12	0.13	0.13	0.14	0.16	0.17
	Heifers 2-3 yrs	0.01	0.01	0.02	0.02	0.04	0.04	0.04	0.05
	Heifers 1-2 yrs	0.01	0.01	0.01	0.02	0.02	0.03	0.04	0.04
	Heifers 0-1 yr	0.03	0.03	0.05	0.05	0.05	0.06	0.06	0.07
	Males 0-6 yr	0.03	0.03	0.05	0.05	0.05	0.06	0.06	0.07
		0.15	0.16	0.25	0.27	0.29	0.33	0.36	0.38
SALES	Cull cows	0.33	0.33	0.25	0.43	0.62	0.58	0.65	0.72
	Cull heifers	0.05	0.05	0.07	0.07	0.13	0.14	0.14	0.15
	Hiefers 6 mnths	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
	Males 6 mnths	0.94	0.91	1.24	1.61	1.65	1.72	1.87	2.05
		1.56	1.53	1.79	2.35	2.65	2.67	2.90	3.15
Cows and heifers		2.40	2.40	4.12	4.33	4.34	4.74	5.23	5.63
Stock unit		3.27	3.38	5.24	5.99	6.58	7.04	7.63	8.28
MILK PRODUCTION	litres	5472	5472	11193	13301	13334	14052	15580	16864
Av. milk production per cow and heifer		2280	2280	2714	3073	3073	2967	2977	2995
MEAT SALES	kg lw./head	- - - - - - - - - - - - - - - - - - kg light - - - - - - - - - - - - - - - - - -							
Cull cows	350	115	115	86	152	218	201	226	251
Cull heifers	300	14	15	20	20	40	42	41	45
Hiefers 6 mnths	120	29	29	29	29	29	29	29	29
Males 6 mnths	150	141	137	185	242	248	258	281	307
		299	295	320	442	535	529	578	632

YUGOSLAVIA

First Agricultural Credit Project

Loan 1129-YU

Project Completion Report

Individual Sector

Vineyard 1 ha

Cash Flow Statement

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6-15
INVESTMENT COSTS		din					
	Materials	354288					
	Labour	49456					
	Machine services	52256					
Total		456000					
Yield	Kg/ha	0	0	3000	7000	10000	13000
INCOME	Grapes	0	0	39000	91000	130000	169000
OPERATING COSTS							
	Plant protection				10381	10381	10381
	Fertilizer				5741	5741	5741
	Other materials				1037	1037	1037
	Service expenses				15556	15556	15556
	Taxes				2078	2078	2337
	Labour (1)						
		0	0	0	34793	34793	35052
CASH FLOW		-456000	0	39000	56207	95207	133948
WITHOUT PROJECT (2)		30649	30649	30649	30649	30649	30649
INCREMENTAL CASH FLOW		-486649	-30649	8351	25559	64559	103299

(1) Family labour at 720 hours per hectare cost not included

(2) Maize	Income 4000 kg		41760
	Costs Materials	5870	
	Machinery	2593	
	Obligations	2648	
			11111
	Cash flow		30649
	(labour 300 hrs not included)		

YUGOSLAVIA

First Agricultural Credit Project

Loan 1129-YU

Project Completion Report

Individual Sector

Mechanization

Cash Flow Statement

	PRE-PROJECT	YEAR 1	YEAR 2-15
		Din'000	
INVESTMENT		178	
REVENUE			
Wheat	71	71	81
Maize	133	133	173
Potato	17	17	18
Tobacco	94	94	94
Lucerne	8	8	6
Fruit	51	51	51
Milk	53	53	94
Beef	15	15	27
Pigmeat	8	8	62
Poultry	5	5	21
	456	456	628
OPERATING COSTS			
Fertilizer	24	24	32
Machinery maint.			7
Fuel and oil			28
Concentrate	69	62	153
Other costs	34	34	47
Taxes	23	23	31
	150	142	298
CASH FLOW	306	135	331
INCREMENTAL CASH FLOW	0	-171	25

YUGOSLAVIA

First Agricultural Credit Project

Loan 1129-YU

Project Completion Report

Individual Sector

Mechanization

Yields, Prices and Land Use

Crop	Unit	Price Din	Pre-project (1) Area ha	Pre-project (1) Yield kg/ha	Post-project (2) Area ha	Post-project (2) Yield kg/ha
Wheat	kg	12.72	1.53	3640	1.53	4170
Maize	kg	10.44	2.52	5040	2.52	6570
Potato	kg	8.50	0.17	11743	0.17	12650
Tobacco	kg	94.00	0.59	1698	0.59	1698
Lucerne	kg	2.00	0.36	10500	0.36	8258
Fruit	kg	15.00	0.20	17110	0.20	17110
Unsown			0.09		0.09	
Meadows			0.25		0.25	
Pastures			0.29		0.29	
Forest			0.60		0.60	
			6.60		6.60	
			Livestock No.	Output /head	Livestock No.	Output /head
Milk	Litres	16.00	2.08	1600	3.68	1600
Beef	Kg livew.	113.92	2.08	65	3.68	65
Pigmeat	Kg livew.	85.00	1.64	60	12.21	60
Poultry	Eggs	5.39	19.44	50	76.58	50

(1) Assumes no change in land use. Yields are average yields for Individual Sector plus 40 %
(2) Yields, areas and stock numbers "Evaluation of the Economic Effects of Agricultural Project 1129 U, Final Report."

YUGOSLAVIA

First Agricultural Credit Project

Loan 1129-YU

Project Completion Report

Social Sector

400 cow dairy

Cash Flow Statement

	Year 1	Year 2	Year 3	Year 4	Year 5-20
	din'000				
INVESTMENT					
Buildings	72254				
Equipment	11999				
Livestock	22756				
Miscellaneous	5837				
	112847				
REVENUE					
Milk		36693	35354	37919	35725
Meat		9404	7866	8664	6157
		46096	43220	46583	41882
OPERATING COSTS					
Fooder		17569	20414	21358	20725
Personal Income		8266	7184	7949	6841
Obligations		1565	1360	1505	1295
Other Costs		14037	12199	13499	11617
		41437	41157	44311	40478
CASH FLOW (also incremental Cash Flow as no preproject activity)	-112847	4659	2063	2272	1404

NB. Investment costs, revenue and operating costs based on "Evaluation of the Economic Effects of Agricultural Project 1129U, Final Report"

YUGOSLAVIA

First Agricultural Credit Project

Loan 1129-YU

Project Completion Report

Social Sector

Beef fattening

Cash Flow Statement

	Year 1	Year 2-20
	din'000	
INVESTMENT		
Buildings	104229	
Equipment	31227	
Livestock	64880	
Other	7856	
	208192	
REVENUE		
Fat cattle	132013	237623
OPERATING COSTS		
Livestock	64880	116784
Fooder	41547	74784
Personal Incomes	5144	9260
Taxes	1671	3007
Other costs	8767	15780
	122008	219615
CASH FLOW	-198187	18008

NB. Investment costs, revenue and operating costs based on "Evaluation of the Economic Effects of Agricultural Project 1129U, Final Report"

YUGOSLAVIA

First Agricultural Credit Project

Loan 1129-YU

Project Completion Report

Social Sector

Drainage 1169 ha

Land Use, Yields, Prices

CROP	LAND USE Pre-project (ha)	LAND USE After-drainage (ha)	YIELD Pre-project (kg/ha)	YIELD After-drainage (kg/ha)	PRICE 1982 (Din/kg)
Wheat	362	419	3087	6000	12.72
Maize	397	400	5793	9500	10.44
Barley	270	0	2106	0	10.50
Oil seed	140	50	1814	2700	26.80
Sugar beet	0	300		55000	2.17
	1169	1169			

YUGOSLAVIA

First Agricultural Credit Project

Loan 1129-YU

Project Completion Report

Social Sector

Drainage 1169 ha

Cash Flow Statement

	PRE-PROJECT	YEAR 1	YEAR 2-25
	Din'000		
INVESTMENT		103,354	
REVENUE			
Wheat	14215	-	31978
Maize	24010	-	39672
Barley	5971	-	0
Oil seed	6806	-	3618
Sugar beet	0	-	35805
	51001		111073
OPERATING COSTS			
Fertilizer	1325	-	2955
Labour	2330	-	5460
Other costs	4060	-	11865
Taxes	90	-	1085
Maintenance	0	-	701
	7805		22066
CASH FLOW	43196	- 103,354	89007
INCREMENTAL CASH FLOW	0	- 146,550	45810

NB. Data based on information collected by mission from projects visited

YUGOSLAVIA

FIRST AGRICULTURAL CREDIT PROJECT

(Loan 1129-YU)

Project Completion Report

Social Sector Cold Storage Facility (10,000 tons) Including Processing

Income Statement /1

	YEAR 1	2	3	4	5	6
	Din '000					
REVENUE						
1. Fruit Processing	-	-	-	424,068	600,763	706,780
2. Cold Storage	-	-	-	31,848	28,256	32,800
3. Freezing	-	-	-	2,639	1,940	2,250
4. Loading and Unloading	-	-	-	2,617	2,415	2,800
Subtotal	-	-	-	461,172	633,374	744,630
OPERATING COSTS						
Raw Materials /2	-	-	-	220,680	312,630	367,800
Packaging Materials	-	-	-	62,250	92,438	108,750
Energy /3	-	-	-	32,799	39,359	43,732
Labour Skilled /4	-	-	-	9,376	9,376	9,376
Unskilled /4	-	-	-	3,462	3,462	3,462
Seasonal	-	-	-	10,544	11,130	11,716
Taxes and Contributions	-	-	-	12,128	16,658	19,584
Other Costs	-	-	-	33,330	37,064	39,499
Subtotal	-	-	-	387,569	522,117	603,919
NET INCOME	-	-	-	73,603	111,257	140,711

/1 Constant Prices-Base 1982 Deflator

/2 Throughput Fresh Paprika - 3,700 tons, Greenbeans - 4,000 tons, Carrots - 4,500 tons, Peas - 3,400 tons Strawberries - 3,700 tons

/3 Electricity average cost Din 2.50 per kWh and fuel Din 19.24 per kg.

/4 Permanent Staff.

YUGOSLAVIA

FIRST AGRICULTURAL CREDIT PROJECT

(Loan 1129-YU)

Project Completion Report

Social Sector Cold Storage Facility (10,000 tons) Including Processing

Investments /1

INVESTMENT ITEMS	YEAR 1	2	3	4	TOTAL
			DIN '000		
1. Civil Works	60,000	117,647	37,038	11,038	225,723
2. Equipment Including Installation	25,000	52,273	90,663	52,467	220,403
3. Other	10,000	2,273	2,207	1,333	15,813
Total /2	95,000	172,193	129,908	64,838	461,939

/1 Constant Prices-Base 1982.

/2 Missions assessment of breakdown of Civil Works Equipment and Other by years. Replacement costs are in Years 7 and 11.

YUGOSLAVIA

FIRST AGRICULTURAL CREDIT PROJECT

(Loan 1129-YU)

Project Completion Report

Social Sector Grain Drying Facility (32 tons per Hour)

Income Statement /1

	YEAR 1	2	3	4	5-15
	DIN '000				
REVENUE					
Maize /2	9,396	15,660	17,310	17,957	18,061
OPERATING COSTS					
Energy /3	5,855	9,759	10,787	11,191	11,255
Labour Skilled /4	800	800	800	800	800
Unskilled /4	120	120	120	120	120
Seasonal	517	517	517	517	517
Other Costs	554	554	554	554	554
Taxes and Contributions	1,000	1,000	1,000	1,000	1,000
Subtotal	8,846	12,750	13,778	14,182	14,246
NET INCOME	550	2,910	3,532	3,775	3,815

/1 Constant Prices-Base 1982

/2 Maize at 10,440 DIN per ton - 10% Annual throughput otherwise lost in storage

/3 Fuel oil @ DIN 19.24 per kg Electricity @ DIN 2.50 per kWh
Throughput 1977 (Yr 1) 9,000T, 1978 (Yr 2) 5,000T, 1979 (Yr 3) 16,580T, 1980 (Yr 4) 17,200T, 1981 (Yr 5) 17,300T. Energy costs for grain elevator have been deducted.

/4 Permanent workers including maintenance staff

YUGOSLAVIA

FIRST AGRICULTURAL CREDIT PROJECT

(Loan 1129-YU)

Project Completion Report

Social Sector Grain Drying Facility (32 tons per Hour)

Investments /1

	YEAR 1	2	3	TOTAL
	DIN '000			
INVESTMENT ITEMS				
1. Civil Works	8,590	8,218	3,600	20,408
2. Equipment and Installation	1,226	4,792	8,803	14,821
3. Other	1,904	1,318	320	3,542
4. Total /2	11,720	14,328	12,723	38,771

/1 Constant Prices-Base 1982.

/2 Missions assessment of breakdown of Civil Works, Equipment and Other by years. Replacement cost is in Year 10.

ANNEX 9

YUGOSLAVIA

FIRST AGRICULTURAL CREDIT PROJECT

LOAN 1129-YU

Project Completion Report

Monitoring and Evaluation

1. Monitoring and Evaluation (M&E) has been undertaken by the Borrower's consultant. The mission's opinions on the M&E system are discussed in the following paragraphs.

2. Data has been collected by a very extensive survey and by use of questionnaires which included almost one-third of the project beneficiaries. This large survey required the use of a large number of sub-enumerators in the Individual Sector, and was undertaken by the PBs in the social sector. Contact by the personnel of the consultant undertaking the monitoring and evaluation, with beneficiaries, particularly in the social sector, was limited.

3. Investment costs were determined from the sub-borrowers' investment proposals. Much of the existing investment in the sub-projects, including investments funded from other sources and from borrowers' equity contributions, was not always considered. While it may not have been common, the completion mission did visit individual farmers who had obtained one subloan for livestock and an additional subloan for the farm mechanisation required for livestock fodder harvesting.

4. The diverse nature of the types of investment, the large number of Republics and Autonomous Provinces and the initiation of subprojects over a range of years have given problems in the collation of data collected. This has been aggravated by the late start made in the monitoring and evaluation program.

5. No attempt has been made to determine the pre-Project situation for the borrowers and it has been assumed that these are as described in the Staff Appraisal Report. As the sub-borrowers were not average farms for Yugoslavia, this assumption is incorrect.

6. The consultant has not differentiated between sub-projects starting in different years. It is therefore not possible to measure the yield and cost progressions, as the investments developed. This is most unfortunate with respect to slower maturing crops such as grapes and cherries, and in the dairy development.

7. The data collected by the consultant, for Monitoring and Evaluation is not of much value in undertaking ex-post evaluation because of the inadequate definition of the pre-Project situation, under-estimation of investment cost and lack of data on yield and cost phasing.

8. In the opinion of the mission, a more useful survey could have been undertaken by sub-sampling a limited number of Project beneficiaries in detail, so that complete data, including the pre-Project situation, could be determined, and by collecting only key indices from the rest of the surveyed sub-borrowers.

9. The survey conducted has not adequately measured the effect of investments in mechanization and livestock development on the individual farms. Yugoslav farmers do not have high cash incomes, and the demand for borrowed funds for tractor purchase indicates that farmers believe such investment to be profitable. A more in-depth study must be made on the effect of mechanization on farmer incomes and agricultural production, before it can be concluded that farmers are buying tractors mainly for social reasons and that such investment cannot be economically justified.

10. The final report prepared by the consultant includes many statements not substantiated by the survey work or statistics used.

ANNEX 10

YUGOSLAVIA

FIRST AGRICULTURAL CREDIT PROJECT

LOAN 1129-YU

Project Completion Report

Benefits from Mechanization, and Appraisal Concept of Grain Dryers

A. Mechanization

1. The benefits from mechanization are:

a. Increased area cultivated
b. Better cultivation.
c. More timely cultivation and harvesting.
d. Reduction of labor in cultivation and other work thus freeing labor for other activities and or more labor intensive enterprises.
e. Provision of services to other landowners.
f. Reduction or elimination of draught animals freeing feed resources for milking cows and other productive animals.
g. Social benefits.

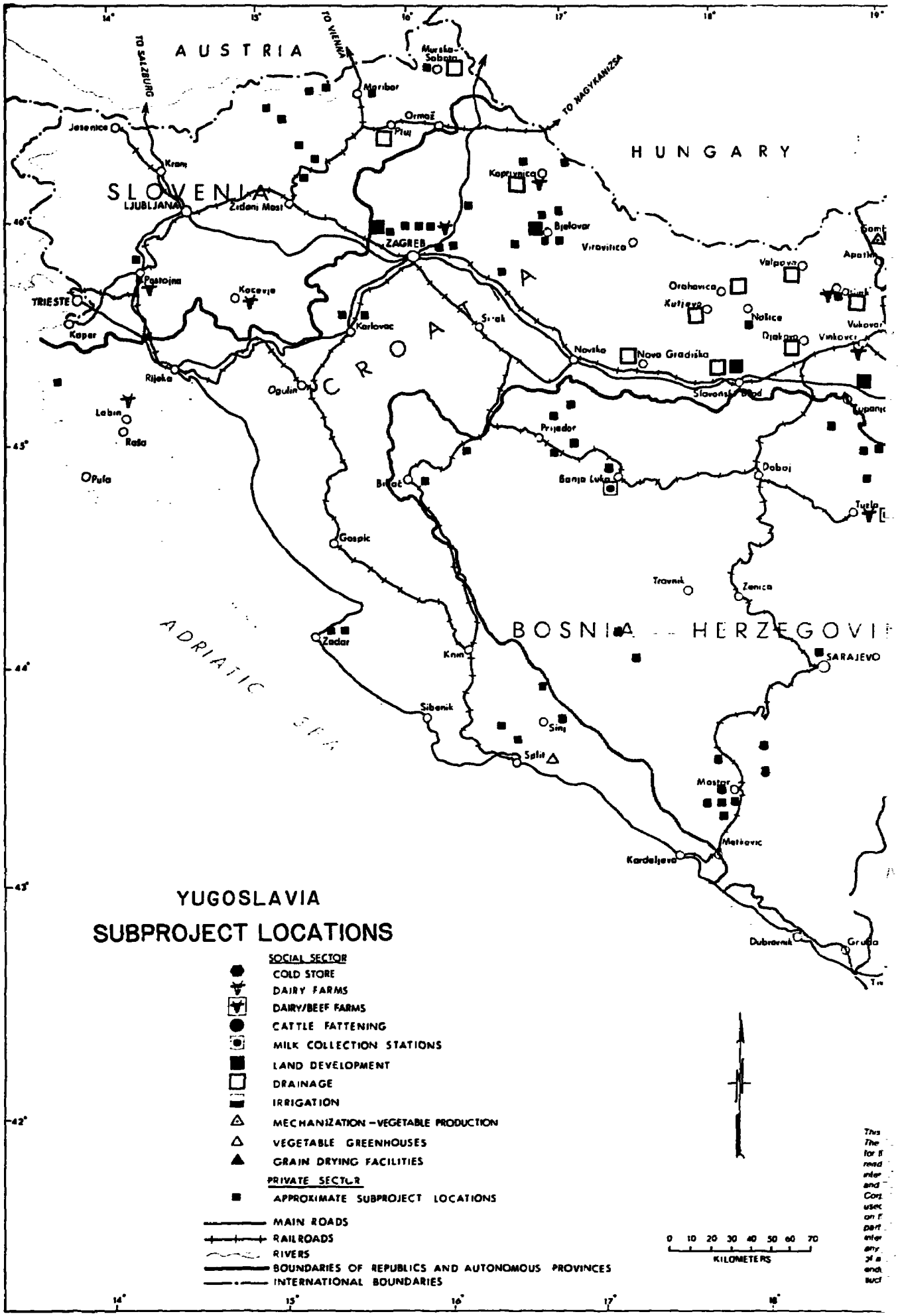
2. It is apparent to the mission that the introduction of mechanization in general, and tractors in particular, has had a major impact, particularly in the marginal agricultural areas. Considerable areas of land have been abandoned, particularly in southern parts of Yugoslavia. The arduous work in farming with draught animals is unattractive to young people and impossible for older farmers. The advent of mechanization has enabled much higher productivity per worker, has kept many young people on the land (in fact attracted workers back from the towns to the land) and provided a means for the cultivation of land owned by aged farmers no longer able to undertake the work themselves. The tractors also provide other social benefits in the provision of transport for such things as household requirements, firewood, etc., and the more rapid transport of personnel. Although it may not be the best means of transporting personnel, it is all that is available to many rural areas, and without such transport these would be less desirable places to live.

3. Owing to the very small farm size, maximum 10 ha, in Yugoslavia and the very diversified and intensive forms of farming being undertaken by individual farmers, the number of tractors required per 100 ha of arable land is higher than would be required in countries where farm size is much bigger. The tractor utilization can be improved by the provision of services to other landowners. However, the small areas of individual crops and the difficulty in maintaining adequate services to a large number of farmers prevent full utilization of tractors. While a high number of tractors per 100 ha of arable land does increase the capital investment in tractors, it must be recognized that the lower utilization extends the life of the tractor, and the annual replacement cost of tractors per 100 ha of land may not be big.

4. The monitoring and evaluation survey undertaken by the consultant did not attempt to determine the pre-project situation on farms which obtained loans for mechanization. It is therefore extremely difficult to evaluate the benefits which have resulted from mechanization. Crop yields obtained by farmers who invested in mechanization, are well in excess of the average yields for the individual sector in Yugoslavia.

B. Grain Dryers

5. At appraisal, the concept was to use direct hot air from the burner to remove moisture from the grain rather than the indirect method where an intermediary fluid is heated much like a boiler and the air is heated from radiators and then passes through the grain. Not only are the indirect method driers more expensive, but the operating costs are likewise more due primarily to the inefficiency of such a system. The direct heated driers also can remove more moisture from grain in a shorter time than the indirect heated driers, therefore, the rated through put should be higher to achieve the same output as a direct heated drier. Bank finally agreed to the use of indirect heated driers only after a long dialogue with the Borrower, as the Government would not allow grain dried with direct heated driers to be used for human consumption. Environmentalists had persuaded Government that residual flavor and odor would result from direct heated air from high oil burner in a direct heated drier. Most grain dried in the world is, however, from direct heated driers.


YUGOSLAVIA
SUBPROJECT LOCATIONS
SOCIAL SECTOR
COLD STORE
DAIRY FARMS
DAIRY/BEEF FARMS
CATTLE FATTENING
MILK COLLECTION STATIONS
LAND DEVELOPMENT
DRAINAGE
IRRIGATION
MECHANIZATION – VEGETABLE PRODUCTION
VEGETABLE GREENHOUSES
GRAIN DRYING FACILITIES
PRIVATE SECTOR
APPROXIMATE SUBPROJECT LOCATIONS
MAIN ROADS
RAILROADS
RIVERS
BOUNDARIES OF REPUBLICS AND AUTONOMOUS PROVINCES
INTERNATIONAL BOUNDARIES
0 10 20 30 40 50 60 70
KILOMETERS
AUSTRIA
HUNGARY
SLOVENIA
CROATIA
BOSNIA – HERZEGOVIN
ADRIATIC SEA
TO SALZBURG
TO VIENNA
TO NAGYKANIZSA
Murska Sobota
Maribor
Ormož
Ptuj
Jesenice
Kranj
LJUBLJANA
Zidani Most
Koprivnica
Bjelovar
ZAGREB
Virovitica
Postojna
TRIESTE
Koper
Kočevje
Karlovac
Sisak
Novska
Nova Gradiška
Slavonski Brod
Orahovica
Kutjevo
Našice
Valpovo
Vukovar
Vinkovci
Đakovo
Rijeka
Ogulin
Labin
Rača
Pula
Prijedor
Banja Luka
Doboj
Tuzla
Bihać
Gospić
Travnik
Zenica
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Dubrovnik
Gruža

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