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GUATEMALA: RURAL ENTERPRISES

PROJECT ANALYSIS WORKING PAPERS

ECONOMIC ANALYSIS & TARGET GROUP IMPACTS
CREDIT DEMAND SURVEY
FINANCIAL ANALYSIS & PROJECT ALTERNATIVES
APPROPRIATE TECHNOLOGY AND ARTISANRY
COST BENEFIT ANALYSIS
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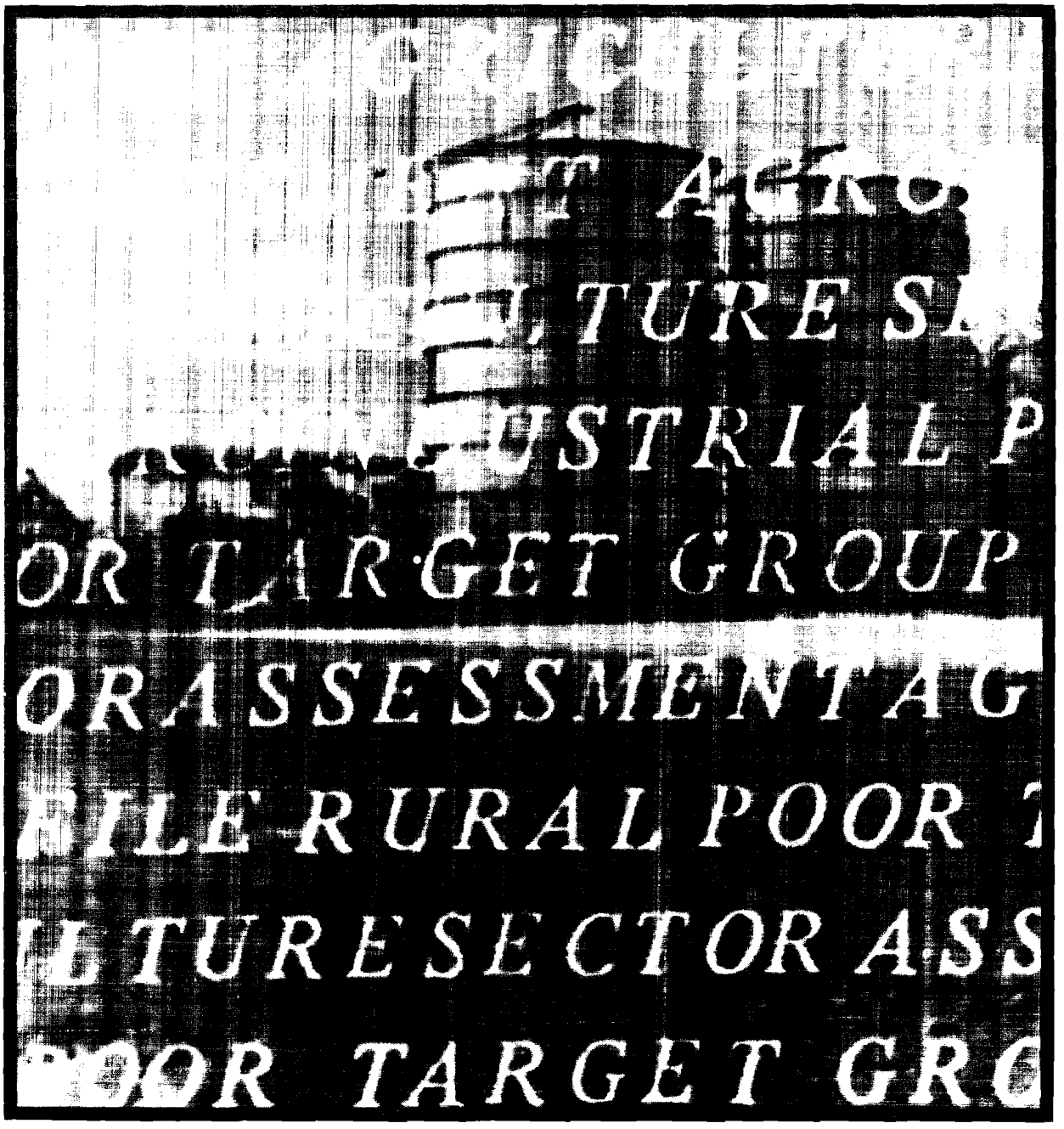

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AN ANALYSIS OF PROJECT FEASIBILITY AND POTENTIAL IMPACT OF CREDIT AND TECHNICAL ASSISTANCE TO SMALL SCALE RURAL ENTERPRISES IN GUATEMALA

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Table of Contents

I. ECONOMIC ANALYSIS

A. Profile of the Target Group

1. Target Group Size

In the 10 departments classified as "sub-marginal" in the maps prepared by F. Mann, there are approximately 45,000 target group families earning their livelihood from small scale rural enterprises either as owner/operator families or as employees. There is an average of 1.66 economically active members in these families.

2. Major Economic Activities

Textiles and commercial enterprises are the largest sectoral source of income and employment; these two sectors account for 59% of all economic activity of the target group families. Table 1 outlines the major economic activities of target group families by sector of activity.

Table 1
Target Group Profile 1978
Families Active in Small Scale Rural Enterprises

Sector	Number of Families	Number of Firms	Percent of Families
Wood Products	4,037	3,113	9
Textiles	17,944	11,636	40
Leather and Miscellaneous[a]	6,729	4,124	15
Baking and Food Products	7,626	4,799	17
Commercial/Services	8,523	7,414	19
All Small Scale	44,859	31,086	100

Sources: S. Daines computation based on Rural Enterprise Survey, 1978; and F. Mann, Marginal and Submarginal Municipalities in Guatemala, Consultants Report, Agency for International Development, Guatemala, 1977.

[a]This sector includes all other non-food small scale enterprises such as ceramics, metalworking, basketry, glass, etc.

From Table 1 it would appear that almost one-third of the families dependent on small scale rural enterprises for their livelihood participate as hired laborers and not as owner/operators.

3. Income Profile of the Participant Target Group

In the "New Directions" legislation, the US Congress accepted AID's suggestion that $150 per capita (1969) was a reasonable benchmark which could be used to define the poor majority. Using average inflation rates in US$ since then, the 1977 equivalent would be approximately US$225 per capita. By this standard almost all of the families in the category of small scale rural enterprises in the target area are inside the "poverty" group. Table 2

provides an income profile of the per capita income situation of rural enterprise families in the target area.

Table 2
Income Profile of Small Scale Rural Entrepreneurs

Sector	Net Income per Family from Family Enterprises	Net Income per Capita from Family Enterprises
Wood Products	$886	$132
Textiles	500	73
Leather and Miscellaneous	744	130
Baking and Food Products	735	113
Commercial/Services	993	226

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

Available family labor may be employed outside the enterprise and provide some income in addition to that noted in Table 2. Therefore, the estimates of net family and per capita income for non-commercial enterprises is probably underestimated. Family size in commercial enterprises is substantially smaller than in other sectors and the potential for outside employment consequently reduced.

From Table 2 it appears that almost all of the families active in rural enterprises are inside the AID defined target group on an income basis. Those families with commercial enterprises may be partially above the target group limits, but the line itself allows some flexibility.

While Table 2 deals with those families who own and operate small scale enterprises it does not cover the almost 40% of the target group who depend for their livelihood on employment in small scale firms. Estimates of their income are more difficult to make since no information is available on their non-enterprise-employment income. It is likely that these workers have other employment and that only a part of their income is captured in the information gathered in the rural enterprise survey. In order to make some educated guess at their income the following assumptions have been made. First, that the dependency ratio (the relationship between economically active and dependent members of a household) is the same for the worker households as for the enterprise owning households. Second, that the wage rate earned by the worker in the enterprise is the same as the wage rate earned when the worker is employed outside the enterprise. Thirdly, that the workers are employed no more than a total of 8 months out of any given year, including both work in and outside of enterprises. There is reason to believe that these assumptions underestimate incomes since an important temporary income source for rural workers is the South Coast where wage rates are significantly above the enterprise wage rates used for the estimates in Table 3. Without more refined data it is impossible to estimate the possible distortion in these figures as a result of the South Coast employment influence, but it is very unlikely that it could lift these families out of the target group since it would have to more than double their apparent incomes.

Table 3 indicates that even if worker families were employed eight months out of each year, their incomes would be consistently less than the incomes of the enterprise-owning families. This is an important point since it implies that there is a significant income disadventage to being a worker as opposed to an owner of a small enterprise. Table 3 quantifies this income disparity. There are two income benefits from ownership of small scale enterprises; first, the return to a day's work is about 50% higher for workers from the owner's family than it is to hired workers, and secondly, ownership allows the family to have an assured (or nearly assured) employment rate considerably higher than that which hired workers can achieve.

Table 3
Income Profile of Workers in Small Scale Rural Enterprises

Sector	Wage Rate for Worker per Month	Net Income per Month for Men and Women Over 15 in Owner Family	Percent Superiority of Owner Income per Month Worked	Net Income per Capita for Worker Family
Wood Products	$65	$81	24.6	$139
Textiles	21	32	52.4	45
Leather and Miscellaneous	31	47	51.6	66
Baking and Food Products	32	43	34.4	69
Commercial Services	28	60	114.3	50

Source: S. Daines computation based on person months worked for owner family members over 15 based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

Table 3 presents one of the important income effects of expanding small scale enterprises. This effect derives from the fact that small scale enterprises allow target group rural families to earn a considerably higher rate of return per day worked than they could command in the employment markets in the Guatemalan Highlands. The benefit of working with small scale enterprises as opposed to medium and large scale enterprises is also indicated by these figures. The smaller the enterprise the larger the number of families that can enter as owners and the larger the number of target group man days that can be worked in an owner/operator role as contrasted to a hired laborer role.

B. Project Potential for Increasing Income

1. Income Impact on Target Group from Expansion at Current Profitability

In order to estimate the income impact of this project, it is important to explore the current profitability patterns of the enterprises to be assisted. If their current operations are internally inefficient, then simple expansion may not have any favorable impact on family net incomes; in fact, expansion may deteriorate their income situation. Profitability may be thought of from many different perspectives; the two most important for project purposes are capital and labor profitability.

Table 3 identified considerable variation in profitability of family labor, but in all cases entrepreneural labor was substantially higher than the average wage rate. Labor profitability was the highest for wood products and commercial enterprises and lowest for textiles. From the labor profitability point of view, enterprises are more profitable than worker wages and one would conclude that from this perspective they are expandable with income potential to owner families, but less advantageous to workers.

Capital profitability is important since one of the major interventions of this project is to expand the capital base of the small scale firm. If current returns to capital are dangerously low, then perhaps technical assistance to change profitability should be seen as a prelude to any direct expansion efforts. Table 4 presents profitability ratios for small scale enterprises by sector of activity. It is important to realize that the profitability rates indicated in the table are net returns to capital and entrepreneural family labor.

Since the scale of these firms is extremely small, about two workers per firm, it might seem natural to assume that they have few capital goods or durable equipment. This is not the case; while the capital per laborer is indeed low, capital goods are by no means an insignificant input into the production process. The average small scale firm has $940-1,569 in equipment. The difference between these two figures is that the first ($940) values the equipment at cost, while the second ($1,569) values the equipment at replacement value. The central role of capital in these operations is illustrated by the fact that current profitability to the entrepreneur, which should be calculated with equipment valued at cost, is almost 50% higher than the profitability which would be caused by expansion through purchase of new equipment at replacement costs.

Table 4
The Profitability of Small Scale Rural Enterprises in Guatemala

Sector	Current Profitability (Rate of Return to Total Capital Value at Cost Including Working Capital)	Expansion Profitability Based on Replacement Values for Equipment	Value of Equipment per Firm	
			Cost	Replacement
Wood Products	67%	32%	$823	$1,892
Textiles	54	36	615	968
Leather and Miscellaneous	64	34	750	1,490
Baking and Food Products	79	50	324	760
Commercial/Services	78	50	848	1,409

Source: S. Daines and W. Roach computations based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

While there is a considerable decrease in the profitability of these enterprises and their potential for increasing income when replacement values for equipment are used, it is possible that the investment in new equipment would in fact be more inherently efficient, require less expense for repair, etc., and on balance result in a profitability ratio somewhere between the two rates in Table 4.

In any case, even the low (replacement value) profitabilities are encouraging since they imply that for each dollar of credit there is the potential to create an additional 32-50 cents of target group income at a minimum. To reach this conclusion we need only assume that credit will result in an expansion of the capital base of the firm and that marginal expansions can be managed at current profitability levels. Table 5 indicates the income impact on the target group, for owner families of credit funds disbursed.

Table 5
Estimated Income Impact of Rural Enterprise Project
8.5 Million US$ of Credit[a] Disbursed
(Owner Families Only)

Sector	Average Loan Size Requested	Number of Families Benefited	Net Income Increase[b]	Percent Increase in Family Income
Wood Products	$2,380	504	$701	79
Textiles	800	1,500	265	53
Leather	2,133	609	670	90
Baking/Foods	1,939	619	892	121
Comm./Services	1,290	930	593	60
All Small Scale Enterprises		4,162	$544	75

Source: S. Daines computations based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

[a]Of the 8.5 million disbursed, $6.1 million would be disbursed to small scale enterprises where the owners are part of the target group poor. Medium and large scale enterprises, owned by non-target group families, will result in income benefits to workers hired from target group families. This impact is illustrated in Table 6 below.

[b]The net income increase is per family per year. That is, target group owners of wood products enterprises would earn an additional $762, and after paying back the loan at 8% would have a net of $701 or added family income which is a 79% increase over their pre-loan family income level.

The income impact of the proposed project would result in an average 75% increase in the net family income of 4,162 target group families. For some sectors, baking and foods products, the income of participant households could be expected, based on past performance, to more than double. Unfortunately, the poorest households, involved in textiles, would experience only a 53% increase in income.

b. Income Impact of Project Through Increased Profitability

Even though the rate of return to capital is surprisingly high, the profitability of labor in an absolute sense is disappointingly low. Earlier it was noted that the labor profitability of entrepreneur families was considerably higher than the average wage rates at which labor could be hired in the rural areas. This fact indicates that expansion *is* profitable vis a vis the existing alternatives for labor, and is therefore advisable. That labor profitability is high in a comparative sense with other alternatives should not obscure that it is very low absolutely, even at very high employment rates small scale enterprise families cannot escape the poverty

group on the basis of their own labor, but must be able to hire labor at desperately low levels and turn a small margin of profit on that labor. The simple fact is that neither hired nor family labor operate at high enough efficiency levels to provide acceptable levels of life.

While expansion may increase incomes by a considerable margin even at current technology and profitability these benefits can only operate at very low wage rates. Productivity and technology must improve if any long-term solution is to be effected. Beyond the credit, technical assistance will be provided with this project to borrowers, with more intensity to those engaged in export handicraft production, but to some degree to all participating entrepreneurs.

With the data available, it is virtually impossible to project the probable impact of this technical assistance; almost no experience exists in Guatemala which could provide the basis for such an estimate. No attempt will be made here to quantify these impacts, but careful provision for such measurement is being made in the evaluation plan to track and attempt to quantify the actual results. In this sense the technical assistance is an experimental component of the project; the low profitability of labor demands it whether or not we can quantify, ex ante, its benefits.

In addition to direct income benefits to owner families, the credit investments will create additional employment of non-family hired laborers who will thereby obtain additional income. These benefits, even though they result in income, will be treated as employment benefits in the next section.

C. Employment Effects

1. Employment Profile of Target Groups, Owners and Workers

a. Employment Structure of Small Scale Enterprises

Small enterprises hire almost one-fourth of all their labor. This fact is a surprise since the small scale operation would be assumed to utilize family unpaid labor without the need for outside hiring. Table 6 indicates the employment patterns of small scale enterprises. Commercial enterprises hire by far the lowest percentage of their labor, family members provide almost all of their labor requirements. For the balance of the enterprises, hired labor

Table 6
Employment Patterns of Small Scale Enterprises

Sector	Person Months of Labor Worked in the Enterprise		
	Hired Labor	Family Labor	Percent Hired
Wood Products	8.9	12.9	40.8
Textiles	9.2	18.8	32.9
Leather, Maguey, Misc.	7.0	18.8	27.1
Baking and Food Products	11.3	23.3	32.7
Commercial Services	1.0	19.7	4.8

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

provides from just over one-fourth (Leather Misc.) to over 40% of the labor used. This strong hiring pattern has the result, as will be explored below, of passing a large proportion of the income benefit to families without business assets, and no doubt in large part landless rural families who make up the rural hired labor force.

b. Employment Profile of Enterprise Owning Families

Enterprise owning families have a surprisingly high rate of employment which varies by sector from a low of 68% to a high of 96% in the baking and foods products sector. While the return to family labor per day worked is higher than the hired labor wage by almost 50%, as was indicated earlier, the productivity of each day is still so low as to keep most of the enterprise families below even AID's poverty line. The high rates of employment of family labor also explain in large part why hiring is such a common practice even for very small firms; the family labor pool is very nearly exhausted in most cases. These employment rates are probably overestimated due to the fact that no data were available on family members who were not involved at any time during the year in the enterprise. It may be that there are enough of these totally unemployed family members to reduce the actual family employment average below the figures indicated in Table 7.

Table 7
Employment Patterns of Enterprise Owning Families, 1978

Sector	Number of Workers in Family	Person Months[a] of Family Labor in Enterprise	Percent of Family Available Labor Utilized in Enterprise
Wood Products	1.58	12.9	68
Textiles	2.01	18.8	75
Leather and Misc.	1.71	18.8	92
Baking/Food Prod.	2.01	23.2	96
Commercial Services	2.28	19.7	72

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

[a]It should be noted that recall surveys such as this one perform less well with estimates of actual family labor worked in person months or in person days than with almost any other data types included in the report thus far. These employment figures are therefore to be used with caution.

Even given the difficulty of estimating person months of family labor with a recall survey, these figures indicate a sharp contrast between the employment rates of the families of small scale entrepreneurs and the residual of rural families including small farmers and landless workers. The studies which are available indicate that employment in the highlands in general is substantially below the figures indicated in Table 7. A study of small farm families based on 1600 observations indicated that the employment rate for small farm families in the Highlands in 1974 was 42% including off-farm employment.

c. Employment Profile of Workers in Small Scale Rural Enterprises

The data from the survey provide little added insight into the overall employment situation of the workers who provide hired labor services to small scale rural enterprises. From the data available it appears that the wood products and textiles sectors employ a single person to provide almost all of their nine person months of hired labor per firm. This would indicate that the employment rate of these hired laborers would approximate the high level of employment of the enterprise family itself. In the baking and food products sector a single person appears to be hired during about 11 months during the year on average, and in the leather and miscellaneous sector one worker is employed at about half of his time.

The employment of those who are currently working in rural enterprises appears to be surprisingly constant. The employment situation for those who could be included as participants under this project is likely to be even lower currently than the 42% figure given above for small farm families in the Highlands.

2. Costs of Creating Additional Jobs Through This Project

The costs of creating jobs in the rural areas through assistance to small scale enterprises may be estimated from three different perspectives. First, the capital costs of creating a workplace may be estimated. and since credit activity is essentially the expansion of this capital base, the capital costs should be equal to the project costs of employment generation.

A second method facilitated by the Rural Enterprise Survey is to ask prospective borrowers how many additional persons they would hire if they obtained the loan they requested. This number divided by the total value of the loan would give a second type of cost of employment generation.

The third method is to compute the proportion of dollar value of loans which will be used for hired labor, divide that by the wage rate to obtain a person month figure which could then be divided by the total loan amount to produce an estimate of the costs of creating a job.

Table 8 presents these three estimates of the project cost of generating jobs. It should be remembered that the second estimate is for additional persons hired, not necessarily for full person year employment equivalents. The other estimates are costs of creating 12 person months of full time employment.

The costs of job creation presented in Table 8 differ not just in measurement technique but also in concept. The first estimate counts the costs of creating all employment in the firm whether it is provided by family or hired labor, the last two measure the total loan costs of creating additional hired labor. The fact that the costs of generating hired labor are thought to be so high by entrepreneurs indicates that they think there is more slack in family labor supply that appears to be the case from their estimates of the numbers and person months worked inside the family.

Table 8
Costs of Creating Additional Jobs in Small Scale Rural Enterprises

Sector	$ of Capital (Fixed and Working) per Person Year Family + Hired	$ of Loan per Additional Person Hired	$ of Loan per Person Year of Additional Employment (Hired Labor Expenditure)
Wood Products	$651	$2,369	$8,122
Textiles	354	421	1,263
Leather and Miscellaneous	486	1,256	1,287
Baking and Food	287	1,764	4,850
Commercial Services	659	2,580	4,300

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

3. Employment Impacts of Project

a. Total Direct Employment Impact (Family and Hired Labor)

The total project (5.5 million AID and 3.0 million GOG) loan would create a direct additional employment of 14,390 person years each year. Table 9 outlines the sectors and estimation procedure used to arrive at the estimates of direct employment impact on the target group. The first estimate is for total employment including family and hired labor, based

Table 9
Direct Employment Impact of Project Investments

Sector	$ of Credit per Person	Total Person Years Added	Additional Hired Person Years per Enterprise	Additional Persons Hired on All Loans
Wood Products	$651[a]	1,843	1.0	504
Textiles	354	3,390	1.9	2,850
Leather Misc.	486	2,675	1.7	1,035
Baking/Food	287	4,181	1.1	681
Commercial	659	1,821	0.5	465
All Small Scale		13,910		5,535
Medium Scale	$5,000[b]	480		
Total Project		14,390		

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

[a]The direct employment impacts are estimated assuming that the 6.1 millions of credit to small scale firms will be disbursed in approximately the same proportions among the sub-sectors as were the requests for credit in the suvvey (1.2m to Wood, 1.2m to Textiles, 1.3m to Leather, 1.2m to Food, and 1.2m to Commercial Enterprises). The balance of the loan would be for medium scale firms. The distribution between small and medium scale is based on the following institutional distribution of credit: CORFINA direct 28% small and 16% medium scale, GUATEXPRO 12% small, Cooperatives 28% small, Fundación del Centavo 4% small, FIASA 6% medium, FIGSA 6% medium.

[b]The estimate of $5,000 per person year of employment generated is not based on any systematic original data source and may be subject to considerable error.

on the total capital costs of generating one full-time person year of employment. Since twelve months of full-time employment is very difficult to achieve in a seasonal business, this employment will likely involve at least one-third more actual persons than the man-year estimate indicates. It would not be unreasonable to suggest that the 14,000 total man years of employment will provide a stable employment base for roughly 20,000 workers.

Of the total 13,910 added person years of employment created by the investment in small scale enterprises, 40% is to be hired according to the responses of entrepreneurs in the survey. These 5,535 jobs would very likely go to landless rural worker families who are in fact the poorest of the rural population. While no figures are available on the split between owner and hired family labor in medium scale firms, the large majority of the 480 jobs created by the medium scale investment would be in the hired category.

b. Employment Impact on Rural Women

Table 10 presents an employment profile, and estimated impact of the project on rural women. Women provide almost half (49%) of all labor in small scale rural enterprises, they predominate management and employment in commercial enterprises, and split these roles on an equal basis in textiles with men. Wages for women in all activities are substantially lower than men, however, and there is evidence in the sectoral composition of women employment (foods, textiles and commerce) that traditional roles created by culture may in fact be serious limiting factors to the mobility of women in enterprise ownership, management, and general employment.

Table 10
Employment Profile and Project on Rural Women

Sector	Women as a Percent of Total Employment	Woman Years of Additional Employment Generated
Wood Products	8	148
Textiles	50	1,695
Leather and Misc.	17	455
Baking and Foods	47	1,965
Commercial Services	65	1,184
Total Small Scale	40	5,447

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

The composition of loan requests and the demand for credit result in women obtaining a smaller share (40%) of project created employment than they command in the general small scale enterprise employment market (50%). Earlier studies of agriculture in the Highlands indicated a very low employment role for women in direct agricultural activities; small farm credit appears to have had little impact on the employment of women. In contrast, the small rural enterprise loan would add at least 5,447 woman years of employment and probably employ at least 8,000 additional women for the majority of the year.

D. Effects on the National Economy

1. Income

Income generation in an economy as a whole is created by a series of interlocking circles. Income paid to one household is spent for the goods and services of another and the chain is literally endless. In order to estimate the total income impacts of a particular expansion in one sector or industry on all other sectors and households requires a methodology much too complex, and a data base many times as comprehensive as that available to this study. The relationship between direct and indirect income generation is a structural characteristic which may vary little from one underdeveloped country to another, an alternative to making no estimate is therefore to utilize the predominant features of the Guatemalan impact situation which have been measured, and add to these statistics, ratios measured in other but similar Latin American countries in order to estimate direct and indirect project impacts.

The direct and indirect impacts of rural enterprise expansions may be thought of as the sum of direct income payments to the households owning and operating the firm + direct payments to laborers + indirect income flows created at later stages as these direct incomes are expended.

Given AID's interest in the poor majority, both rural and urban, it is important that we distinguish between indirect benefits which accrue to target group households, and those which go to non-target group families. Table 11 therefore outlines the total impact on the economy and then Table 13 separates the estimated impacts on the two income level groups in the economy.

Table 11
Direct and Indirect Income Impact on the Guatemalan Economy (US$)

Sector	Direct Owner Operator	Direct Laborer Income	Indirect $ of Income/ $ of Added Output	Indirect Income Total	Total Direct and Indirect Income
Wood	$384	$113	0.721[a]	$ 872	$1,369
Textiles	432	240	1.145[b]	1,557	2,229
Leather	441	375	2.129[c]	2,129	2,945
Baking	600	95	1.220[d]	3,104	3,799
Commercial	599	94	1.460[e]	2,628	3,321
All Small Scale	$2,456	$917		$10,290	$13,663
Medium Scale	na[f]	na[f]	2.332[f]	na[f]	$ 5.550[f]
Project Total	na	na	na	na	$19,213

[a]The direct owner and laborer income estimates are based on the 1978 Rural Enterprise Survey for Guatemala by S. Daines, G. Smith, Ministry of Agriculture and BANDESA. The indirect income coefficient is based on an input output model for Colombia 1969. Each industry coefficient is matched to the most similar Colombian industry. The wood industry was matched with the industry titled "lumber" in Colombia. Sources are S. Daines et al., *Colombia Agriculture Sector Analysis*, Washington, D.C., Agency for International Development, 1972, p. 95.

[b]Textiles was matched to "spinning and weaving," *ibid.*, p. 95.

[c]Leather was matched to "leather goods," *ibid.*, p. 95.

[d]Baking was matched to "wheat bread," *ibid.*, p. 95.

[e]Commercial was matched to "fruit and vegetable marketing," *ibid.*, p. 95.

[f]Since direct income information was not available for Guatemala on medium scale firms, the total income (direct and indirect) multiplier for Colombia was used for the median agricultural processing industry.

The total income generation from this project would be approximately $19 million, but this would take an indeterminate length of time to occur; it would not be generated in a single year, but rather from one complete indirect cycle in the economy. This includes incomes earned by any household in any part of the economy and includes a significant amount of double counting.

Incomes generated directly and indirectly to poor households may be quantified in general estimates using the multipliers calculated for this purpose on similar industries in Colombia. Table 12 contains such an estimate.

Table 12
Direct and Indirect Impact on Poor Households
Rural Enterprise Project

Sector	Additional Output Caused by Project	$ of Income[a] to Poor Households per $ Output	Direct Income to Poor Households	Indirect Income to Poor Households	Total Income to Poor Households
Wood Prod.	$1,210	$0.678	$497	$323	$820
Textiles	1,360	1.068	672	780	1,453
Leather Misc.	1,380	1.019	816	590	1,406
Baking/Foods	2,540	0.909	695	1,615	2,310
Commercial	1,800	1.082	693	1,251	1,944
Small Scale	$8,290		$2,768	$4,559	$7,933

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA and sources noted in (a) below.

[a]The multipliers or coefficients for target group direct and indirect income impacts are taken from S. Daines, Colombia Agriculture Sector Analysis, Washington, D.C., 1972, p. 107. Individual sectors were matched with similar Colombian sectors as follows: Wood Products with "Wood," Textiles with "Clothing and Textiles," Leather with "Leather," Baking and Food Products with the simple average of "Bread," "Other Foods," and "Fruit and Vegetables," commercial enterprises was matched with the pro-rated direct to indirect coefficient for all rural marketing.

The total income generated in all parts of the country to target group poor households is almost $8 million, though it is not clear that these impacts would occur within a given year since project funds will be disbursed over a period of years and since indirect impacts may take at least two years to be realized. These impacts are estimated as if the project were able to disburse all at the same time; more realistic estimates of the project net benefits based on projected actual disbursements can be found in the Cost/Benefit section of this paper.

Fifty-eight percent of the total income impact of the project $13.6 million) occurs in target group poor rural and urban households. Of the total income benefit to the poor, 57% is caused indirectly through backward or forward links to other non-project transactions, the balance being direct benefits to project enterprise owner/operator families or direct employees.

The foods and commercial services subsectors have particularly strong indirect income impacts on poor households; between these two activities, almost two-thirds of all indirect income benefits to the poor are accounted for. The largest proportion of these indirect benefits goes to the small farm producers who grow a large proportion of the products

processed and marketed through these channels. This important backward link to agriculture is surprisingly high.

While the average incomes of enterprise households noted in Table 2 are inside the AID defined benchmark for the "poor majority," the averages obviously imply that some households in the group are above that benchmark, and most are below. The estimates in Table 12 provide an indirect way of estimating what proportion of the direct beneficiaries (enterprise owners and workers) are above the AID benchmark of US$150 per capita in 1969 US$. From Table 12 we note that $2,768,000 of income is directly created to poor households, that is in the form of wages (worker households), profits (owner households) and imputed wages (owner family unpaid labor). Table 11 indicates that $3,373,000 of direct income would be generated to all (poor and non-poor) rural small scale enterprise households ($2,456,000 to owner-operator households and $917,000 to worker households). By dividing the total direct income (3.3 million) into the direct income to poor households (2.7 million), we find that 82% of all direct income would be to poor rural enterprise households. That is the same as to say that only 18% of small scale rural enterprise families are above AID's benchmark definition for the "poor majority."

Because of the difficulty of obtaining data on medium scale enterprises, no direct estimates are included.

2. Employment

Direct and indirect estimates of the employment impact of the project are more difficult to make than income estimates because it is impossible given the data available to determine the employment content in indirect income. Table 12 estimates the indirect income which the project would generate; a part of that income, particularly that which goes to low income households, is probably for wage labor services, but the data do not permit a careful division between wage/labor and other income.

One of the most important indirect employment impacts of rural enterprise expansion should be to increase the employment of small farmers and workers on large farms by increasing the demand for raw agricultural products. While it is difficult to estimate general indirect employment impacts, it is possible to elaborate reasonable estimates of the on-farm employment impact of rural enterprise expansion. Table 13 presents these estimates.

The indirect employment impact of the project on farm labor is not sizable, it constitutes only 19% of the direct employment generated in the enterprises themselves. While total indirect income is large, only a small proportion of that income will result in increased farm incomes, most of it goes to other non-farm rural households and urban households.

Table 13 indicates, as would be expected, that the only rural enterprise sub-sector with important backward links to farm labor is the baking and food products subsector. For every dollar of added output from the food products enterprise sector, an additional 14 cents of unskilled farm labor would be required. This link is almost twice as high as the average for the other enterprise sectors.

From these data it might be incorrectly inferred that most of this backward link to farms would benefit the small farmer since the small farmer predominates in the Highlands.

Table 13
On-Farm Employment Impacts of Rural Enterprise Project

Sector	Farm Employment[a] Multiplier ($ of Unskilled Farm Labor per $ of Added Enterprise Output)	Person Years of Additional On-Farm Labor Created by Rural Enterprise Project
Wood Products	$0.059	211
Textiles	0.090	363
Leather	0.092	378
Baking/Food	0.141	1,066
Commercial	0.075	402
Small Scale		2,420
Medium Scale	0.048	339
Project Total		2,759

[a]Employment multipliers based on S. Daines, *Colombia Agriculture Sector Analysis*, Washington, D.C., 1972, pp. 80-84. Gross output levels based on loan volume and 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

While it is difficult to estimate what the small farmer share is in this added labor and added product demand, studies from neighboring El Salvador indicate that it is very small. While small farmers may predominate in terms of the area exploited in the Highlands, and perhaps even in the volume of production, that does not mean that they are the predominant beneficiaries of added labor or product demand from the agroindustrial sector, or even the small scale portion of the agroindustrial sector. Small farm produce is less likely to be processed than large farm product, small farmers may consume a portion of their product, and in general lack the necessary marketing connections to assure that as large a proportion of their produce is elaborated in subsequent processing industries.

The portion of backward linking demand and labor impact which is captured by small farmers will be influenced by three factors: first, the raw product intensity of the enterprise; secondly, the share which small farms produce of the raw product; and third, the proportion of the small farm product which actually reaches processing. These three factors are accounted for in Table 14 where results of the El Salvador agroindustry study are presented for illustrative purposes.

If the percentages given in the last column are adjusted by the relative size of the industry, it is clear that the small farm share in the value of production of rural agroindustrial activities is very small, probably less than 10%. What this implies for the Guatemala Rural Enterprise Project is that if substantial small farm impacts are expected, some explicit arrangement must be made to make the link stronger. Many of these arrangements may be organized through cooperative buying or other direct interventions, but without some kind of adjustment in the natural system it is likely that small farms will be only marginal beneficiaries through expanded processing of their products. Of course, they are likely to benefit more directly as employees in rural enterprises and that may in the end be the most important link to the small farm family.

Table 14
Small Farm Share in Agroindustrial Output Value
El Salvador 1977

Sector	Raw Material Intensity of the Agroindustry (Farm Product as a % of Value of Production)	Percent of Output Value of Agroindustry Captured by Small Farms
Coffee Processing	56.9%	6.0%
Textiles	44.7	2.8
Clothing	50.1	3.2
Leather	51.7	14.2
Shoes	41.3	11.2
Meat Products	72.0	19.7
Milk Products	54.1	14.8
Fruit and Vegetable Products	27.6	8.2
Edible Oils	61.7	2.2
Flour Milling	66.9	3.3
Baking	47.2	2.2
Sugar/Panela	50.5	7.7
Candy Products	38.4	5.8

Source: S. Daines, El Salvador Agroindustrial Profile, Agency for International Development, 1977, p. 24.

3. Value Added

The impact of the project on value added in Guatemala is like both income and employment in that it is composed of a direct impact from the expansions of the firms that participate, and indirectly from the chain-like series of effects it causes in the broader economy. Table 15 estimates the direct value added impact of the project.

Table 15
Project Impact on Value Added: Direct Impacts

Sector	Value Added per Firm Before Project	Value Added as a % of Gross Value of Production	Total Annual Addition to Value Added Caused Directly by Project
Wood Products	$1,554	68	$823,000
Textiles	761	57	775,000
Leather and Misc.	1,027	54	745,000
Baking and Foods	1,189	45	535,000
Commercial/Serv	1,784	84	1,499,000
Small Scale	–	–	$4,377,000
Medium Scale		56	1,334,000
Project Total			$5,711,000

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

The total impact of the project on annual value added from direct production only would be 5.7 millions of dollars. No data were available for estimating the indirect impacts, but they are probably at least double the direct ones.

4. Foreign Exchange Input

The impact of the project on foreign exchange is difficult to predict, though some general estimates are possible. Table 16 presents some general estimates of the net impact on foreign exchange of the project from expenditures on equipment.

Table 16
Equipment Purchases and Foreign Exchange

Sector	% of Loan for Equipment Purchase	Value of Equipment Purchase ($)
Wood	29	$348
Textiles	24	288
Leather	13	169
Baking/Foods	30	360
Commercial/Serv.	26	312
Small Scale		$1,477
Medium Scale	35[a]	714
Project Total		$2,191

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.
[a]Estimate for medium scale not based on any original data, it is a guess of the author.

It is difficult to estimate the proportion of the equipment which would be imported. The large majority, for example, of the weaving equipment would be locally produced, while the large majority of the commercial equipment is electrical appliances (refrigerators), and would be imported. Any estimate with the data available to the analysts would be sheer guesswork. On the other side of the foreign exchange issue is that potential of project outputs to generate additional foreign exchange. The principal possibility is in export handicrafts. Twelve percent of the 8.5 millions of credit are expected to be loaned through GUATEXPRO for export handicrafts. Based on the survey, the credit output ratio in these enterprises is 1.13 in producer prices and 2.7 when adjusted to FOB values. The $1.2 millions loaned should generate at this rate $2.8 millions in foreign exchange, which would more than offset any equipment import drain by at least $1 million.

5. Effect on GNP

GNP is measured by summing the value added in each of the sectors in the economy. The GNP impact is therefore equal to the impact on value added which has already been estimated above.

II. BENEFIT/COST ANALYSIS
GUATEMALA RURAL ENTERPRISE PROJECT

A. Summary and Conclusions

The project appears from the analysis outlined below to have acceptable benefit/cost ratios and a very high internal rate of return. The benefit/cost ratio varies under alternative assumptions from 1.024 to 1.536, and the internal rate of return from 25-65.8%. Both the stability of the B/C ratio and the surprisingly high IRR would suggest that the project has strongly positive potential impacts.

B. Intertemporal Considerations

Time is a vital factor in benefit/cost analysis; the ability to deal with intertemporal values is in fact the principal advantage of this technique. It is therefore important that the time related estimates and choices be made with some care. There are four principal time-related choices in a benefit/cost analysis: first, the choice of a time horizon for both costs and benefits; second, the estimation of start-up time, disbursements and reflows; thirdly, the choice of a discount rate; and lastly, the choice of social discount rates. The discussion of social discount rates will be left to a later section, since it is the subject of a rather separate segment of the analysis.

1. Time Horizon for Benefits and Costs

Benefits from a successful analysis will continue on in some form almost without end; costs will also linger in many direct and indirect forms for at least a generation or two. It would appear, therefore, that the time horizon for benefit/cost analysis should be likewise endless or at least two or three generations in length. Two reasons make such a long-time horizon unnecessary. First, discount rates, especially those over 10%, imply an insensitivity to long-run impacts, even if they could be estimated with some security they would make little difference in the ratios themselves. At a 15% discount rate, a dollar of benefit thirty years from now is worth only one cent today; benefits occurring that far away have little influence on benefit/cost ratios. Secondly, there is usually a useful life to the type of investment which the project seeks to put in place and that useful life makes a natural time period in which to consider the costs, and with some slight stretch in concept, the benefits of a project. In the case of the rural enterprise project, that system is a fixed installation of equipment, machinery and facilities for small scale rural enterprises. To be sure, a wide variety of other elements is necessary. The capital base is not the whole, or even almost all that this project is about, but it does give us a reasonable time horizon to use most obviously for costs because the equipment will have to be replaced when its useful life is over, but also for benefits since if the benefits are not reasonably complete by the time the capital base wears out it will be difficult to sense them accurately, and their impact will be minimal on the ratios even if measurable.

Equipment lasts longer if it is maintained well, different types of machinery last longer than others, yet engineers and economists alike have learned to live with 15 years as a useful life estimate for fixed (non-vehicular) machinery of mixed types. This analysis is based on the assumption that benefits relevant to the project will mostly have occurred in a 15-year period, chosen to coincide with the useful life of the mix of equipment and facilities which are partially to be financed with the loan funds.

2. Disbursement Patterns and Reflows

Project funds will not all be disbursed at once, and most benefit/cost analyses project these projected disbursement rates over the life of the project. If disbursements in the first year will go for different costs than disbursements in years 2, 3, etc., then disbursement timing and reflows require careful projection. For example, if an irrigation project is being analyzed, it is important to project carefully the timing of costs and reflows over a long period of time.

In the case of the rural enterprise project, the analysis can proceed as if all disbursements had taken place in the first year since each loan is a separate financial entity, identical as far as the analysis can distinguish from every other loan. Each of these disbursements creates a time flow of benefits and costs which will not depend when it starts. For this reason, the timing of disbursements and reflows, as important as they are to project planning, are irrelevant to the benefit/cost analysis.

3. Discount Rate

In order to put costs and benefits which occur at different times on equal footing, a discount rate is required. The selection of the discount rate is important because of its influence on the final ratios. Different projects will get different scores on the B/C ratios both absolutely and relatively, that is, a high discount rate will not simply reduce the ratios evenly on all competing projects, but may also cause their relative position to change, a project which at the lower discount rate was the most attractive vis a vis others, may now become the least or perhaps in the middle.

Higher discount rates tend to favor those projects with shorter start-up times and earlier benefits, lower rates those with larger benefits but further away in time. Two concepts may be used to select a discount rate, a time horizon criteria which asks how long range the planner or project selector wishes to value benefits, or secondly, a concept of the opportunity cost of capital. The second approach is the one most often used in AID B/C analyses. It seeks to establish what the non-risk investment alternatives are in the project country in the private money markets. The assumption is that project funds must produce at least as much as this market rate of return or it would be better for the country to simply place the added money on this market. While this approach ignores much of the complexity of AID's mandate thinking, it is still a much used and respected technique. For this project, two rates will be used: first, a market rate estimated at 15% real (approximately 20% nominal), and secondly, a social discount rate of 6% real used to expand the time horizon and minimize the short view of the private money markets in Guatemala.

C. Benefits of the Small Scale Rural Enterprise Project

1. Expansion of Output and Income

There are two kinds of benefits anticipated from the rural enterprise project; first, those income, employment and output benefits which come from the expansion of the participant enterprises at their current levels of technology and profitability. The second set of impact is those which are anticipated from changes in that technology in increased productivity and profitability.

Benefit/cost analysis is a very flexible analytical tool; in its flexibility lies both its strengths and weaknesses. If the benefit estimates made as a basis for the analysis have some empirical foundation and statistical reliability, the results can be very useful. If the estimates are simple expert judgements or hopes, there is little advantage in providing the extra gloss of the benefit/cost technique to dress them up. Considerable data exist in this project case to estimate the benefits from expansion, but very little exist which could help to estimate the benefits from changed technology since both the costs required to make significant changes and the magnitudes of benefits which would take place if these changes were made are essentially unknown. That there is a necessity for this element in the project is clear, and that it has considerable hope for success is also reasonably clear from the judgements of those experts who have thought the problem through with abundant field familiarity. Those judgements could have become the basis for quantitative estimates for this analysis, but the arithmetic of benefit/cost would have added little light to the basic level of knowledge on this element in the program and would have misled project reviewers.

The part of the program which will be analyzed here is that part which relates to expanding the small scale rural enterprises through extending credit to them for the purchase of annual cost inputs and for expanding the investment base in equipment and facilities.

The assumption will be that the results of an additional dollar of output in income terms will be identical to the last dollar of output. This assumption of linearity in the projection function has an important exception which will be adjusted for. This is the fact that while an added machine identical to one already operating would be expected to produce the same amount at the same real cost as last year, the cost of the machine itself is significantly more than was the original machine bought years ago. This difference between book value and replacement value of equipment and facilities has a significant impact on the profitability and income impact of the project. A 10% increase in the value of all inputs (including equipment) will not therefore cause a 10% increase in output because the 10% increase in value will buy less physical equipment than it would have at book value. The increase in output will be something less than 10%, the difference being the cost differential between book and replacement values weighted by the proportion which equipment represents in total fixed and working capital.

In order to estimate the increase in output (producer price sales), it is necessary to adjust the apparent expansion of each type of industry as was explained above. Table 17 presents the estimates of incremental benefit produced by the project. Since no data are available to make these estimates for the medium scale enterprises, no benefit/cost analysis

will be conducted of these firms. We will assume that they are at least as profitable and not significantly less beneficial to the target group than the firms analyzed.

Table 17
Estimates of Incremental Output in Small Scale Rural Enterprise Loan Participants

Sector	No. of Firms	Cost Differential Portion of 1$ Lost to Increase Equip. Prices	Adjusted Expansion Factor	Historical Output per Firm	Incremental Project Output per Firm	Total Incremental Output
Wood	504	.5633	1.675	$2,283	$3,824	$1,927
Textiles	1,500	.2456	0.922	1,334	1,230	1.845
Leather	609	.4949	1.910	1,892	3,613	2,202
Foods	619	.5700	1.949	2,687	5,237	3,241
Commerce	930	.3982	0.972	2,099	2,040	1,897
All Firms	4,162					11,112

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture, and BANDESA.

Table 17 assumes that firms will receive the share of credit from the loan by sector according to their natural appearance in the universe of small scale enterprises and the quantities of credit requested. This would result in a total of 4,162 firms participating in the small scale category and receiving a total of 6.1 millions of loan funds. The total value of incremental benefits caused by the project annually (when all money has been disbursed and all firms are included) would be $11.1 million dollars of gross (producer price) value of output. This is not the same as net benefit since costs have not been subtracted. In benefit/cost analysis the benefits are maintained in the numerator in their gross form with costs placed in the denominator.

While the analysis simplifies the timing of disbursements, assuming them all to take place in the first year, without prejudice to the final ratios, this is not so simple with the issue of start-up time inside the firms themselves. To adjust for this phenomenon, two alternative computations are made. First, assuming that firms would be able to make these incremental adjustments in the course of one business year, the other assuming that during the first year only two-thirds of the incremental output would result, but that all investment and annual costs would be incurred and 75% of labor costs. This second alternative allows for the possibility that the firm may pass through a phase in which the profitability decreases, when additional resources are not as well organized as the old ones, and in which output does not increase proportionately.

2. Indirect Benefits

In the economic analysis section, considerable attention was given to estimating indirect income and employment benefits outside the project participant group. While these estimates could have been integrated without much additional effort to the benefit/cost analysis, corresponding cost estimates for the indirect benefits would be impossible. The

inference that this project alone causes all of those other benefits is inaccurate, and so would be the benefit/cost ratios were they to include just the benefits and not the other indirect costs. It is preferable to deal with indirect impacts outside the benefit/cost structure, and while not ignoring them here, not attempting to integrate them into the arithmetic directly.

D. Benefit/Cost Ratios

1. Alternative 1

An endless variety of permutations may be elaborated for benefit/cost analysis, each having a slight variation from the preceding one. While they make interesting employment for analysts, their variety can often serve to confuse rather than illuminate the project review process. For this analysis, only three basic variations will be presented. The first, presented in Table 18, presents the minimum basic ratios whose principal feature is that both added family labor and hired labor are costed at the market wage.

Table 18
Minimum Basic Benefit/Cost Ratio for the Rural Enterprise Project

	Year 1	Years 2-15	Present Value at 15% Discount Rate	Benefit/Cost Ratio
Incremental Project Output $ 000	$11,112	$11,112	$57,754	
Incremental Project Costs				
1. Hired Labor[a]	$ 1,467	$ 1,467		1.024
2. Family Labor[a]	3,324	3,324		
3. Other Annual Costs	5,514	5,514		
4. Investment	3,275	—		
Total Added Costs	$13,580	$10,305	$56,400	

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.
[a]Valued at the average monthly wage for hired labor in this sector and farm size.

This estimate of course underestimates family income benefit because the added labor which the family puts into the business need not be subtracted as cost unless other income is foregone. Even using this conservative valuation technique for family and hired labor the project has a positive, that is greater than 1, benefit/cost ratio. The ratio is, however, very nearly 1, and while labor is costed in a disfavorable way, the case presented in Table 18 is not the most disfavorable in all respects. For example, all incremental output is assumed to occur in the initial year; were this assumption to have been carried as it is in the other two alternative computations, the ratio would have probably dropped below 1.

2. Alternative 2, Shadow Priced Labor and Slower Start-Up

Alternative 2, presented in Table 19, provides for two major changes. First, the family and hired labor is costed at a shadow price equivalent to the average rural employment rate of

42%. Secondly, the project in each firm is given a start-up period of two years. During the first year all investment costs are incurred, full values are included for raw material and other annual inputs, but output is shown as increasing only two-thirds of its proportionate value. Labor in this first start-up year is shown at three-fourths of its proportionate value to represent a slight decrease in the productivity of labor while adjustments are made for new employees, and while new or added labor from family members is trained and integrated into the business operation. The shadow pricing of labor inputs will be discussed in a separate section below.

Table 19
Alternative 2, Benefit/Cost Computations for the
Rural Enterprise Loan, Guatemala

	Year 1	Years 2-15	Present Value at 15% Discount Rate	Benefit/Cost Ratio
Incremental Project Output ($000)	$7,333	$11,112	$54,678	
Incremental Project Costs				
1. Hired Labor[a]	462	666		1.305
2. Family Labor[a]	1,046	1,396		
3. Other Annual Costs	5,514	5,514		
4. Investment	3,275	–		
Total Incremental Costs	$10,298	$7,576	$41,746	

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

[a]Family and hired labor are valued at 42% of market wage to reflect the opportunity cost of labor estimated by the average employment rate in rural Guatemala.

The benefit/cost ratio of 1.3 is considerably higher than the minimum impact alternative presented in Table 18, indicating the stronger influence in the computations than increasing the start-up time.

3. Alternative 3, Including Technical Assistance as a Cost

There are two kinds of technical assistance, one which is related to the loan, its disbursement and repayment, and which might be thought of as credit retailing. The second kind of technical assistance in this loan project is legitimate industrial extension where the intent is to change the technology of the firm or improve its managerial practices. The first kind of assistance is normally considered to be a part of the interest rate charged by financial institutions and should be accounted for in benefit/cost analysis by the selection of an appropriate discount rate in normal cases. This project presents differences to normal banking situations which may warrant at least an examination of the impact on the benefit/cost ratio of the excessive banking administration which will likely be a part of a rural outreach credit mechanism

like the one envisioned here. The reason for including credit retailing overhead as a cost is that it is unlikely that the interest rates will in fact provide the necessary spread to cover these additional costs and they are therefore real incremental costs of this project. The cost chosen is that found in the B. Roach paper on financial analysis as the necessary administrative overhead of small scale rural enterprise lending, 8% of the total portfolio.

An additional change is made in the third alternative computation, that is to value family labor at a shadow price of zero, while leaving hired labor at its market opportunity cost. One of the reasons for this alteration is that labor by children under 15 years in many industries is significant in unpaid family labor but almost non-existent in hired labor. In commercial enterprises, for example, there are 75% as many women under 15 working as unpaid family laborers as there are women over 15. The implication of this valuation is that a significant part of the additional family labor which would be used if the family enterprise were expanded would come from family members who are less employment mobile than the average rural adult worker. Women who may be unable due to family responsibilities to work outside the home may become employed if the family business is expanded, and children who may not be a part of the non-family labor force may be drawn into employment.

Table 20
Alternative 3, Benefit/Cost Computation for the
Rural Enterprise Project: Guatemala

	Year 1	Years 2-15	Present Value at 15% Discount Rate	Benefit/Cost Ratio
Incremental Project Output ($000)	$7,334	$11,112	$54,467	
Incremental Project Costs				
1. Hired Labor	462	$ 666		1.459
2. Family Labor[a]	—	—		
3. Other Annual Costs	5,514	5,514		
4. Investment	3,275	—		
5. Technical Assistance[b]	488	488		
Total Incremental Costs	$9,739	$ 6,668	$37,328	

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

While it is difficult to see the independent influence of each altered factor, the alternative of having a variety (in this case, 25 alternative computations) of alternative tables in which each factor is shown changing alone is inadvisable because of the increased volume of numbers to assimilate. This last alternative is the one which the analyst feels most accurately reflects the project realities and potentials, along with realistic representations of resource scarcities in the Highlands. The benefit/cost ratio of 1.459 provides a realistic measuring stick with which to judge this project against others with comparably derived data.

E. Social Discount Rate

The literature on both the methods and conceptual basis for using a discount rate which is different from the market opportunity cost of capital is both too lengthy and too controversial to enter in a study as modest as this. It is worth saying only that many analysts and central planning agencies in both developing and developed countries have found it useful to compute and use social discount rates for benefit/cost analysis. These rates should reflect the public time preference for benefits and are generally lower than the market opportunity cost of capital. The social discount rate does not simply make all project alternatives appear to have higher benefit/cost ratios, it also changes the relative position and in some cases rankings of projects.

The social discount rate chosen below, 6%, was not based on any systematic data, nor on the preference of the Guatemalan Planning Council. It was selected by default by the analyst in the absence of either on the basis that it is similar to the SDR used by many developing countries. Table 21 presents the benefit/cost ratios for the three alternative computations and indicates the change in the absolute difference between the assumptions which underlie each alternative.

Table 21
Benefit/Cost Ratios with Social Discount Rate

	Benefit/Cost Ratio at 15%	Benefit/Cost Ratio Social Discount Rate = 6%	% Difference
Alternative 1 Assumptions 1. Labor at Market Wage 2. No Start Up	1.024	1.044	2%
Alternative 2 Assumptions 1. Labor at Shadow Wage 42% 2. Two-year start-up period	1.305	1.365	5%
Alternative 3 Assumptions 1. Hired Labor at Shadow Wage 42% 2. Family Labor at Shadow Wage Zero 3. Two-year start-up period 4. Tech. Asst. at 8% of Loan	1.459	1.536	5%

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

There are only slight differences between the benefit/cost ratios with the use of a social discount rate. This indifference to discount rate is probably caused principally by the short 15-year time horizon; it is mostly for long-range projects that the differences are substantial.

F. Internal Rate of Return

The internal rate of return approaches the issue of a discount rate from the opposite side, and asks what is the discount rate at which the *net* present value of benefits is equal to zero. That is a measure of the break-even discount rate at which the project makes sense as an investment. If the IRR is lower than what is thought to be either the market opportunity cost of capital, or the social discount rate, the project would be suspect. As Table 22 indicates, the internal rates of return for all of the project benefit/cost alternative computations are high, the lowest being 25%.

Table 22
Internal Rate of Return Calculations

	Internal Rate of Return
Alternative 1 Assumptions	
1. Labor at market wage	25.0%
2. No start-up period	
Alternative 2 Assumptions	
1. Labor at Shadow Wage of 42%	59.6%
2. Two-year start-up period	
Alternative 3 Assumptions	
1. Hired Labor at Shadow Wage of 42%	
2. Family Labor at Shadow Wage Zero	64.8%
3. Two-year start-up period	
4. Tech. Asst. at 8% of loan	

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

III. EVALUATION PLAN

A. Project Objectives for Evaluation

1. Household and Firm Level Impact Objectives

a. Income

Perhaps the core objective of this project is to increase the incomes of the rural poor target group. The households to be benefited include both owner/operator families and the families of landless and enterpriseless workers. It is vital that the impact of the project on the income of these families be evaluated.

Income is defined as net of all current and capital expenses, but to include nonmarket income in the form of payment in "especie."

b. Employment

The employment objective should be evaluated in terms of the added man-days of productive labor created by incremental project inputs. It is important that the household be the unit for evaluation since there are many competing labor demands which may be impossible to measure except at the household level.

c. Profitability, Productivity and Technological Change

An important project objective is to improve the technological base of small scale enterprises and thereby increase their profitability and resource productivity. Capital resources are probably *the* scarce resource in Guatemala, the productivity of capital is probably the most important single measure of efficiency and should be used to evaluate the impact of this project.

d. Output

One of the basic strategies of this project is to increase welfare through expanded production in small scale enterprises. The evaluation of the actual output increase caused by the project is therefore a central issue for measurement. Output should be measured in both volumes, and valued quantities at producer prices.

2. Institutional Objectives

The intermediate mechanisms by which all of the firm and household level objectives are to be reached are credit and technical assistance. It is therefore important to measure the quantities and qualities of the technical assistance and the credit. Institutional structures influence and are influenced by the loan project and its technical assistance requirements. Institutional objectives may be evaluated in three ways.

First, an organizational review may be made by experts to identify apparent institutional success, to identify obvious bottlenecks in the institutional structure, and to evaluate institutional growth and development.

Second, accounting data can be developed to track institutional performance and the costs of that performance. A series of institutional performance ratios would be developed by this evaluation and are described in the methodology section below.

Thirdly, institutional performance must be linked to firm and household level performance; it is not enough that the organization run smoothly, that apparent institutional efficiency must be linked to the household by measurements of its impact on final income, employment and productivity.

B. Control Group Comparisons: The Basic Methodology for Evaluation

1. Longitudinal Control: Before and After Project Comparisons

Since credit and technical assistance are the basic project contributions, comparisons of firm level performance before and after these interventions will be the basic method of evaluating project impacts. A survey will be taken of entering firms after they have indicated interest in the project but before they have received project inputs. These data will provide a base line for comparison later after they have participated.

The methodology will simply measure the above-mentioned performance indicators (income, employment, profitability, productivity, technological level) both before and after project participation to estimate project caused change. Differences before and after will be further verified by calculating the "student t" test estimating the statistical significance of the observed difference.

2. Cross Sectional Control Group

Many changes besides this project are taking place in the Guatemalan highlands. Product prices are moving in ways not entirely predictable, markets are changing, weather may affect agricultural output and employment, populations are migrating and government policies may change the supply of competing credit and technical services. This list could go on endlessly and simply illustrates that many exogenous influences could change income or employment of target group households besides the subject project.

In order to control for these changes in the environment which are not associated with the project, a cross sectional control group will be selected which will provide a way of sorting out the environmental changes which may influence income but which are not associated with the project interventions.

This control group will be selected at the time of the base line survey, one match firm for each project participant firm selected for inclusion in the sample. Both groups will get the same questionnaire and will be given the same follow-up survey so that both cross-sectional and longitudinal comparisons can be made in each group.

Examples of the way cross-sectional controls would be used are indicated below in tables taken from an analysis of credit impact on small farms in Guatemala.

Table 23
Comparisons of Value of Output per Arable Hectare
by Farm Size and Credit Class

	Q of Output per Arable Hectare Average for All Farms Sampled = 100	
	Credit Farms	No-Credit Farms
Farm Size		
Small		
0-1 Ha.	548%	201%
1-3 Ha.	180%	173%
3-5 Ha.	135%	125%
5-10 Ha.	136%	133%
Large		
10-20 Ha.	94%	89%
20-50 Ha.	96%	84%
50-100 Ha.	29%	85%

Table 24
Net Real Income per Family Laborer on Small Credit Farms
as a Percent of Comparable No-Credit Farms for the
Central Highlands Region, by Farm Size

Farm Size	Credit Farms As % Of No-Credit Farms (No-Credit = 100)
0-1 Ha.	432
1-3 Ha.	100
3-5 Ha.	504
5-10 Ha.	107
All Small Farms	163

3. Control Grouping for Analysis

Besides the control groups for before and after, and cross-sectional control of exogenous influences, control groupings will also be used for analytical purposes. These analytical control groupings will be of three major classes.

a. Technical Assistance Test Groupings

In order to test the effectiveness of different quantities and types of technical assistance, grouping participant firms by the number of TA visits would provide a basis for

assessing the impact of different kinds and levels of technical assistance. An example of how this comparison would be made is shown below in a table taken from the 1974 small farm credit evaluation study in Guatemala.

Table 25
Land, Labor and Capital Productivity by Amount of Technical Assistance and Credit Type

	No Technical Assistance		1-4 Visits		5-9 Visits		10+ Visits	
	Credit	No-Credit	Credit	No-Credit	Credit	No-Credit	Credit	No-Credit
Land Output Productivity								
Q of Output/Ha. Cultivated	216	264	250	294	231	276	279	411
Q of Output/Ha. in Farm	145	162	164	200	177	245	217	259
Capital Output Productivity								
Q of Output/Q of Capital	.26	.37	.33	.34	.33	.34	.35	.36
Labor Output Productivity								
Q of Output per Available Laborer	1034	960	1292	760	1335	1331	1589	3102
Q of Output per Man Day of Labor Utilized	3.87	4.81	3.87	5.41	3.97	5.68	5.04	8.37

b. Institutional Types

A wide variety of institutional types are to be used in this loan for the distribution of credit ranging from banks to cooperatives. This provides an important opportunity, not just for this project but for development knowledge in general, to examine the differences in the performance of these different modes of credit and TA retailing. Sampled firms would be grouped according to the type of institution providing the credit and measures similar to those indicated in the TA table on the last page would be made.

c. Firm Type, Sector and Economic Groupings

It is already obvious from the survey made in 1978 that there are important differences in the technology, profitability, and general economic characteristics of firms in different sectors. The evaluation will have to keep these differences in mind and make an examination of the differential project impacts by sector a separate theme and the subject of separate control groupings.

4. Explaining Differences in Performance: Indices of Attribution

There are many statistical techniques which have been developed to explain and analyze differences between control groups and test groups, and beyond that, to measure the association between cause and effect where variation inside these groups is the only insight available.

Regression, production function, and mathematical programming models are mong the most fashionable. For this evaluation only one analytical technique beyond the "student t" test would be used in order to reduce costs and time required to reach substantive conclusions. This technique involves the elaboration of indices to attribute the "cause" of a particular performance objective.

Perhaps the easiest way to describe this technique is to illustrate it with an example from the Guatemala small farm evaluation. The table below indicates the result of such a computation.

Table 26
Sources of Increased Production on Credit Farms by Farm Size
(Percent Superiority in Credit Over Non-Credit Farms)

Farm-Size Class	Superiority in Total Output per Farm	Sources of Difference in Output				
		Difference in Land Use		Difference in Crop Composition (Higher Value Crops)	Different Technologies	
		Increase in Farm Area	Intensification of Land Use[b]		Increased Yields	Increased Prices (Marketing & Quality Differences)
0-1 Hectares	147%	6%	-8%	154%	-4%	-1%
1-3 Hectares	37	9	10	15	1	2
3-5 Hectares	20	1	15	-8	15	-3
5-10 Hectares	12	3	14	-1	2	-6
10+ Hectares	17	7	18	-1	0	-7
All Farms[a]	32	17	18	0	-3	0

[a]The percentages for all farms are not simple averages of the farm-size values. The larger farms receive greater weight in proportion to their size and number.
[b]This may be subdivided into "proportion of area cultivated," "Multiple Cropping" and "interplanting" effects.

The table indicates that on 0-1 Ha. farms (in this project case this would be farms of a particular scale or sector) output increased 147% over the no-credit control group. Of this 147% increase, 8% was "caused" by an increase or difference in the farm area, and 154% by changes or differences in crop mix. Yields on credit farms were actually lower than on non-credit farms and this drop in yield explains or accounts for -4% of the 147% increase. When all of the percents are added they sum to the 147% increase in production which the table divides among the contributing factors.

The example is given explaining only one of the objectives (increased output) of this project. Similar indices can be created for income and employment as well.

The method for this elaboration of indices is given below in the excerpt from the earlier mentioned document. This part of the methodology was developed by Hunt Howell, then of the Latin America Bureau of AID. This methodological description can be found in Appendix A, at the end of this paper.

C. Institutional Review

The institutional review would attempt to develop the three types of evaluation mentioned above. Only the last, accounting ratios, needs any additional methodological discussion.

1. Overhead Cost of Credit

A simple ratio indicating the total overhead cost incurred per $ of credit extended to the firm would be developed and used to compare the performance of different institutions and different stages in the project disbursement process.

2. Overhead Cost of Technical Assistance

A ratio with the total cost associated with technical assistance in the numerator, and number of final client visits in the denominator would be used to track institutional performance in the provision of an outreach system for technical assistance.

3. Bad Debt Management

Traditional ratios used in this area are sufficient to give a good measure of performance. Ratios relating both delinquency, and default to total portfolio are probably the most useful.

4. Graduation Rate

A ratio indicating the proportion of borrowers who are successfully graduated to private sector credit institutions would be used as an indicator of institutional performance in completing the cycle of preparing the entrepreneur and the system for non-project dependent operation.

D. Data for Evaluation: Base Line and Follow-up Survey

A survey would be undertaken of potential clients and a match of similar firms before their involvement in the project. The size of this sample is determined by the desired level of dissaggregation in the analysis. This level is indicated as follows:

1. Firm Size 2 levels (small scale, and medium scale)
2. Sector 3 Types

This is the minimum grouping pattern; for all of the other groupings indicated in the methodology, these primary grouping patterns would have to be disregarded. For example, it would be possible to have six sector types, if the firm size distinction is disregarded. The maximum number of groupings would be six for any single test.

This number of groupings implies a minimum sample size of 200 experimental firms (credit and/or TA participants) and 200 control firms.

The first survey would be taken between the time that a significant number of clients are identified, and the time that credit is given to these clients. Sampling would be done by SRS (Simple Random Sampling) based on client lists. Matching would be done in the field on a geographic specific area in which interviewers are given major control criteria and search for the nearest firms fitting the criteria.

Match criteria would be: 1. Firm size, 2. Sector, 3. Technological type. These criteria would be controlled for within pre-set limits established in the interviewer's manual.

The questionnaire would be developed to fit the analytical requirements outlined above, but should not be more than 45 minutes in field application per firm.

E. Budget

1. Survey Costs	
a. Sample design	$1,000
b. Field work (at $8 per observation), two surveys 400 firms each	6,400
c. Questionnaire design and test	2,000
d. Interviewer manual development	2,000
e. Formatting and printing	2,500
f. Coding and revision	1,500
Total	$15,400
2. Processing of Survey Results	
a. Keypunching and verifying	1,500
b. Computer programming	3,000
c. Computer services	5,000
Total	$9,500
3. Institutional Evaluation	
a. Evaluation personnel (2 pm, 1 at midpoint in disbursement, 1 after project completion Costs estimated at $7,000/pm including salary, per diem and travel	$14,000
4. Analysis and Writing of Evaluation Report	
a. Economist/Industrial Analyst (2 pm)	$14,000
Total Evaluation Costs*	$53,000

*These costs are net of overhead in the event that AID personnel are not available for these functions and that personal service contractors cannot be found.

IV. CREDIT DEMAND

A. Summary and Conclusions

1. Small Scale Rural Enterprises

The studies outlined below indicate that rural enterprises with less than 10 workers in the target area have a currently unmet demand for credit of US$25-30 millions (actual study estimate $28.4 millions). Of this demand slightly less than half was for medium and long-term investment capital, and just over half for short term annual production credit. This estimate is based on a survey of 568 randomly selected small scale enterprises in the target area and represents the average of their requests for credit.

Only an estimated 7.7% of small scale enterprises received any institutional credit in the last five years, indicating the almost total absence of any institutional presence in supporting small scale enterprises. Even when existing informal credit channels are added it would appear that only about 14% of the small scale enterprises have non-family credit support.

The importance of credit as a constraint on expansion of small scale enterprises is illustrated by the fact that 77% of the firms sampled indicated that credit was either their first priority (64%) or second priority (13%) constraint to expanding production. Only 8% identified demand or market availability and 5% unavailability of primary material as first priority constraints. At least in the minds of the small scale entrepreneur credit is the most important factor limiting his expansion. Given the additional fact that profitability is generally quite high (rate of return to family capital and labor averaged 71% for all enterprise types), it is likely that expansion would be profitable without significant alterations in internal technological practices, i.e., the entrepreneur's perception that credit not technology is the principal constraint may be credible.

Only 18% of small scale enterprises feel they would have difficulty marketing additional output, 8% see demand as a first priority constraint and 10% as a second priority. While it may be true that many single firms in the same market may perceive that the market could accept additional output, if all such firms were to in fact expand, the market would not likely be able to absorb all of the production. In order to estimate the degree to which the market could absorb the additional output implied by the additional credit requested, a separate estimate was made based on global market demand growth estimates of the quantities of credit absorbable in the target area by small scale enterprises. Based on historical growth rates, it would appear that approximately US$15 millions of credit could be absorbed annually before reaching consumption demand constraints. This estimate implies an *annual* increment in absorbable credit demand, while the earlier $28 millions of requested credit includes 50% medium and long term credit. Therefore, demand would not appear to be a binding constraint which would lower the apparent demand indicated in the earlier paragraphs.

2. Medium Scale Rural Enterprises

Estimating the additional demand for credit among medium scale rural enterprises (those over 10 workers) is more difficult since no direct sample survey was undertaken of firms in this group in the target area. While the data and method for these estimates are weaker, the need for precision is also less important. Medium scale firms are likely to have established commercial connections which will make access through project channels much easier; both the banks involved and the firms will require less credit promotion in order to determine actual demand.

From data presented below it appears that credit supply in the food products sector has failed to keep pace with the needs of the sector. Credit supply in the other major sub-sectors for medium and large scale enterprises appears to be less inadequate, and may be growing almost rapidly enough to supply demand. These non-priority medium scale sub-sectors include textiles, clothes, shoes and wood products. It should be remembered that the figures used are for all medium and large scale enterprises; this project focuses on rural and medium scale enterprises, and it is therefore likely that many firms in the project target area and scale have unsatisfied demand for credit even while the average firm nationwide in these sectors does not.

In the food products sub-sector, substantial latent demand for credit appears to exist among medium and large scale enterprises. Because of the concentration of medium and large scale firms in areas outside of the target area (in Guatemala city and the Coast), only a small portion of this demand is relevant for this project. The credit demand in this sub-sector may be attributed to three factors. First, the value of credit extended to firms in this class in real terms historically decreased over a five-year period at an annual rate of $889,000. Second, projected growth in this sector over the loan period is estimated at 6.69% per year, which would imply an annual increment in credit demand of $4.4 millions. Lastly, the foods sector is credit-scarce compared to all other enterprises; simply to bring the credit intensity of these food product firms to the average level of comparable other firms would require an additional one-time credit input of $45.6 millions. Assuming that only one-fourth of this incremental demand occurs inside the target area in eligible food product firms, the resultant demand would amount to $1.3 millions annually or $5 millions over the loan period and a one-time demand of $11.4 millions. Total medium scale demand would be estimated at approximately $15 millions.

B. Methodology and Data for Credit Demand Estimates

1. Analytical Alternatives for Estimating Credit Demand in Small and Medium Scale Rural Enterprises

A limited number of analytical approaches may be used to estimate the demand for credit in rural enterprises. Each of these alternatives implies a different set of data and analytical method. The first alternative would be to ask the entrepreneurs if they need additional credit and to use their preceptions as the basis for the estimate. While this alternative in its simplest form may be conceptually weak, a variety of refinements may enable the analyst to make reasonable estimates based on firm level preception data. A second alternative is to use

firm level accounting information to estimate "advisable" or "optimal" credit operating ratios and then estimate latent demand as the amount of credit required to raise firms below this level up to the advisable credit/output ratio. A third alternative is to elaborate a quantitative model of representative or statistically average firms which will estimate the break even level of credit, i.e., that level of credit at which the net revenue product of an additional unit of credit is equal to the cost of obtaining and servicing the credit. A fourth alternative is to measure average credit/output ratios and then project growth in output or demand for product; the demand for credit would be equal to the increment in output times the credit/output ratio minus the projected natural growth in credit supply.

The second alternative is the most costly in both data and analysis terms, and was not, therefore, used in this study. Estimating the absorptive capacity of the firm for additional credit from firm level econometric models in Guatemala resulted in estimates not widely divergent from the entrepreneur's perception of credit need in an analysis of 1600 small farms. While small non-farm enterprises may be different, the experience with small farm estimates would indicate that both perception and econometric results provide roughly similar quantitative results. The interested reader is referred to S. Daines et al., *Análisis del Impacto del Crédito de Fincas Pequeñas Sobre Ingreso, Empleo, y Producción agropecuaria,* where a linear programming model was used to estimate firm level demand for credit in small Guatemalan farms.[1]

Refining the process of asking the entrepreneur about his possible need for credit involves both sophisticating the process of questioning itself, and building secondary checks on both the accuracy and credibility of the response. In the case of the survey conducted for this project of 568 rural small scale enterprises, the credit demand question was approached in two ways. First the entrepreneur was asked about his interest in obtaining additional financing at existing interest rates and terms and his ability to make enough money from the credit to pay it back in time and leave him some profit. The second approach was to explore his perceptions about the factors which limited his ability to expand or improve his business in which credit was only one of many possible constraints. This approach was to explore how credit ranked with other limiting factors such as marketability, availability of primary material, skilled craftsman labor and other reasons which the entrepreneur might suggest.

Cross checks on these two methods of demand estimates were included in the form of questions to determine how specific the ideas of the entrepreneur were about what he would use the additional credit for, how profitable his current business is and therefore how beneficial an expansion would be, and how realistic his market demand estimates are.

The estimation of advisable or optimal credit operating ratios was used only for medium scale firms where more satisfactory estimates were impossible due to the lack of detailed firm level data.

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[1] S. Daines et al., *Análisis del Impacto del Crédito de Fincas Pequeñas Sobre Ingreso, Empleo, y Producción Agropecuaria,* Volumen IV, AID y Secretaría del Consejo Nacional de Planificación Económica, Guatemala, 1976, 133 pp.

The fourth alternative, using demand estimates for product and average credit/output ratios was used based on survey data for the ratios and National Planning Council data for market demand and growth estimates.

2. Data Utilized in the Credit Demand Estimates

The following paragraphs describe in brief the survey and other data used for the demand and economic impact analysis of this project. More complete descriptions of sampling, survey instrument, and analysis procedures are contained in Annex B. The principal data source for these sections is derived from a survey conducted with AID mission personnel, BANDESA interviewers, Ministry of Agriculture Sampling assistance and supervisory assistance, and under the general technical direction of Samuel Daines. Dr. Gary Smith and Irma de Ibarra, both of the Ministry of Agriculture, were responsible for the actual survey.

a. Sample Procedure for the Survey

The sample was based on the area frame underway in the Ministry of Agriculture. A subsample of 14% of the urban and rural segments in the target area was selected (85 out of 611 segments) and 2,728 households were enumerated to identify non-farm small scale rural enterprises. Out of these enumerated households, 568 small scale enterprises were identified and given the full interview.

b. Content of the Interview

The interview elicited 17 classes of information on the firm, seven of which related to credit, savings, and constraints on expanded production. The other questions related to employment, income, assets, energy, and costs of production.

c. Processing

The processing of the data was conducted by Samuel Daines in the U.S.

d. Other Data Sources

Other data sources included information from the National Planning Council, the Dirección de Estadistica, the AID F. Mann report, industrial census and other minor sources.

C. Credit Demand of Small Scale Rural Enterprises

1. A Profile of Target Area Small Scale Enterprises

a. Target Group Definition

A comprehensive classification of Guatemalan municipalities by economic development level was elaborated by F. Mann under contract to the USAID mission and provides the framework utilized for the definition of the target group area to be included in this loan. Those

departments which are composed of principally "sub-marginal" municipalities by the Mann criteria were considered to be a part of the target area for this project. Target group firms are divided into two distinct classes. The first class, termed "small scale," includes firms with ten or less workers, the second class called "medium scale" includes firms with ten to twenty workers. By far the largest group of target firms is in the small scale class, and since they are likely to be poorer, the project attempts to concentrate both resources and general focus on these firms, while at the same time allowing for some involvement of medium scale rural enterprises.

The target area covers most of the central and western highlands with some added departments in the southeast highlands area. The profile which follows deals with only the small scale firms since no direct field data were gathered on medium scale enterprises, and no available data sources would allow for a comparably detailed treatment outside the small scale class.

b. Numbers of Small Scale Enterprises in the Target Area

There are an estimated 31,000 small scale enterprises with less than ten workers in the target area. As Table 27 indicates, the largest numbers of these enterprises are involved with the spinning, weaving and sewing of textiles; 37% of all enterprises are so dedicated. Commercial enterprises of all types, small shops predominating, account for another 24%.

c. Size of Firms

The average size of the firms varies from 2.79 workers in leather and miscellaneous products to just under 2 workers (1.9) for commercial enterprises. These averages imply a total employment of almost 75,000 persons, with 40% of the employment in textiles activities.

Table 27
1978 Guatemala Rural Enterprises
Small Scale Firms

Sector	No. of Firms	No. of Workers	Ave. No. of Workers/Firm	% of Firms	% of Workers
Wood Products	3,113	6,661	2.14	10	9
Textiles	11,636	29,673	2.55	37	40
Leather, Maguey, etc.	4,124	11,506	2.79	13	15
Baking/Food Prod.	4,799	12,717	2.65	16	17
Commercial Services	7,414	14,161	1.91	24	19

Source: S. Daines computations based on data from 1978 Rural Enterprise Survey by S. Daines, G. Smith and Ministry of Agriculture, and data from F. Mann paper, p. 30, AID, 1978.

Small scale enterprises provide the basis for much of the commercial and economic life in the highlands of Guatemala. Indian and Ladino alike are important as both owners and workers in these establishments. The large numbers, almost 75,000 firms, imply both broad geographical dispersion and severe problems of access for project activities. To simply reach these firms with any kind of service is at once a challenge to already overtaxed outreach capacity, and an opportunity to capture the inherent entrepreneural energy in this broad a segment of the rural poor.

2. The Importance of Credit as a Constraint on Expansion and Income of Small Scale Rural Entrepreneurs

As was explained in the methodology section, one approach to estimating the demand for credit in small scale rural enterprises is to attempt to explore the constraints which impede the expansion of these enterprises and the increase in their income. Consequently, in the survey entrepreneurs were asked to rank their priority constraints which limit their expansion. Some obvious constraint possibilities were mentioned, and the entrepreneur was encouraged to add any which he felt were important to his business but not mentioned in the questionnaire. This invitation appears to have worked, since one out of five entrepreneurs said that his first priority constraint was not on the list, and they were subsequently specified. As is indicated in Table 28, 77% of the small enterprises identified lack of credit as their first or second priority limit on expansion.

Table 28
Guatemala Small Scale Enterprises 1978
Constraints on Expansion of Output

Sector	Credit Priority		Primary Material Priority		Skilled Labor Priority		Market Demand Priority	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
	(% of entrepreneurs responding by priority limiting factor)							
Wood Products	55%	10%	3%	41%	7%	7%	17%	3%
Textiles	69	13	7	19	5	23	7	4
Leather/Misc.	75	8	6	17	13	13	4	17
Baking/Food Prod.	63	21	8	25	4	4	8	17
Commercial Services	67	14	na	na	3	8	6	13
All Sectors	64%	13%	5%	15%	5%	12%	8%	10%

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

At least in the view of the entrepreneur himself, the lack of credit appears to be the most important. If all possible constraints are taken together including the ones entrepreneurs suggested which were not included in the first four factors, the relative standing of the various factors as real limits on increased output are shown in Table 29.

Small scale entrepreneurs obviously feel that limited availability of credit is the most important constraint on their expansion. The other limiting factors most commonly mentioned were limited managerial capacity to manage expanded operations, internal problems relating to the technical nature of the enterprise and risk related concerns. In some cases it has been observed that small entrepreneurs have indicated credit is the most important limit, but on more in-depth interviewing it has appeared that other problems of management and internal efficiency of the business are really of more importance. Given the high rates of return, which will be discussed later, it would appear that the entrepreneur's perception that he could make significant profits from simple expansion with credit are probably valid.

Table 29
Relative Importance of Alternative Constraints on
Output of Small Scale Rural Enterprises

Limiting Factor	Percent of 1st and 2nd Priority Responses
Credit Availability	45.0%
Scarcity of Primary Material	11.7
Scarcity of Skilled Labor or Craftsmen	9.4
Lack of Market Demand or Sales Capacity	10.5
Other Limiting Factors	22.8
All Constraints	99.4

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

3. Credit Availability to Small Scale Firms: Estimates of Credit Supply

The consistency with which small scale entrepreneurs indicated that credit was the critical constraint fits with the data on the availability of both formal institutional, and informal credit to small scale enterprises in rural areas. Two approaches have been used to estimate credit availability; the first is based on survey data, and the second is based on actual banking and institutional accounts.

In order to obtain some kind of measure of relative scarcity of credit, a ratio of credit to value of output is used. Based on data from banks and institutions extending credit to small scale enterprises gathered by the National Planning Council, it appears that small scale enterprises received institutional credit amounting to about US$3 millions during 1975-1976. The output of these enterprises during these two years was US$656.7 millions, resulting in a ratio of .0047 credit dollars per dollar of output. This implies that small scale enterprises, including those in the relatively well supplied Guatemala city area, had less than one half cent of credit for every dollar of output. Medium and large scale enterprises for the same product types (food, clothing, textiles and wood) averaged .092 credit dollars per dollar of output during this same period; that is, about 9 cents of credit per dollar of output. These figures imply that medium and large scale enterprises of similar type have twenty times as much institutional credit per unit output as do small scale firms. The gap is obvious, the need for expanded credit availability would appear to be serious. The fact that informal credit provides a larger proportion of small scale credit than for large scale firms could not begin to offset such a sizeable discrepancy, and may be itself overcome by the fact that the small scale ratio used above includes Guatemala city and other areas which are not part of the target group because they are better accessed by credit and other services. Therefore, the target group firms operate at a rate somewhere below the already very low ratio.

Data from the rural enterprises survey indicate that 7.7% of all small scale firms received some institutional credit in the five years previous to the study. This figure is very close to the National Planning Council data which indicate that 8% of small scale enterprises received some kind of institutional credit in 1976, but since the survey is for the last five

years and the CNPE figure is for one year it would appear that the two figures are not consistent. Part of the difference may be found in the difference in geographical coverage of the two estimates. CNPE is for the country as a whole, and includes the South Coast and Guatemala City where credit should be more abundant. Balancing these two figures, it would appear that about 3-5% of the small scale enterprises in the target area are served each year by institutional credit sources. Table 30 indicates the proportions of small scale firms receiving credit from institutions in the last five years, and the proportion with credit (institutional or informal) during the past year.

Table 30
Credit Use in Small Scale Rural Enterprises
Guatemala 1978

Sector	Percent of Firms with Institutional Credit in Last Five Years	Percent of Firms with Institutional or Informal Credit During Calendar Year 1977
Wood Products	10.3	13.8
Textiles	11.3	12.0
Leather, Maguey, Ceramics, etc.	17.3	9.6
Baking and Food Pł ducts	4.2	4.2
Commercial/Services	3.8	18.9
All Small Scale Enterprises	7.7	14.4

Source: S. Daines computations based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

Even when informal credit sources are added, less than 15% of small scale firms are utilizing credit sources outside their own operation. This magnitude of self-financing imposes strict limitations on the flexibility of the firm to expand. These figures appear to be consistent with, and strongly supportive of, the conclusion arrived at from the entrepreneur's perception of constraints, that credit is the most important limiting constraint.

Of the informal credit sources, input sellers, money lenders and family/friends appear to be the major sources. Product purchasers and advances against deliveries to marketing contractors appear to be insignificant sources.

4. Credit Demand as Indicated by Survey Requests for Additional Credit

To assess the probability that credit demand is sufficient in small scale firms to justify a loan, the sampled entrepreneurs were asked if they actually wanted credit during the coming business year at current interest rates and terms. Those who indicated interest were asked how much they would request and what they would use it for. Table 31 indicates the results from the sample of promotable demand in small scale enterprises in the target area.

Sixty percent of the firms indicated interest and willingness to undertake additional credit liability in the coming business year. It is interesting to note that many small scale

Table 31
Credit Demand for 1978 in Small Scale Rural Enterprises
Guatemala: Sub-Marginal Municipios
(Based on 1978 Rural Enterprise Survey)

Sector	% of Firms Requesting Additional Credit in 1978	No. of Firms Requesting Additional Credit in 1978	% of All Firms Requesting Additional Credit in 1978
Wood Products	72.4	2,254	12
Textiles	58.6	6,819	35
Leather, Misc.	73.1	3,014	16
Baking and Food Prod.	57.9	2,779	14
Commercial Services	60.5	4,486	23
All Enterprises	60.7	19,352	100

Source: S. Daines computation based on 1978 Rural Enterprises Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

enterprises, almost 40% prefer not to undertake additional credit burdens. All of the arguments abundant in the literature of development indicating that small scale subsistence farmers and small scale rural entrepreneurs attempt to avert risk and in so doing miss many income opportunities appears to apply at least in part to almost 40% of the rural entrepreneurs sampled. While 77% identified credit as the principal constraint to expansion, only 60% really wanted more credit; this leaves at least 17% who say they need it badly but for some reason are not willing to take the risks or endure the inconvenience of additional credit. The reasons for non-interest were not coded and analyzed carefully, they were too diffuse, yet it appears that the administrative hassle involved and the high interest rates prevailing in many of the informal markets were the two most important reasons. Risk aversion, which is probably also an important reason for non-interest, was not as often mentioned as one would suspect perhaps due to reticence to admit it or to see the problem in risk terms.

The fact that many who said they need credit did not actually wish to seek additional money this year adds some confidence to the actuality of the requests which were made. While it is useful to note the large number of those not desiring additional credit, this observation should not be allowed to obscure the most important result, that well over half of all small scale entrepreneurs *do* want additional credit and are willing to undertake the responsibilities and risks associated with it. Table 32 indicates the credit demand implications of the requests identified in the survey.

The total promotable demand in the target area appears to be between 20-30 millions, as the next sections will indicate, about half of that demand is for short term credit and half for long term credit. Average loan size requested would be about $1,500, and it would appear that there are almost 20,000 possible loans. All of these figures indicate the urgency of expanding the institutional capacity to access these large and disperse numbers of firms. The limitation on the project will be institutional in nature and not likely limited by the demand at the firm level. While the number of firms requesting is by far the largest in the textiles

Table 32
Credit Demand for 1978 from Small Scale Enterprises
in the Target Area: Guatemala

Sector	No. of Firms Requesting Additional Credit	Average Loan Size Requested	Total Demand for Additional Credit in the US$000	% of Additional Credit Demand
Wood Products	2,254	$2,380	$5,364	19
Textiles	6,819	800	5,545	19
Leather and Misc.	3,014	2,133	6,429	23
Baking/Food Products	2,779	1,939	5,388	19
Commercial Services	4,486	1,290	5,787	20
All Enterprises	19,352		$28,423	100

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture, and BANDESA; data from the National Planning Council, and F. Mann.

sector, the unusually low average loan requested results in textiles having about the same total share in demand volume as the others.

5. Credit Demand as Limited by Expansion Potential and Absorptive Capacity of Product Markets

While each individual entrepreneur in a limited market may think that there is sufficient additional demand in the market to absorb additional product and be correct in his perception, yet if all enterprises actually expand the market may not be able to absorb the sum of their products. Each firm may perceive correctly, yet the sum of the perceptions is incorrect. To explore whether the markets could actually absorb the quantities of product implied by the individual firm responses without damaging price deterioration would require data beyond that available. However, some general estimates of market dimension may be made based on existing information. Table 33 contains these product demand, or output projections, and indicates their relevance to credit demand for small scale enterprises in the target area.

It would appear from the projections in Table 33 that demand for product would not be a binding constraint, since the absorbtive capacity of the markets for the products produced by small scale enterprises in the target area would be $15 millions annually. The $28 millions of credit demand noted in the preceding section is not annual recurrent demand, since a part of it is long term demand and the balance would be for annual credit but could be funded on a rotating fund basis. When the time horizon of the two estimates is included, it would appear that demand for product does not limit the aggregate demand for credit estimated earlier.

6. Demand Estimates for Export Handicrafts

Export oriented handicraft items presented special problems in the estimates of demand for product since CNPE figures did not indicate the growth in output for this sector in the

Table 33
Product Demand Estimates and Credit Limits for Small Scale
Rural Enterprises in the Target Area

	Wood Products	Textiles	Leather Mis.	Food Products	Export Handicrafts [a]	Total
Average Annual Growth Rate of Output for Small Scale Firms 1971-75 (CNPE Data)	10.2%	6.6%	9.0%	16.2%	na	na
Annual Increment in Value of Output in Target Area $000 000	$2.9	$5.1	$4.1	$8.1	$0.9	$21.0
$ of Gross Value of Product per $ of Credit (Survey Data)	1.0	1.1	1.1	2.1	2.7[a]	na
Credit Limit Which Would Absorb All Incremental Product Demand in Target Area $000 000	$2.8	$4.5	$3.8	$3.8	$0.3	$15.4

Source: Consejo Nacional de Planificación Económica, F. Mann Report, and data from the 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

same way as for other small scale enterprise outputs. There are some specialized handicraft items produced for tourist and export markets in more than one of the sectors which are used to classify small scale enterprises. Handicraft items are included in textiles, leather, ceramic, and woods activities. In order to estimate demand limits on these items, a separate method was used. The importance of these items in the project is larger than their proportionate importance in value of total output terms, and the added obscurity of market dimension information made this product class the subject of special investigation. Table 34 contains the principal results of that exploration, but much added work is left to be done before reliable market potential estimates could be made.

Table 8
Demand for Export Handicraft Goods from Small Scale Enterprises
US$ 000

Year	FOB Value Exports	Tourist In Country Purchases	Total FOB Value
1971	$ 616	$1,254	$1,870
1972	936	1,828	2,764
1973	2,638	2,119	4,751
1974	2,989	2,164	5,153
1975	1,889	2,386	4,257

Source: CNPE Plan Nacional de Desarrollo Nacional, 1976-1979.

The result of these estimates is that this product type, scattered across three of the major small scale enterprise sectors, could absorb approximately $404,000 of additional credit

annually before reaching the limits presented by additional product demand. This analysis is based on the sketchy trend established between 1971 and 1976. During this period there was an average annual increment in sales of these articles of just over one million dollars. Using sample firms from the survey producing this class of goods, it appears that one additional dollar of credit would cause 1.13 dollars of additional output at producer prices. When adjusted to FOB prices to match the way the $1 million of added sales was valued, the output/credit ratio is 2.4. Since a part of the production of export handicraft goods is produced outside the target area, this reduces the net absorbtive capacity of target area small scale firms to $327,000 per year, or about $1,300,000 during the four-year project disbursement period.

7. Credit Demand by Proposed Use and Term

The sampled firms requesting credit were also asked to indicate the amounts and uses of the requested credit. From this information it is possible to profile in general the term of the requested credit and the classes of use to which it would be put. Table 35 outlines the total amounts of credit requested and divides its proposed use into eight categories.

Table 35
The Structure of Requested Credit by Proposed Use Category
Small Scale Rural Enterprises, Guatemala 1978

Credit Use Category	Wood	Textiles	Leather Misc.	Food Products	Commercial Services
		(Percent of Requested Loan by Intended Use)			
Purchase of Inputs	16%	30%	19%	14%	na
Equipment Purchase	29	24	13	30	26%
Repairs/Improvements	4	7	16	29	10
Additional Space	25	6	17	1	15
Hired Labor	10	20	29	8	6
Debt Consolidation	3	—	—	—	1
Product Diversification	14	13	6	19	37
Total Loan	101%	100%	100%	101%	95%
Size of Average Total Loan in US$/Firm	$2,369	$800	$2,135	$1,940	$1,290

Source: S. Daines computation based on 1978 Rural Enterprise Survey by S. Daines, G. Smith, Ministry of Agriculture and BANDESA.

A statistical review of these proposed uses indicates that 32% of requested funds would be used for annual cost items, 34% for medium and long term investments, and the balance for mixed uses like debt consolidation and product diversification. Except for the case of debt consolidation, there was active interest in almost all sectors for the full range of possible uses.

D. Credit Demand of Medium Scale Rural Enterprises

Estimating the demand for credit in medium scale firms in the target area is difficult because no original data were gathered and secondary sources are incomplete and fail to geographically distinguish firms in a way which allows for adequate separation of the target area. The approach adopted is to project growth in demand for medium and large scale products, establish a credit output ratio for a base year, and deflate that growth by the apparent growth trend in institutional credit.

Table 36 indicates that the supply of credit in textiles, wood, and clothing industries has grown faster than output, indicating a deepening of the credit/output ratio. Under conditions of an expanding supply of credit which exceeds the growth in output, it must be assumed that there is little potential on the average for additional credit. There may in fact exist latent demand for firms at the lower end of the scale range, and located in remote rural areas. Though this may be the case, we have no data to indicate the size or nature of that demand.

Table 36
Demand for Credit in Medium and Large Scale Enterprises in Guatemala

Sector	1975 Value of Output $000 000 (1)	1975 Credit Disbursed $000 000 (2)	1975 Credit/ Output Ratio	Growth Rate in Credit (2)	Growth Rate in Output (3)
Food Products	$332.7	$20.2	.06	-4.4%	6.7%
Textiles	51.2	12.1	.24	8.8	2.8
Clothing	18.4	5.8	.31	6.6	3.9
Wood Products	33.6	2.4	.07	12.9	4.8

Sources: 1. Dirección General de Estadistica, *Encuesta Trimestral de la Industria Manufacturera Fabril, Año 1975*, Guatemala, 1976.
2. Banco de Guatemala, *Prestamos Concedidos por el Sistema Bancario a la Industria*, Guatemala, 1976.
3. Consejo Nacional de Planificación Económica, *Plan Nacional de Desarrollo Industrial*, Guatemala, 1977.

In the food products sector the picture is quite different; the growth rate in credit supply in real terms is negative, implying a decreasing supply of credit to the subsector. At the same time its projected growth rate in output is the highest at 6.7%. Simply to keep the supply of credit at a constant absolute level would require an additional credit supply of $889,000 annually. The average credit output ratio in the non-foods sectors is .197 contrasted with .06 in foods. This implies that the foods sector is not only facing a lower credit availability yearly, but that it starts at a very low credit intensity. Simply to bring the food industry up to the average of the other sectors would require a one-time addition of $45.6 millions in credit. To supply the growing demand for liquidity implied by the expansion of output would require an additional $4.3 millions annually. Together these three credit requirements sum to a total of $50.9 millions of which $5 are annually recurrent and 45 are required on a one-time basis.

V. CREDIT POLICY

A. GOG Policies

Discussions were held with CORFINA, GUATEXPRO and Ministry of Labor officials in addition to a review of the national labor code and income tax regulations to determine positive/negative effects of GOG policies on the project.

The CORFINA representative mentioned both the GOG draft law on decentralization of industry now in Congress and a GOG special $3,000,000 fund for small rural enterprises for 1978 to be administered by CORFINA as both providing positive incentives for rural development. No insights were provided as to content of the draft decentralization law. The CORFINA official also mentioned that the GOG is planning an additional $3,000,000 each year over the next four years (1979-1982) ($12,000,000 total) for rural small enterprises to be administered by CORFINA. GOG sources of funding are not known and should be verified as to internal or external—possibly AID or BID—as the proposed AID target group would be eligible for a large portion of these credits.

GUATEXPRO provides guarantees to banking institutions against firm documents for export items in order to promote national exports. This service could assist artisans producing for export markets coupled with BID/GOG assistance to ARTEXCO and possible AID assistance to GUATEXPRO (see Manoff paper re ARTEXCO and GUATEXPRO).

The labor code covers the usual rights and responsibilities of employees and employers such as working hours, working conditions, the right to organize, rules applicable to children and women employees and establishment of minimum wages. The code in each of these areas, with the possible exception of minimum wage rate, would appear to have neither a positive nor negative impact on the project.

Minimum wage rates could have a profound negative impact on the profitabilities of the firms included in the survey for this project carried out by AID. The following table summarizes survey information by each subsector showing person months of paid employees and monthly wage rate and compares this survey information with minimum monthly wage rates to determine impact on profitability of firms in each subsector.

In each subsector, except wood and wood products and commercial enterprises, profits are seriously eroded when minimum wage is applied to months of paid help. This situation needs to be closely reviewed to determine the disparity between survey and minimum wages. The obvious reason which comes to mind is that the minimum is simply not enforced.

A review of income tax regulations shows little or no impact on the target group firms. A personal exemption of $1,400 for married family head of household plus personal exemptions of $700 for each dependent are sufficient to reduce taxable income to zero for the average firm in each subsector.

Infrastructure works, such as the electrification project now planned for Chimaltenango with AID and GOG financing should also have a positive impact on the proposed program.

Table 37

Sector	Survey		Minimum	Difference	Effect Profitability	
	Months of Paid Help	Monthly Salary	Monthly Salary		$ on + -	% + -
Wood and Wood Products	8.9	$65	$58.50	$(6.50)	$ 58	7%
Textiles	9.2	21	59.70	38.70	(356)	(80%)
Leather, Ceramic	7.0	31	57.00[a]	26.00	(182)	(27%)
Bakery and Food Products	11.3	32	52.16[b]	20.16	(228)	(35%)
Commercial	1.0	28	50.70	22.70	(23)	(3%)
Public Service	3.8	22	52.16[b]	30.16	(115)	(31%)

[a]Average of glass, cement and leather products classes.
[b]Average of all classes.

B. National Credit and Lending Policies

The laws regulating the Bank of Guatemala (Decrees 215 and 331), banks (Decree 315) and private *financieras* (Decrees 208 and 51-72) provide the overall framework and mechanism for the determination of national credit and lending policies for both the private and public banking sectors. These laws specify the types of credit and savings operations, minimum guarantees, minimum capital and reserves, etc., and give authority to the Monetary Board of the Bank of Guatemala to, *inter alia*, regulate bank credit, fix interest rates, establish cash reserve requirements and increase minimum guarantees and capital and reserves requirements.

Organic laws of state banking institutions, such as CORFINA (Decree 46-72) and BANDESA (Decrees 99-70 and 16-71) provide a great deal of latitude in relation to the above banking laws through 1) the establishment of trusts which are not subject to minimum capital and reserve requirements, nor heavy loan guarantee requirements of the banking laws, and 2) the relative independence of the Board of Directors of each of the two institutions in the defining of credit policies of each institution. However, the Monetary Board wields considerable influence over CORFINA and BANDESA by its authority to direct the general credit policy of these institutions through 1) a system of interlocking members of the Boards of each institute; 2) instructions, recommendations, and suggestions on credit policies, and 3) establishment of interest rates.

Insurance companies and entities that receive deposits only from their members or shareholders, such as credit cooperatives and mutual societies, are not subject to the banking laws; however, these institutions are required to present periodic reports to the Superintendent of Banks.

Interest rate structures, terms and conditions and other requirements as developed through the appropriate banking laws, Monetary Board and organic laws are summarized below.

In addition to the general characteristics of credit and lending policies above, a law for the development of small business was established in 1971 (Decree 12-71) allowing a maximum of $3,000,000 in credits throughout the banking system and backed up by a

Table 38

Institution	Interest Rate	Terms and Conditions	Guarantees	Other Comments
Private Sector Commercial Banks	Max. 11% + 1%	No more than 1 year for working capital. No more than 3 years for raw materials, equipment.	Fiduciary—Max. loan of 100% of note with signer and cosigner or 1 signer with an ample and indisputable responsibility. Chattel—Max. loan of 70% of value of chattel. Mortgage—Max. loan of 50% of value of mortgage.	Capital and capital reserves. 5% of paper guaranteed by State; 10% of all other credits; 50% of fixed assets.
Mortgage Banks	Max. 11% + 1%	No more than 1 year for working capital associated with mortgaged property. No more than 5 years for equipment, materials, etc., with chattel on mortgage. No more than 25 years for equipment, materials, etc., with mortgage.	See above with exception of fiduciary guarantee which is not applicable.	Capital and Capital reserves. See above
Financieras	9%—14%, for transportation companies 18%	Medium and long term financing preferably, but loans for up to 3 years against valid documents for sales from operations.	Fiduciary—same as above Chattel—same as above Mortgage—Max. loan of 50% of value of building. Max. loan of 80% of value of land.	Mostly large loans in industry, tourism, mining, agriculture for medium and long-term financing. FIGSA started small cattle loan program last year with loans fom $2,000—$15,000.
FENACOAC	2% Housing 8%—9% other	No more than 1 year for current operations. No more than 3 years for equipment and productive operations. No more than 15 years for housing.	Production loan—Cooperative portfolio. Equipment—Chattel Housing—Mortgage	Loan limited to 10% of operating capital or 5 times cooperatives net worth. 5% of loan is to be capitalized by cooperative.

Table 38 (Cont.)

Institution	Interest Rate	Terms and Conditions	Guarantees	Other Comments
Cooperatives	4% Housing* 12% other *(Effective rate has been calculated at almost 18% due to commissions and additional share purchases required.)	No more than 1 year for production credit. No more than 18 months for land, housing. No more than 10 years for reconstruction of housing.	Share capital of members plus chattel/mortgage if appropriate.	Share capital is used to determine maximum loan. This rate fluctuates between 3:1 and 10:1, depending on coop. Also new borrowings require 5%—10% of loan amount for additional share purchases.
?ENNY FOUNDATION	4% housing 10½% agriculture, cattle, small commerce 8% schools	No more than 10 months for agriculture. 3-4 years for cattle. No more than 3 years for commerce.	No guarantee. Group liability concept is used.	Foundation works principally with groups of 40-50 persons.
ARTEXCO	NO CREDIT PROGRAM TO DATE			
PUBLIC SECTOR				
BANDESA 1)Banking Operations	8%—9% (Set by BANDESA within overall rates set by Monetary Board)	Short term—No more than one year. Maximum and long term—based on cash flow of project financed.	Fiduciary—only on short term and when chattels and mortgages are insufficient to cover loan value. Chattel and mortgage covering crop, equipment, property. No minimum set for Ag. production credit. For livestock credit, livestock covers 70% of loan value and 30% covered by chattel on existing cattle, equipment, mortgage or fiduciary guarantee.	BANDESA's operations are divided into banking operations with its own funds and trust operations, with trust funds provided by the State. Trust operations are set up to service agricultural activities with higher risks.

Table 38 (Cont.)

Institution	Interest Rate	Terms and Conditions	Guarantees	Other Comments
2) Trust Operations.	8% 8% is normal and also highest rate charged. For small industries interest rate is 8%.	For small enterprises: No more than 12 months for working capital. No more than 3 years for medium term financing. No more than 10 years for permanent improvements.	For small enterprises: Primary factor is the reputation and capacity of applicant. Can use as guarantee. Chattel on products existing or to be produced, machinery and equipment; mortgage, second mortgage or guarantee of individual acceptable to BANDESA. Mortgage—maximum loan of 85% of value of mortgage. Chattel—maximum loan of 75% of value of chattel.	Trust funds offer the greatest flexibility if relation to banking laws especially in the type of guarantees accepted and exclusion of trust funds from capital and reserve requirements. BANDESA rules for trust funds governing loans to small enterprises state that interest rate cannot exceed rates established by Monetary Board and maximum loans cannot exceed $2,000 for individual and $25,000 for cooperative.
CORFINA				
1) Banking operations	9%—11% (10% most frequent based on study of 1976 loans)	Less than 1% for terms less than 3 years; 39% for terms of 3-4 years; 60% for term of 10 years; (based on study of 1976 loans).	6% of loans with fiduciary guarantee; 55% of loans with mortgage; 39% of loans with chattel (based on study of 1976 loans)	Sector emphasis is in industry, mining, tourism. CORFINA with its own funds serviced 122 companies with total assets of less than $100,000 with average loans of $13,500 in addition to firms with total assets at higher levels. Again trust funds offer the greatest flexibility.
2) Trust operations	4% artisan 6% small industry	For small enterprises: Maximum of 10 years with 1 year grace.	For small enterprises: Fiduciary—for up to $3,000 with signer and cosigner; Chattel—with CORFINA funds: maximum loan of 70% of value of chattel; with other funds: whatever terms stipulated. Mortgage—with CORFINA funds: Max. loan of 80% of value of mortgage; with other funds: Whatever terms stipulated.	New CORFINA program for artisans and small industry proposes interest rates ranging from 6%—10%, depending on sources of funds. (See Annex B, pp. 15-16.)

government guarantee fund to cover 85% of any losses incurred by participating institutions. Loan eligibility is limited to those families wherein monthly income of head of household is no more than $400, total family assets are no more than $20,000, and total family assets devoted to business are no more than $10,000. Maximum loan size is $3,000 with an interest rate of 8%. Most loans are made in Guatemala City because of lack of outreach capacities by participating banks.

The program has the following advantages to the banks:

1. Guarantee of 85% of loan losses,
2. Loans not subject to capital and capital reserve requirements,
3. Banks allowed to issue bonds up to value of small loan portfolio, and
4. Certain tax savings.

The program has the principal advantage to the borrower of substantially reducing collateral requirements and legalisms associated with loan application.

The program is essentially at a standstill due to problems which have arisen and are now being studied by the Bank of Guatemala. The state-run National Mortgage Credit Bank indicated that of 5,500 guarantee program loans in the portfolio, 4,500 loans are past due (82%). The Bank also indicated that 70%-80% of past dues would eventually be collected.

Problems in the program can be summarized as follows:

1. Straight monthly amortization of loan with no grace periods is required, rather than setting terms on business cash flows, giving a measure of the degree of mistrust on the part of the banking community in dealing with a new class of clientele;

2. Each loan is approved by both the participating bank and the Bank of Guatemala, a rather cumbersome and time-consuming process;

3. No mechanism developed until recently to allow restructuring of loans;

4. Lack of what the banks indicate as technical assistance, but more properly, supervision of credit to insure that the total credit is in fact utilized by the business, i.e., follow-up to determine if credit is for purchase of raw materials, that raw materials are purchased for at least the amount of credit and employed in the business;

5. Credit promotional techniques were misunderstood by many loan applicants as they looked on the credit as a gift; and

6. Complicated legal procedures to obtain guarantee from the Bank of Guatemala.

As mentioned earlier, the Bank of Guatemala now has the program under review.

C. Direct Lending/Sublending and Trust Funds

1. Direct Lending/Sublending

a. Banks to Banks and Sublend

A review of the banking law and organic laws of BANDESA and CORFINA reveals no prohibition on loans from one banking institution to another. In fact, the banking law authorizes banks to borrow funds from internal and external sources with the previous approval of the Monetary Board. However, officials of the Bank of Guatemala, BANDESA and CORFINA

all expressed the opinion that only the Bank of Guatemala is authorized to lend to other banking institutions, state or private. This matter needs to be resolved if the Bank of Guatemala is not chosen as the implementing agency for the proposed project.

b. Banks to Cooperatives and Sublend

Cooperatives are specifically excluded from the national banking laws except that they are subject to preparation of reports required by the Superintendent of Banks, thus leading to two conclusions: 1) Bank of Guatemala cannot lend directly to cooperatives, due to its operations being limited to banking institutions, and 2) BANDESA and CORFINA can lend to cooperatives. Ample precedent has been established in both BANDESA and CORFINA for the making of loans to cooperatives for ultimate sublending.

c. Banks to Individuals (Direct Loan)

The Bank of Guatemala is specifically excluded by law from providing credit to individuals. Direct lending is the principal credit operation carried out by BANDESA and CORFINA.

2. Trust Funds

A review of trust laws shows that only banks established in Guatemala can act as fiduciaries. Credit institutions can also act as fiduciaries with specific authority of the Monetary Board. It is not known whether cooperatives are classified as credit institutions. Legal maximum term for trust is 25 years, unless the trust is placed with a state entity, then the trust can be indefinite.

a. Banks

Organic laws of BANDESA and CORFINA specifically allow trust operations; however, officials of these two institutions and the Bank of Guatemala all expressed the opinion that trust arrangements can not be made between banks, i.e., BANDESA-CORFINA, and that separate trust arrangements would best be handled through the Bank of Guatemala if more than one banking institution is to be involved in the project.

Although it is probably not relevant, as private *financieras* are assumed to participate in program on a loan basis, no mention is made in *financiera* laws to allow establishment of a trust fund.

b. Cooperatives

Whether cooperatives can set up and operate trusts is, no doubt, a moot point, due to their anticipated participation on a loan basis, and would be subject to legal interpretation to determine if cooperatives are credit institutions and, finally specific approval by the Monetary Board.

VI. FINANCIAL ANALYSIS

A. Effect on Project Participants

Historical and Proforma financial statements for small enterprises subject to credit under the proposed project have been developed.

Assumptions underlying these financial statements are as follows:

1. An average firm has been developed for each subsector based on the 1978 survey of 568 small enterprises. The use of an average firm as the point of analysis is preferred over specific small enterprise examples in order to eliminate the bias inherent in the selection of representative small enterprise examples.

2. Profitability of average firms is based on two factors:

(a) Past performance–historical relationship between firm total assets at book value and annual net income;

(b) Credit additive–relationship between firm total assets at replacement value and annual net income; and

(c) Straight volume increases only, with no adjustments in margins reflecting changes in input and output pricing, efficiencies in operations and marketing, etc.

Profitabilities of additional credit injections using the relationship of total assets at replacement value and annual income rather than the book value approach substantially lower the rate of return as summarized in the table below.

Table 39

Subsector	Profitability (R of R)[a]	
	Book Value	Replacement Value
Wood and Products	67%	32%
Textiles and Products	54	36
Leather, Ceramics, Fiber	64	34
Baking and Food Products	79	50
Commercial Enterprises	78	50
Public Services	19	19

[a]Shadow wage rate of family labor of owner is $0.

3. Loan amounts are calculated at the lower of:

(a) 100% of total firm assets at book value, or

(b) Amount of credit requested in the survey.

4. Loan usages and terms are based on composite credit requests for each subsector (see Annex C-8).

5. Loan interest rate of 12% with long-term portion of loan payable over five years and short-term portion of loan due at end of one year but "rolled over" to prevent decapitalization of firm.

6. Family income withdrawn is equal to net income minus payment on long-term debt, permitting reinvestment of funds represented by depreciation charge on fixed assets.

7. Depreciation charge is based on a 15-year life and is applied to book value of fixed assets plus new fixed assets obtained with long-term credits.

Significant amounts and statistics from the financial statements are shown in the financial summary below.

1. Projected Year 1

All of the average firms, with the exception of the public service firm, are financially better off in projected year 1 as a result of credit. The bottom line of additional net cash flow over historical net cash flow for the five subsector firms better off ranges from $141 for wood and wood products to $318 for commercial enterprises. The public service firm remains substantially unaffected by the credit input with only $8 in additional net cash flow available. Sensitivity measures, to determine the degree to which firm performance can be worse than projected and still maintain its historical net cash flow, range as follows:

(a) Change in operating income:

Debt service.

From 1.3 for wood and wood products to 2.3 for baking and food products, i.e., the decrease in additional operating income can be as much as 30% of debt servicing for wood and wood products and 130% for baking and food products and yet maintain historical cash flows;

(b) % decrease in sales:

From 7% decrease in sales for wood and wood products to 20% decrease in sales for baking and food products and still maintain past cash flows; and

(c) Gross margin decrease:

From 3% absolute decrease in gross margin for wood and wood products to 8% for commercial enterprises and maintain past cash flows. For the public service firm, sensitivity measures are all very low, reflecting the low profitability of additional credit.

2. Projected Year 5

Results for projected year 5 show the same pattern as in the first year, only the magnitudes have increased reflecting (1) returns on reinvestment of funds represented by the annual depreciation charge and (2) lowered interest charges on long-term debt. All of the firms, with the exception of the public service enterprise which is still marginal, show substantial additional net cash flow over historical levels. Additional net cash flow ranges from $269 for textiles and products to $606 for commercial enterprises. Sensitivity measures are up accordingly.

In conclusion, the financial analysis indicates that substantial financial benefits accrue to the average firm in each subsector with the exception of the public service subsector enterprise.

Table 40
Financial Summary Subsector

	Wood & Wood Products	Textiles & Products	Leather, Ceramic & Fiber	Baking & Food Products	Commercial Enterprises	Public Services
Historical						
Total Assets	1,182	827	1,045	826	1,137	1,462
Net Income	791	445	664	656	887	283
Rate of Return[a]	67%	54%	68%	79%	78%	19%
Cash from Operations	846	486	714	678	944	372
Net Cash Flow (1)	846	486	714	678	944	372
Projected–Year 1						
Total Assets	2,382	1,627	2,045	1,626	2,237	1,867
Loan	1,200	800	1,000	800	1,100	500
Net Income	1,031	637	884	960	1,305	318
Rate of Return[b]	43%	39%	43%	59%	58%	17%
Cash from Operations	1,136	699	961	1,011	1,412	421
Debt Amortization	149	64	82	88	150	41
Net Cash Flow	987	635	879	923	1,262	380
Net Cash Flow–Historical (1)	846	486	714	678	944	372
Additional Net Cash Flow	141	149	165	245	318	8
Sensitivity[a]						
A) Change in Operating Income / Service	1.3	1 8	1.7	2.3	2.0	0.9
B) % Decrease in Sales	7%	16%	13%	20%	17%	0%
C) Gross Margin Decrease	3%	6%	5%	5%	8%	0%
Projected–Year 5						
Total Assets	2,382	1,627	2,045	1,626	2,237	1,562
Loan	456	480	590	360	352	295
Net Income	1,237	757	1,028	1,104	1,591	352
Rate of Return[b]	52%	47%	50%	68%	71%	23%
Cash from Operations	1,342	819	1,105	1,155	1,698	455
Debt Amortization	148	64	82	88	148	41
Net Cash Flow	1,194	755	1,023	1,067	1,550	414
Net Cash Flow Historical	846	486	714	678	944	372
Additional Net Cash Flow	348	269	309	389	606	42
Sensitivity[a]						
A) Change in Operating Income / Service	2.4	2.9	2.7	3.5	3.7	1.3
B) % Decrease in Sales	21%	28%	24%	30%	32%	6%
C) Gross Margin Decrease	8%	10%	9%	7%	14%	2%

[a]Sensitivity: These three statistics are measurements to determine the degree to which firm performance can be worse than projected and still maintain the same net cash flow as experienced before the addition of credit.

Statistic A) measures the number of times additional operating income exceeds debt service.

Statistic B) measures the % decrease in sales allowable to maintain historical net cash flow.

Statistic C) measures the absolute % decrease in gross margin allowable to maintain historical cash flow, i.e., for wood subsector gross margin can decrease from 37% to 34% in projected year 1.

[b]Shadow wage rate of family labor of owner is $0.

3. Financial Statements

Latest balance sheets and income statements are attached and summarized in the table below. Audited financial statements for the calendar year 1977 were not available, as audits were in the process of being made at the various institutions. Audited financial statements should be examined for each of the institutions.

B. Budget Analysis of Implementing Agency and Interest Rate Analysis

A partial cash flow, budget analysis and interest rate analysis have been developed for the two alternative models and are presented in the following pages. This approach was taken for three reasons: 1) complete cash flow projections are premature until such time as AID has determined which option it wishes to pursue regarding firm and loan sizes and implementing agencies; 2) although data were requested from each of the participating institutions, there are still many holes in the information; and 3) probably most important, only the cooperatives, based on the analyses which follow, operate at sufficiently high interest rates to show a reasonable prospective of breaking even. All public institutions, given the present interest rate structure, would not cover costs under the proposed project.

Operating budgets/credit technician in each of the potential participating institutions have been developed and based on the institutional analyses, past performance and discussions with appropriate officials the number of additional technicians which the institution can effectively utilize and thus the size of the loan portfolio have been calculated.

Breakeven interest rates have been calculated and, as mentioned earlier, pose serious problems regarding fund and institutional viabilities.

AID terms, assuming participating institutions interest rates can be raised or a mechanism developed whereby the GOG puts up the funds covering losses from subsidized interest rates through a combination of direct transfers and possibly not passing on 2% AID interest to participating institutions, should be at concessional rates, i.e., 2% during grace period, 3% thereafter. Minimum grace period should be five years to allow at least one year between final disbursement and first amortization payment. Amortization period should be in the neighborhood of 20 years, especially if public and private *financieras* participate because of the long-term nature of their loans (in 1976, approximately 60% of CORFINA's loan placements were for a term of 10 years).

Some possibilities exist for stimulating rural savings and reinvestment in small businesses. These possibilities are briefly mentioned below; however, it should be pointed out that the financial leverage obtained by investing 12% loan funds to attain rates of return ranging from 32%-50% for small enterprise firms is a substantial incentive to continue to use credit. This argument is tempered somewhat by the sound business strategy for the small enterprise firms to supply some of their own capital firm internal sources (income) in order to grow. One method to stimulate rural savings is to set repayment periods for fixed asset loans at a term less than the useful like of the fixed asset. This requires a careful analysis of projected cash flows. Another method would be to require that funds represented by the depreciation charge on fixed assets financed by loans be reinvested in the business. This may

Table 41

	BANDESA (Trust)	CORFINA	FENACOAC	FENACOAC Affiliates	PENNY	FIASA	FIGSA
Balance Sheet As Of	12/31/77	12/31/77	10/31/77	Not Available	1/31/78	1/31/78	12/31/77
Income Statement for	1/1-12/31/76	1/1-12/31/77	1/1-10/31/77	Not Available	1/1-12/31/77	1/1-12/31/77	1/1-12/31/77
Assets							
Cash	$15,674	$ 2,365	$ 1,014		$ 270	$ 963	$ 97
Loan Portfolio (Net)	53,963	15,246	6,292		1,052	12,526	6,513
Other Assets	23,015	4,557	4,881		551	3,064	1,935
Total	$92,652	$22,168	$12,187		$1,873	$16,553	$8,545
Current Liabilities	$12,085		$ 2,269		328		
L-T Liabilities	3,993		8,995		816		
Total	$16,078	10,033	11,264		1,144	12,782	5,820
Capital	76,574	12,135	923		729	3,771	2,725
Total	$92,652	$22,168	$12,187		$1,873	$16,553	$8,545
Interest Income	$ 1,804	$ 1,132	$ 253		$ 43	$ 1,584	$ 759
Other Income	26	330	91		348	18	58
Total	1,830	1,462	344		391	1,602	817
Gas Expenses	4,393	788	260		275	686	409
Financial Charges		191	123		28	480	191
Total	4,393	979	383		303	1,166	600
Net Income (Loss)	$ 2,563	$ 483	$ <39>		$ 88	$ 436	$ 217

be difficult due to possible conceptual problems of cash and accrual accounting. A third method would be to indicate that working capital loans for the following year would be reduced by some percentage and the difference would be expected to be made up by borrower if borrower wished to maintain some approximately level of operations in each year. Finally, loans made by cooperatives require a forced savings through the requirement to purchase shares when obtaining a loan.

Based on financial analysis of average small enterprise firms from the survey, all firms with the exception of the average public services entity show excellent ability to repay projected loans and interest. One issue left to be examined as it bears on the target group deals with guarantee or collateral requirements. An acceptable compromise had to be developed between collateral requirements acceptable to the participating institutions and potential target group sub-borrowers.

Table 42

	BANK OF GUATEMALA MODEL		BANDESA MODEL	
	AMOUNT		AMOUNT	
AID LOAN	$9,033,000		$7,241,000	
GOG CONTRIBUTION	6,022,000		4,828,000	
TOTAL	$15,055,000		$12,069,000	
PARTICIPATING INSTITUTIONS		FOUR YEAR DISBURSEMENTS		FOUR YEAR DISBURSEMENTS
1. PENNY FOUNDATION - LOANS		$ 144,000		$ 144,000
2. BANDESA - LOANS		5,880,000		$5,920,000
3. PENACOAC & COOPS - Loans		4,800,000		5,875,000
4. CORFINA - Loans		2,088,000		
5. PRIVATE FINANCIERAS - Loans		2,000,000		
LOCAL COUNTERPART - VEHICLES & EQUIPMENT		143,000		130,000
		$15,055,000		$12,069,000
TO STRATA OF LOANS:				
1) Maximum Loan	$3,000		$ 3,000	
Average Loan	$1,200		$ 1,200	
Total Loans		$9,312,000		$ 8,803,000
2) Maximum Loan	$25,000		$10,000	
Average Loan	$15,000		$ 4,000	
Total Loans		$5,600,000		$ 3,136,000
		$14,912,000		$11,939,000

Table 43
Average Interest Rate Needed to Break Even by Implementation Unit ($000's)
(Bank of Guatemala Model)

	Year					Total
	1	2	3	4	5	
Total Portfolio	$3,728	$7,456	$11,184	$14,912	$14,912	
AID Loan	2,258	4,516	6,774	9,033	9,033	
Int. on AID Loan	23	68	113	158	181	
Administrative Costs	50	55	60	66	73	
Total	73	123	173	224	254	$847

$$\frac{\text{TOTAL EXPENSE}}{\text{AVERAGE PORTFOLIO}} = \text{BREAKEVEN RATE}$$

$$\frac{847}{44736} = 1.9\%$$

Table 44
Average Interest Rate Needed to Break Even by Implementation Unit ($000's)
(BANDESA Model)

	Year					Total
	1	2	3	4	5	
Total Portfolio	$2,985	$5,790	$8,955	$11,939	$11,939	
AID Loan	1,810	3,620	5,430	7,241	7,241	
Int. of AID Loan	18	54	90	126	144	
Administrative Costs	50	55	60	66	73	
Total	$68	$109	$159	$192	$217	$745

$$\frac{\text{TOTAL EXPENSE}}{\text{AVERAGE PORTFOLIO}} = \text{BREAKEVEN RATE}$$

$$\frac{745}{35321} = 2.1\%$$

Table 45
Final Interest Rates and Spread Needed for Each Institution to Breakeven
(Bank of Guatemala Model)

	BdeG	PENNY	BANDESA	FENACOAC	COOPS	CORFINA	FINANC.
BdeG[a]	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Penny		8.4					
BANDESA		1.0	8.7	0.5	0.5		
FENACOAC				5.8	5.8		
COOPS					4.2		
CORFINA						6.2	
FINANCIERAS							10.0
TOTAL	1.9	11.3	10.6	8.2	12.4	8.1	11.9

[a]Average over five-year grace period. Rate increases when AID interest rate moves from 2%-3%. Also, to the extent that direct lending costs are subject to inflation, interest rates would have to be adjusted accordingly.

Table 46
Final Interest Rates and Spread Needed for Each Institution to Breakeven
(BANDESA Model)

	IMPLEMENTATION	PENNY	BANDESA	FENACOAC	COOPS
IMPLEMENTATION[a]	2.1	2.1	2.1	2.1	2.1
PENNY		8.4			
BANDESA		1.0	8.7	0.5	0.5
FENACOAC				5.1	5.1
COOPS					4.2
TOTAL	2.1	11.5	10.8	7.7	11.9

[a]Average over five-year grace period. Rate increases when AID interest rate moves from 2%-3%. Also, to the extent that direct lending costs are subject to inflation, interest rates would have to be adjusted accordingly.

Table 47
Bank of Guatemala Model: Direct Income and Costs Associated with Loan Portfolio Serviced by One Credit Agent

Item	Institution					
	PENNY (1)	BANDESA (2)	FENACOAC (3)	COOPS (4)	CORFINA (5)	FIGSA and FIASA
No. of Loans	120	85 3	125	125	30 15	No amounts are available; however, FIASA indicated it is not profitable with little risk with 5% spread, while FISGA mentioned it needs a 6% spread to show present profitability. If two points were added for additional risk and two points for administration, then spread would increase to 9% or 10%.
X Loan Amount	1,200	1,200 15,000	1,200	1,200	1,200 15,000	
Total Portfolio	$144,000	$147,000	$150,000	$150,000	$261,000	
Direct Costs:						
Personnel	4,110	3,344	3,600		4,500	
Travel & Related	1,344	1,800	1,800		3,600	
Other	853	300	300	300	300	
Bad Debts	5,760	7,350	3,000	6,000	7,830	
Total Direct Costs	$12,067	$12,794	$8,700	$6,300	$16,230	
Interest Spread to Breakeven	8.4%	8.7%	5.8%	4.2%	6.2%	
No. of Credit Agents	0.25	10	8	–	2	

(1) Penny Foundation amounts are based on historical ratio of 40 groups to agent. Average size group is only three because of problems associated with grouping entrepreneurs. Personnel travel and related and other costs are derived from historical direct costs shown on income statement. Bad debt losses are assumed at 4%.
(2) BANDESA amounts are based on three $15,000 credit/year and 85 - $1,200 credits/year. Personnel costs are based on BANDESA budget figures plus 10%. Travel and related is computed at 12,000 Km., at $1.5/Km ea. Other costs are based on loan processing costs obtained at regional office. Bad debt losses are assumed at 5%.
(3) FENACOAC amounts are based in institutional analysis of number of credits moved by one agent. Personnel costs are from FENACOAC's records. Travel and related and other costs are assumed the same as for BANDESA. Bad debt losses are assumed at 2%.
(4) COOPS amounts assume no additional staffing, but allow loan processing costs. Bad debt losses are assumed at 4%.
(5) CORFINA portfolio division between large and small is based on study of time spent by eight man staff to move 170 loans in 1977. Average loans per technician was 21¼. 127 of 170 loans were from 0 - $30,000 and 118 were made in Guatemala City. Assuming an even trade-off in time involved in analyzing 43 loans larger than $30,000 and in time involved in traveling to locations outside of Guatemala City, the average loans per technician would remain at 21¼. If 70% of time spent on larger loans than 15 loans would be moved. The remaining 30% of time is spent on smaller loans at the BANDESA rate of 100/technician year. Cost information was not available from CORFINA, so estimates were made on the following basis: personnel costs were assumed to be approximately 1/3 higher than those of BANDESA. Travel and related was assumed to be double the amount for BANDESA because of additional travel caused by CORFINA's lack of branches. Loan processing costs are assumed to be the same as for BANDESA. Bad debt losses are assumed at 3%.
(6)TA to institutions is assumed to be grant funded. No allowance has been made for TA to entrepreneurs as per report on institutional capacity and technical assistance needs. New enterprises may well need TA to start up. To this extent TA might possibly be loan financed by sub-borrower.

Table 48
Direct Income and Costs Associated with Loan Portfolio Serviced by One Credit Agent
(BANDESA Model)

Item	Institution							
	PENNY	BANDESA		FENACOAC		COOPS		
No. of Loans	120	90	10	113	12	113	13	
X Loan Amount	$1,200	$1,200	$4,000	$1,200	$4,000	$1,200	$4,000	
Total Portfolio	$144,000	$148,000		$183,600		$183,600		
Direct Costs:								
Personnel	4,110	3,344		3,600				
Travel and Related	1,344	1,800		1,800				
Other	853	300		300		300		
Bad Debts	5,760	7,400		3,672		7,344		
Total Direct Costs	$12,067	$12,844		$9,372		$7,644		
Interest Spread to Breakeven	8.4%	8.7%		5.1%		4.2%		
No. of Credit Agents	0.25	10		8		–		

Table 49

	Bank of Guatemala Model	BANDESA Model
Implementation Unit		
Item	Annual Cost	Annual Cost
Personnel[a]	$39,900	$39,900
Social Security	4,000	4,000
Office Supplies	2,500	2,500
Publicity	4,000	4,000
Total	$50,400	$50,400

[a]Three professionals and secretary responsible for supervision and control of program, promotion, identification and coordination of TA and training needs, manual of operations, loan application formats, etc. Overall costs are based on similar implementation unit in 1978 BANDESA budget.

Vehicle and Equipment Needs

Item	Unit	Bank/Guatemala	PENNY	BANDESA	FENACOAC	CORFINA	PENNY	BANDESA	FENACOAC
Vehicles	6,000	1	1	10	8	2	1	11	8
Desks	225	4	1	10	8	2	1	14	8
Chairs	50	4	1	10	8	2	1	14	8
Calculators	100	3	1	10	8	2	1	13	8
Filing Cabinets	150	1		2	2	1		3	2
Typewriters	330	1						1	

Unit costs taken from 1978 BANDESA budget.

Table 50
Delinquencies and Bad Debts

Institution	Previous Findings			Present Situation		
	Rate	Year	Information Source	Rate	Year	Comments
FIASA	2% bad debt provision is realistic	1972	AID Loan Paper (FIASA) 1974	1% writeoff if interest receivable	1977	Write off of interest receivable is first sign in financial statements that a loan is in trouble—1%-2% provision is probably adequate.
FIGSA	NO INFORMATION AVAILABLE					FIGSA is the smaller of the two private *financieras* and appears to be more aggressive in the placing of loans, indicating a probable slightly higher risk factor.
FENACOAC	7.6% delinquent more than 60 days	1974	Rural Cooperatives in Guatemala - ATAC 1975	12.7% delinquent more than 60 days	1977	FENACOAC delinquency as of 12/31/77 is $855,000. Considering guarantees (assets of cooperatives), FENACOAC states losses are $55,000, but is studying the situation in depth at present and amounts of losses may be higher.
FENACOAC Affiliates	8% delinquent more than 60 days	1974	Rural Cooperatives in Guatemala - ATAC 1975	24% delinquent more than 60 days	1978	FENACOAC affiliate delinquencies were not available at the time of visit. 24% delinquency is based on analysis of Salcaja Cooperative. Based on a review of aping of accounts and FENACOAC formula for determining uncollectability, the total amount uncollectable would be $5,400 or 10.8% of portfolio computed as follows:
						Past Due Months / Amount / % Uncoll. / Amo. Uncoll. 2-6 / $3,770 / 10% / $ 377 7-12 / 4,052 / 25% / 1,013 13-18 / 1,117 / 80% / 893 18+ / 3,125 / 100% / 3,125
PENNY FOUNDATION	5% Bad Debt provision	1972	Financial study of Penny Foundation Bebout and Eduardo 1972	14% delinquent more than 90 days (ag. only)	1978	Per controller of Penny Foundation, high delinquency is due to "rollover" of ag. credit for new growing season.
	2.9% delinquent more than 90 days (ag. only)		Rural Cooperatives in Guatemala "ATAC" 1975			

Table 50 (Cont)

Institution	Previous Findings			Present Situation		
	Rate	Year	Information Source	Rate	Year	Comments
BANDESA	20.3% delinquent more than one day (AID trust)	1974	Rural Cooperatives in Guatemala - ATAC 1975	31.8% delinquent more than one day (all trust funds)	1976	External auditors took exception to provision for doubtful accounts in 1976 as being inadequate. Reserve of $3,242,000 was based on Superintendent of Banks write-off recommendations for April 1974 portfolio. At that time portfolio was about $26,000,000, indicating a bad debt reserve of 12.5% of total portfolio. Portfolio as of end of 1976 had grown to over $50,000,000, but reserves had not been increased, hence the reason for the auditors' exception. Auditors were unable to estimate a proper reserve but were unable to determine if loans had been renewed nor the time period past due as no aging schedules were available.
CORFINA	NO INFORMATION AVAILABLE					Conflicting verbal information was given regarding small industry program delinquencies ranging from only 5% delinquency to 33%.

Determining uncollectable accounts is probably the most difficult job facing an auditor. After weeks of careful analysis including aging of accounts, checking of collateral and other procedures, a subjective judgement is made. With rather skimpy data above and assuming that collection procedures will be effectively enforced, I have assumed the following bad debt losses = FIASA and FIGSA, 1%-2%, FENACOAC, 2%; Coops, 4%; Penny Foundation, 4%; and BANDESA, 5%.

PART VII — ARTISANRY

A. General Response to Identified Constraints to Artisanry Related Rural Income Development

There are many constraints to the effective development of rural artisan income. These constraints have been considered and are reordered for priority of proposed program consideration as well as for program scale of attention:

1. **Export Marketing**
   General: Export Opportunities for rural artisans are unnecessarily limited.
   Specific:
   Ineffective product design response to export market interests (product design)
   Debasement of traditional designs and qualities
   Poor quality control — export products
   Untimely delivery — ineffective production organization
   Inefficient export commercial processing
   Ineffective packaging
   Ineffective packing
   Working material shortages
   Poor access to producer credits
   Ineffective export promotion (both national and international)
   Ineffective outreach to rural areas for export production
   The need to adjust export marketing margins to stimulate increased export volumes opportunities.

2. **Product Design**
   Limited access by rural artisans to production opportunities for non-traditional items.

3. **Traditional Indian artisans** enter risk climates with difficulty — credit support requires special disbursement conditions.

4. **Traditional Indian's cultural dependence** on traditional design and production systems requires cautionary product development intervention.

5. **Work Availability** (to rural artisans) — is often minimal and generally sporadic.

6. **Techniques and Training**
   Better techniques of production (and equipment use) are required for better artisan income and production performance.

7. **Cost of Equipment and other Capital Credits**
   Requires better access to credits associated with demonstrated work order opportunities.

8. **Market Margins**
   Requires opportune adjustments to favor small scale artisanry producers.

9. **Support Institutions** (Cooperative Federations and Cooperatives):
   — In early stage of development
   — Inadequate effect to date
   — Institutional development support indicated

10. **Resource Development and Conservation**
Non-traditional resource availabilities are not systematically investigated. Conservation of wood use activity by artisans requires attention.

11. **Statistical data for development intervention** is generally undeveloped.

This ordering of artisanry development problems identifies **product design** and **export marketing** as the primary considerations for proposed program attention. These priorities are established under the rationale that the early and continuing availability of (program sponsored) products design support as well as effective export promotion and rural production support are the essential leverage activities in dealing with all artisan income development constraints. The leverage is identified with development of continuing, commercially effective, production volumes of artisan products. The significant purchase of on-going production permits effective program attention and adjustment to artisan income development constraints.

B. **Institutional Consideration**

ARTEXCO

A review of the ARTEXCO organization indicates a current outreach to cooperatives affiliated artisans of some 4000 persons. 1/ The problems of ARTEXCO development continue to be matters of quality control, general export capacity, product design development, retail sales management, credit support for both inventory purchase and working materials, cooperatives management development and effective working relationships with member cooperatives. ARTEXCO internal management requires both intensive training and working experience. The headquarters location of ARTEXCO, in rural Quezaltenango, provides for some difficulty in marketing exposure of ARTEXCO products as well as training access to ARTEXCO management. The total 1971 sales of ARTEXCO reached some $93,000 with $30,000 in export volumes.

Notwithstanding its operating difficulties, the importance of this young organization (founded in 1974) as a potentially effective focus of product development and marketing service to Guatemalan artisan cooperatives is evident.

In a current effort to respond to the performance shortcomings of the ARTEXCO organization, the Inter-American Development Bank is providing a 2-year technical assistance support intervention to ARTEXCO. The grant sum is in the amount of $305,000 and is to be disbursed in two operating years with program start anticipated in 1978.

The IDB supported intervention is anticipated to provide an upgrading of the ARTEXCO performance which will permit an eventual and, perhaps, significant artisan cooperatives outreach capability by ARTEXCO in the years ahead.

C. **Program Description**

General Description and Task Responses

The program proposes a support to the GOG to permit an effective response to the observed constraints to rural artisan income development and as indicated by priorities here identified (Part III-A).

The program proposes support to the GUATEXPRO organization as the GOG program executive agency. The support to GUATEXPRO is determined by the particular qualifications of this public export development institution to effectively administer the priority program tasks specified within the program.

The program proposes a USAID support to the GOG / GUATEXPRO execution and com-

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1/ IDB / Program Evaluation 7 / 77

pletion of three principal tasks. These tasks are designed to effectively respond to the several identified constraints to improved incomes for poor and rural artisans.

Program Task Responses

TASK I. — **Development of an Effective GUATEXPRO Artisan Products Export Promotion Facility**

Successful technical and financing support to rural artisans is suggested to be finally dependent upon a continued successful artisan (benefits considered) product marketing performance. The penetration of export markets, particularly, permits both the product and cash flows that must be finally available to provide the lasting increase in income benefits that are defined within the goals of the program.

The permanent establishment of trained leadership, operating techniques and facilities to permit a cost acceptable support to rural artisan product export marketing is the purpose of TASK I.

It is proposed that Task I will be directly administered by a GUATEXPRO official to be referred to as the Artisan Export and Promotion Manager and that this official be nominated the principal GUATEXPRO executive officer of the Program. It is proposed that the Artisan Export and Promotion Manager be supported by an Artisan Export and Promotion Advisor to be enabled within the USAID technical assistance contribution to the Program.

It is proposed that the Artisan Export and Promotion Advisor will be available to the program for a period of 36 months and will serve as the team leader for USAID supplied technical assistance personnel to the Program.

The Artisan Export and Promotion Manager will administer the development of a GUATEXPRO housed facility which will permit the execution of export services in support of the stated purposes and goals of the program.

The GUATEXPRO facility for export services to the rural artisanry production community is here referred to as the **Office for Artisanry Exports.**

The Office of Artisanry Exports will establish as Sub-Tasks of Task I.

1. **Export Exhibition Center**

The Export Exhibition Center will be funded and established by GUATEXPRO to adequately and effectively house the services to be provided by the Office of Artisanry Exports. The Export Exhibition Center is to be characterized by a well designed ample interior as well as an attractive and easy public access location.

The Export Exhibition Center will provide:

1.11 Show room services — for display and export promotion of Guatemalan (program related, rurally produced) artisanry products.

Show room services will include:

1.12 Sales and Courtesy services to visiting export buyers.

1.13 Special exhibitions for international buyers.

1.14 Photo / files — for Buyer Review of Products and Resources (ALL Guatemalan Artisanry).

1.15 Preliminary Export Order Processing Facility.

1.2 General Services — OAE

1.21 "Good Design Label" Program. The OAE will sponsor an honorary "good design" jury (having national and international membership) to periodically nominate Guatemalan craft products for a "good design" label award. The Good Design Label Program provides particular opportunities for useful export promotion.

1.22 International Buyer Correspondence Service.

1.23 Page Production (Catalog) of Available Products for Buyer Service and Correspondence.

1.24 International Fairs and Exhibitions Product Presentation and Sales Services.

1.25 Operation (to be determined) of offshore showroom facilities.

1.26 International Liaisons with Artisanry Development Support Donor and Executive Agencies.

2. **Export Process Service**

The Office of Artisanry Exports will provide (on a charge basis) variable export services to eligible rural (target area) based artisan producers. Eligibility of artisan producers for GUATEXPRO export process services will adequately reflect the goals and purposes of the program.

Under no circumstances will export services be available to non-target area producers. Export service attention will be particularly available to artisan production cooperatives, federations of cooperatives (ARTEXCO) individual and small scale producers who are generally identified as those persons or enterprises meeting the eligibility requirements for credits support within the USAID Small Enterprise Loan program.

2.1 **Export Process Service Section**

The OAE will establish an EPSS Section headed by a qualified accountant. The EPSS will administer the several indicated sub-tasks of export processing i.e. (i) export purchase financing, (ii) export documentation and (iii) export warehousing, packaging, packing, and inland shipping services; rural collection-services.

2.2 **Export Inventory Purchase**

The OAE, enabled by letter of credit and/ or prepaid on-hand, export orders, will purchase / finance and stock for shipment required export merchandise volumes.

Inventory financing for this activity will be funded within the program.

2.3 **Working Materials Financing**

The Export Processing Section will provide work order associated credits to eligible artisans required working materials. The credits may be in cash or kind. Credits for capital equipment or other working capital will not be normally supplied by this Section. (See Sub-Task II. l. 14)

2.4 **Export Documentation**

The EPS will provide full documentation services on a charge basis.

2.5 **Export Warehousing, Packaging,**
Packing and Inland shipping — Services
Rural Collection — Services

The OAE, within the Export Processing Section, will provide secure and clean warehouse services as well as adjoining facility for packaging & packing (both air and sea freight). Facilities for inland freight to product embarkation points will be provided and / or maintained.

As indicated, a rural collection service for completed products will be developed, on a reasonable charge basis, and to permit export participations by remote and rural artisans.

3. **Quality Control**

The OAE will establish and administer an effective sample base quality control program for application to all orders processed by the export service facilities of the OAE.

4. **Statistical Data**

The OAE will establish statistical recordings of export data related to amounts and kinds of export production including:
— product destinations.
— product prices and price trends.
— numbers of artisans served by export product activity and such additional statistical material relevant to the support of export promotion management decisions.

TASK II. — **Development of a Continuing Facility for the On-Going Design of Artisanry Related Products Suitable for Rural (Target Area) Production**

The traditional designs and products now produced by target area rural artisans are often both antique and excellent and require considered conservation by program participants to assure the preservation and continued commercial success of these largely family produced items. The traditional production, however, are not indicated as sufficient, even with intensive marketing support, to accommodate the adjustment response necessary for under-employment in the target area.

The development of design and product variants based upon traditional skills or upon new skills (training) permits, in rural areas, new income earning opportunities. A directive of TASK II requires a responsible development of designs, product samples, production design (systems), market research support, market testing support, and production implementation support. The program design facility will support a Guatemalan professional capacity for artisan related product development with production directed to rural Guatemala and the USAID nominated target area.

The GUATEXPRO execution of the Task will be administered by a professionally qualified Chief of Design supported by an Artisan Products Designer, and Production Advisor provided as a USAID technical assistance component of the Program.

The Artisan Products Designer and Production Advisor is programmed for 36 months of support to Task II.

Task II will be administered jointly with Task I and under the general administrative supervision of the Artisan Export and Promotion Manager. The activities of Task II will be conducted within the Rural Exports Development Department.

1. **Design Section**

The Chief of Design as well as the Artisan Products Designer and Production Advisor will be supported by a design studio facility. The facility will include drafting equipment, audio visual equipment, relevant production and testing equipment and supplies. The design studio facility will be located in Guatemala City at the Office for Artisanry Exports.

1.1 Design and T.A. Section Activities

1.11 Product Design

With consideration for the conservation of traditional design and production systems, the Product Design Section will seek to support the creation of product variants which are indicated to provide additional rural income generation opportunities. Product design will stress the use of traditional skills, systems, product elements and will further seek to introduce new non-traditional work opportunities to the target environment through new product development. Product designs will accommodate production by individual artisans, small shops and cooperatives, as indicated by the goals of the Program.

The Product Design and TA Section will create new products as well as modify existing productions in favor of significant export acceptance.

1.12 Production Systems Support.

The product Design and Technical Assistance Section will provide direct support to program participants for improvement of production processes. The PDTA's will be supported by a technical data collection as well as by short-term consultants provided under USAID technical assistance support. The short-term consultants will be directed to the solution of specific and common craft sectoral production problems.

The PDTA's is anticipated to coordinate its efforts with the technical services availabilities provided with the CORFINA / IDB / ARTEXCO Artisan Cooperatives Development Program (Phase II).

The Product Design and Technical Assistance Section will utilize the design and workshop facilities provided for the execution of Task II.

1.13 Management Support

The Product Design and Technical Assistance Section will provide both management support, and as indicated, financial guidance to eligible and program participant small scale artisanry producers. This service will be provided by a GUATEXPRO Management Counselor assigned to the PDTA's. This service will deal with problems of financing, costing and pricing, record keeping.

The services of the PDTA's will include support to such problems as packaging and packing, dye specifications and preparation systems, appropriate machine training, work flow systems, and scheduling, materials and inventory storage and control; new methods training and general adaptation to new product opportunities.

The tasks of the Product Design and Technical Assistance Section are strongly field oriented and support the section in the form of an all-terrain vehicle included in the USAID technical assistance sub-programs.

1.14 Production Credits Support

The PDTA's will respond to work opportunity related production credit needs of individual artisans, cooperatives and eligible small scale producers by preparation and support of credit applications to an established program fund.

It is proposed that USAID provide a credit fund in the amount of $1,000,000 with CORFINA. This fund will be responsive to small scale credit needs for artisans developed by the Product Design and Technical Assistance Section and supported by the GUATEXPRO Office of Artisanry Exports. (See Task III).

1.15 Non-traditional Resources Development

The PDTA's will continually consider and examine opportunities for the development and

use of Guatemalan natural and non-traditional resources for possible application to artisan production.

TASK III. — **Credit Fund — GUATEXPRO and GUATEXPRO Supplier Access**

The development of Tasks I and II require access to credits at several levels.

(a) Inventory Purchases —

The preparation of export orders for artisanry products generally requires extended-time purchases of partial order quantities before complete, as specified, export shipments can be made. The extreme economic margins characteristic of rural artisanry production generally requires (i) Order advances (credits) for order-related materials purchase and (ii) Immediate payment on delivery of (acceptable) order inventory.

These credit access needs of the GUATEXPRO Office of Artisanry Exports require a credit access fund as a source of routine disbursements. The requirements for credits by GUATEXPRO is anticipated to be particularly intense during the early years of operation and until sales volumes supported by Letter of Credit purchases are significant.

(b) Order Advance — Artisan Production Credits

It is anticipated that the Office of Artisan Exports will be required to advance production materials cost (either in cash or kind) for all rural produced products.

(c) Capital Credits — for Workplace Development, Equipment, Tools

Order related small enterprise development opportunities are anticipated to precisely identify, to the Product Design and Technical Assistance Section of the OAE, indicated producer capital credit needs.

To accommodate these needs for GUATEXPRO artisan program credit access, it is proposed to establish a credit fund, within the CORFINA facility. This Fund is proposed to be limited to rural small enterprise borrowers with eligibility as defined within the general Small Enterprise Loan Program Paper. A further eligibility for access to this fund is proposed to be a GUATEX-PRO loan sponsorship and guarantee for repayment.

The amount of this fund is proposed to be $1,000,000.

The satisfactory execution of Tasks I and II and III is anticipated to effectively address the observed constraints to significantly improved income development for the USAID target area rural poor artisans. i.e.

Limited export opportunity for the production of **rural artisans.**
Limited access to non-traditional opportunities by **rural artisans.**
Ineffective product design response to export market interests — **by rural artisans.**
Debasement of traditional design and quality by **rural artisans** — for lack of design support assistance.
Poor quality control support for **rural production** seeking export opportunity.
Untimely delivery by **rural producers** for lack of productivity support.
Unavailable export commercial processing to **rural producers.**
Unavailable export packaging and packing to **rural producers.**
Limited working material access to **rural artisans.**
Limited access to credits by **rural artisans.**
Limited export promotion of **rural artisan** current and potential productions.
Ineffective current outreach to **rural areas** for export production opportunities.
Limited national facilities to modify export margins to stimulate export of increased production by **rural artisans.**

SUMMARY OF CONSTRAINTS TO RURAL TARGET AREA ARTISAN INCOME DEVELOPMENT CONSIDERED BY THE TASK RESPONSES OF PROGRAM TASKS I, II and III

1. Export Marketing — limited export marketing opportunities for target area rural artisans
1.1 Debasement of traditional designs and qualities
1.2 Poor Quality Control — export products
1.3 Untimely Delivery — ineffective production organization
1.4 Inefficient Export Commercial Processing
1.5 Ineffective Packaging and Packing
1.6 Working Material Shortages
1.7 Poor Access to Producer Credits
1.8 Ineffective Export Promotion
1.9 Ineffective Outreach to Rural Areas (Potential) for Export Production Opportunities
1.10 Adjustment of Export Marketing margins to stimulate increased export volumes and producer advantages.

Response — TASKS I, II and III

2. Product Design — limited access to non-traditional design item for rural artisan production opportunity.

Response — TASK II

3. Traditional Indian Artisans Enter Risk Climates with Difficulty — credit support requires special disbursement conditions.

Response TASK I — 2.3 TASK II — 1.14 TASK III

4. Traditional Indians Cultural Dependence on Traditional Design and Production Systems — Requires Cautionary Product Development Intervention.

Response TASK II

5. Work Availability (to rural artisans) often minimal and generally sporadic.

Response TASK I
Response TASK II

6. Techniques and Training
Better techniques of production (and equipment use) are required for better artisan income and production performance.

Response TASK II — 1.11, 1.12 and 1.13

7. Cost of Equipment and Other Capital Credits — requires better access to credits associated with demonstrated work order opportunity.

Response TASK II — 1.14
Response TASK III

8. Market Margins
Requires opportune adjustments to favor small scale producers.

Response TASK I — 2.2, 2.3 TASK II — 1.14

9. Support Institutions (ARTEXCO)
— In early stages of development

— Inadequate effect to date
— Institutional development support indicated
Response TASK II — 1.12

10. Resource Development and Conservation — non-traditional resource availabilities are not systematically investigated.
Response TASK II — 1.15

11. Statistical Data — for Development.
Intervention is generally undeveloped.
Response TASK I — 4.

PROGRAM GOALS

The effectiveness of program response (s) to the constraints inhibiting the development of rural income opportunity should be evaluated within several categories or program goals.

a. Increase in rural (target area) workplaces for the production of both traditional and non-traditional artisanry related products.
b. Increase in both per capita and family artisanry incomes as well as absolute numbers of artisanry income beneficiaries.
c. Increase in number of rurally produced artisan products (items) as well as volumes of production.
d. Positive adjustment of marketing margins to favor producer income as well as optimum export volumes.
e. Positive adjustment of artisan access to work opportunity related credits.
f. Positive change in the use of equipment and technique favoring optimum producer income as well as improved productivity.
g. Support to the development of on-going government and private institutions acting to support favorable income earning opportunities for rural artisans.
h. Support to the development of necessary vertical or horizontal integrations of activities to assure optimum product design / production and marketing in favor of continuing and positive artisan incomes.

PURPOSE

This project proposes to effectively support the GOG to create artisanry related employment opportunities within the rural poor communities of Guatemala. The project proposes to significantly advance the quantity and varieties of rurally produced goods through an increase of export product demand as well as local tourist purchase. It is a purpose of the project to provide considered technical assistance, appropriate credit support and effective marketing support to rural producers of artisanry with intent to measurably upgrade both per capita and family real income as well as employment opportunities for Guatemalan rural artisans.

OUTPUTS

To achieve the purposes of the program, two outputs are selected:

(a) The support to the GOG through the Guatemalan Export & Promotion Organization (GUATEXPRO), for the formation and operation of an Office of Artisanry Exports (OAE). The OAE, with program sponsored technical assistance implementation support,

will administer the development of wider artisanry related production in the rural (target) areas. The OAE is directed to respond to observed constraints to improved rural area artisan incomes.

(b) The further support to OAE activities by the program supply of loan funds to be placed with CORFINA and directed, through OAE administration, to the sub-borrower requirements of program related rural artisans as well as the working materials and inventory purchase requirements of the OAE.

INPUTS

USAID

The program consists of the following elements:

(a) **Technical Assistance — Personnel**

Total Cost 390,000

1) **Artisan Export and Promotion Advisor**
In support of the (GUATEXPRO) Artisan Export and Promotion Manager. This contract official will be an overall task responsibility for effective USAID support to the program and to the specific program goals — 36 Mos. at 5 ea. 180,000

2) **Artisan Products Design and Production Advisor**
In support of the (GUATEXPRO) Chief of Design — This contract official will be responsible for support to program efforts to develop and/or produce increased volumes of quality controlled artisan products within the USAID nominated program target area. He is further directed to the support of improved per capita (and family) artisan incomes — 30 Mos. at 5 ea. 150,000

3) **Production Consultants**
As required, consultants in such (to be selected) areas as textiles, ceramics, wood working, industrial engineering, marketing or others, will be available to the program and as nominated by the Artisan Export Promotion Manager and the Artisan Export Promotion Advisor.
13M/M at 5 ea. 60,000

(b) **Technical Assistance Support — Total Cost:** 16,000
T.A. Support All Terrain Vehicle (s) 2 at 8,000 ea. (Cargo Body Vehicles) (16,000)

(c) **Equipment** 20,000
Design Studio and Workshop Equipment (Inc. Audio Visual Equipment) (20,000)

(d) **Materials** 38,000
Technical Literature and Materials (3,000)
Product Development — Materials Purchase/Warehouse Equipment (25,000)
Products Catalog and Marketing Support (10,000)

(e) **Travel Expense** 30,000
International (Fairs & Exhibitions) (20,000)
National (10,000)

494,000

GOG

The GOG will furnish the following support to the program:

(a) Personnel (4 yrs.) 220,400
Artisan Export and Promotion
Manager — 48 mos./1,100 ea. 52,800
Admin. Assistant — 48 mos./400 ea. 19,200
Chief of Design — 48 mos./900 ea. 43,000
Accountant — Chief Export Process

Service Section — 40 mos. / 800 ea.	38,400
Warehouse Manager — 48 mos. / 400 ea.	18,200
Warehouse Assistant / Packer — 48 mos. / 250 ea.	11,000
Accounting Clerk — 48 mos. / 300 ea.	14,400
Design Assistant — 48 mos. / 300 ea.	14,400
Production Assistant-field 48 mos. / 300 ea.	14,400
Management-Field Advisor 48 mos. / 300 ea.	14,400
1 Secretary — 40 mos. / 250 ea.	11,000
2 Typists — 48 mos. / 200 ea.	9,600
48 mos. / 200 ea.	9,600
(b) Export Showroom, facility — Est.	175,000
Program offices (6-8)	
Warehouse & Packing facility	
Design Studio space	
Workshop	
Garage and Vehicle Maintenance	
Office Equipment and furniture	
Showroom Display Equipment	
(a) + (b)	395,000

COSTING OF PROJECT INPUTS (000)

USAID	**Total**	**YEAR 1**	**2**	**3**	**4**
T.A. Personnel	330	60	120	120	30
66 Person / Months LT	330	60	120	120	30
12 Person / Months ST	60		20	20	20
T.A. Support Vehicles 2 at 8 ea.	16	16			
Equipment	20	5	10	5	
Materials	38	10	10	10	8
Travel Expense	30	5	10	10	5
Total	494	96	170	165	63

GOG

Personnel	
624 / Person / Months	220
Export Showroom	175
Construction	
Program Offices	
Warehouse and Packing Facility	
Design Studio	
Workshop	
Garage & Vehicle Maintenance	
Office Equip. & Furniture	
Showroom Display Equip.	
Total	395

PART VIII — APPROPRIATE TECHNOLOGY

Rural Enterprise Considerations for Guatemala

A. **Definitions:**

A requirement in dealing usefully with Appropriate Technology (A.T.)1/ , in concept as well as program applications, lies with acceptable working definitions.

There are several principal A.T. definitions or considerations which, separately viewed, may lead to variable program approaches. e.g.

Appropriate Technology and Appropriate Engineering
Light Capital Technology and Rural Productivity
Adaptive Intervention and Quality of Life (Promotion)

Appropriate Technology — Appropriate Engineering

The term "technology" within "appropriate technology" frequently directs a consideration of the process as appropriate engineering. Appropriate or adapted engineering is a useful professional concept and is importantly related to appropriate technology practices. Appropriate engineering, however, tends to be identified with principal or "mainstream" economic and agro-industrial development and less with the alternate technological requirements of communities essentially untouched by the technologies of the integrated economy.

Appropriate engineering tends to deal with development cases existing in the environments of technological growth. Appropriate technology also tends to operate in environments that may actually reflect neo-lithic or early iron-age productivity conditions and certainly pre-industrial environments.

The A.T. approach, while frequently dependent on good engineering responses, tends to require the use of particular systems and hardware no longer considered in advanced societies.

Unlike general engineering, A.T. applications must also deal constantly and competently with significant cultural constraints and values including attitudes and capacities for even minimal technological change.

Light Capital Technology and Productivity

This concept recognizes the concentrations of rural unemployment, in third world conditions, as "congealed capital." This labor force capital is suggested to be organized via purposeful national (and international) support interventions into effective productivity factors.

The stress within this A.T. viewpoint is the production of goods and services utilizing low capital and labor intensive production techniques. The selection of products and their end use recognize local natural and human resource conditions as well as the consumption and employment needs of the producing community.

By example, the sometimes Chinese practice of labor intensive road construction as well as light manufacture of consumer goods (furniture, clothing) without medium or small-scale power tools, is considered an effective employment of congealed capital as abundant labor.

It is not the apparent intent of the congealed capital argument to suggest a precise use of the Chinese model considering the authoritarian applications identified with the application of the process. The argument does stress considered promotion and support to responsible national programs directed to low capital / labor intensive productivity. The use of technologies appropriate to labor intensive productivity is implied.

As further examples of light capital technology employment, such cultural groups as Amish or Mennonite societies have applied and maintained labor intensive productive techniques that serve most of their product needs. Their life style represents a considerable independence from otherwise produced material requirements. The Israeli industrial and rural kibbutz has tended, at

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1/ or "Intermediate" or "Light Capital Technology"

times, to successfully produce both capital and consumer goods using labor intensive techniques though these organizations are now more directed to the use of capital intensive methods. The Israeli case appears to have been a pioneer society resource factor response and current labor (factor) scarcity in that country has apparently favored a move to capital intensive performances.

Again, within closely directed societies such as China, there are ample indications of intensive production use of labor and with reports of returns to labor at least sufficient to provide adequate food, housing health and education.

In these cases, however, light capital technology applications have been either culturally limited (Amish / Mennonite); temporary (Israel) or within centrally planned and rigidly controlled societies (China).

The promotion and implementation of the intermediate cost workplaces indicated for light capital technology (and productivity) is likely more difficult to (generally) achieve in industrially developing communities.

This difficulty notwithstanding, the continuing condition of third world under-employment and economic restriction persuades a dispassionate consideration of wider light capital technologies for national and international development support consideration and experimentation.

Adaptive Intervention and Quality of Life

Where light capital appropriate technology is directed to a labor intensive production of goods and services, the **Adaptive Intervention** view of the use of A.T. envisions the introduction of modest scale devices (hardware) and systems (software) into (rural) environments and to deal, accordingly, with observed constraints inhibiting **better living conditions** for a given population. The devices and systems are "appropriately" at a minimal capital cost properly reflecting the replacement capacity of the recipient community.

The devices and systems are selected for site-related practical low cost maintenance and for durability and simplicity of operation, as well as local light capital manufacture.

The application of considered design and low general cost interventions to improve rural life conditions **in the short run** identifies this concept of A.T. as adaptive technological intervention. Implied in the use of adaptive or light capital technology is the goal of the low cost workplace investment. In practice this investment may vary from 420 to $1,000.

Adaptive technology interventions may include several hundred specific activities under several general categories. e.g.

Rural Development Constraints Categories

Potable Water
Nutritional Access
Alternate Energy
Tools and Equipment Access
Housing and Construction Materials
Food Storage and Processing
Access Roads
Sanitation
Public Health
Transportation

As indicated, there are several principal approaches to defining the concept of appropriate technology. A number of underlying facts and concerns regarding economic and social development in Latin America appear, however, to meet with a broad consensus. These relate to:

a. the availability for most development activities of technological alternatives with different socio-economic implications;
b. resource patterns in most countries of the region typically characterized by the relative

scarcity of investment capital and the abundance of unskilled labor;

c. the continued existence of sizeable population groups and sectors — both rural and urban — **outside of the mainstream of social and economic development;**
d. the desirability of fostering socio-economic development processes entailing the participation of the various population groups and an equitable distribution of benefits; and
e. the limited availability of external development assistance resources from the industrialized countries.

In view of the above, some basic criteria have been used to identify appropriate technology applications. These applications are considered to involve the productive use of small-scale and less complex processes, equipment, tools, standards and related systems, than typically employed in industrialized countries and which substantially embody the following elements:

a. low total and per capita investment costs, permitting the widest number of target beneficiaries to be reached in a short time period with limited development resources;
b. intensive utilization of labor — especially unskilled labor — promoting the generation of benefits for low-income population groups and favoring the substitution of idle labor resources for scarce capital;
c. suitability for low-income environments through the participation of marginal producers and users in the establishment, development and management of the techniques and activities concerned, as well as through the utilization of local resources to meet local needs, thereby encouraging individual and community self-sufficiency.

These A.T. application requirements recognize the special need to provide development assistance to beneficiaries whose socio-economic conditions reflect a position that may be characterized as **outside of or at the subsistence margins of an integrated national economy.** These populations — found in both technically advanced as well as developing societies — are the particular and, most often, the optimum beneficiaries of successfully applied adaptive or light-capital technologies. The corresponding use of these technologies to support identified persons and communities aims at producing measurable improvements in economic opportunities and in life quality (employment, productivity, income, nutrition, shelter, water, public health, social balance, etc.), **in relatively short-time** spans.

It is not here implied that the successful application of appropriate technologies, is, necessarily, a self-contained solution to the difficulties of the subsistence level rural or urban poor. They may in practice represent only pragmatic efforts to introduce technology support appropriate for the immediate conditions and requirements of targeted rural populations. These populations are expected to continue their general social and economic evolution as changing circumstances, economic opportunities and individual and cultural inclinations permit.

Approach

In considering development support to appropriate technology uses in rural Guatemala, the focus of this study is upon the promotion of:

Rural Productivity and Employment Generation with consideration of **Light-Capital Technology Applications** and

Quality of Life — Improvement within Village and Domestic Environments and with **Adaptive Technology** Applications.

B. **Institutions**

There are several public and private Guatemalan institutions whose current activities have begun to relate to appropriate technology considerations. Additionally, several Guatemalan institutions have apparent capacity to usefully relate in future to appropriate technology development.

CEMAT — Middle American Study Center for Appropriate Technology

CENTRO DE ESTUDIOS MESO-AMERICANA SOBRE TECNOLOGIA APROPIADA

The CEMAT Organization was privately created as an immediate response to the earthquake traumas of 1976.

Now two years old, CEMAT is identified as a Guatemalan legal, non-profit, private rural development entity directed to appropriate technology development. With principal offices in Guatemala City, CEMAT operates with a professional full-time staff of 6 and with some 12 professional volunteers on call.

The funding of CEMAT is reported to come from three general sources.

1/3 — International Donor Agencies
1/3 — National Donors (Agencies & Individuals)
1/3 — Earned Income:
1. Sale of Publications
(Primarily Reprints and Translations)
2. (Assisted Groups pay up to 70 percent of development costs largely through materials purchases).

CEMAT reports that it has directed the support of two categories of appropriate technology and stresses that it is primarily directed to the development of low to intermediate cost work-places and stable qualitative employment within Guatemalan rural and, essentially, highlands environments. Rural development activity is emphasized though urban activities are increasingly considered.

As a second consideration, CEMAT is concerned with support to village infrastructure development and to the general improvement of quality of life through appropriate scale technological intervention.

The operating functions of CEMAT include:

1. **Appropriate Technology Library**
CEMAT maintains an international linkage with appropriate technology institutions. CEMAT has the in-house capability of translating documents from English, French and German and now offers some 70 technical works in Spanish.
CEMAT conducts specific data research for staff requirements.

2. **Research**
CEMAT has investigated, in some 14 rural experiment stations, rural productivity possibilities related to:
(1) Light Weight Roof Structures
(2) Latrine Devices
(3) Clay Stoves
(4) Pumice Utilization
(5) Bio Gas Generators
(6) Lime and Limestone Resources
(7) Adobe Construction Modifications
(8) Wood Use Alternatives (for Energy)
(9) Public Health Delivery
(10) Hand Tools Construction

3. **Divesture Policy**
CEMAT reports that it retains no licences or proprietary rights to devloped processes and

leaves all equipment and operations within the management and ownership of the beneficiaries assisted.

CEMAT also relates closely to the activities of:

CETA: Centro de Estudios de Tecnologia Apropiada
(University and Engineering Contributary Group).

CEMAT appears to be particularly directed to the development of labor-intensive rural industry identified by the low-cost workplace.

It is the reported operational policy of CEMAT to consider highly structured A.T. promotion as unnecessary. CEMAT officials believe that useful and acceptable technical innovation "sells itself" in a small country and need not be intensively "sold". CEMAT officials conclude, however, that knowledge of the existence and availability of A.T. idea and processes do require some dissemination and suggest that a mix of published data, inter-organizational meetings and the routine advice of A.T. process availabilities to educators, government agricultural extension agents, mass media, church groups and volunteer groups will adequately identify and implement A.T. devices and processes that are publicly valued and acceptable.

CEMAT officials appear well acquainted with the general world community rural development constraints. The CEMAT methodology for identifying Guatemalan A.T. projects is not clear. The development by CEMAT of effective linkages with other Guatemalan and international institutions is not evident.

An evaluation visit to an actual CEMAT project was not provided by CEMAT officials.

THE CENTRAL AMERICAN INSTITUTE FOR INDUSTRIAL INVESTIGATION AND TECHNOLOGY (ICAITI)

ICAITI is the leading Central American independent and non-profit institution directed to the transfer as well as modification of industrial process technology on behalf of area development needs. ICAITI is structured to provide industrially supportive applied research as well as market and feasibility studies, process development, standards preparation, analysis and certifications, appraisals and microbiologic studies. ICAITI is staffed with senior scientists and technicians and is supported by modern research laboratories. A contract institutions, ICAITI is directed, particularly, to the transfer and modification of technology to accommodate a five-country (Costa Rica, El Salvador, Nicaragua, Honduras, and Guatemala) industrial development need.

In recent months, ICAITI management has begun the consideration of the possible ICAITI role in appropriate technology research and application. There is some indicated ICAITI concern that the demands of appropriate technology management are somewhat apart from current ICAITI capacities. Cultural constraints related to technical change as well as lengthy on-site requirements for adaptation of developed processes are suggested by ICAITI as important current limitations to ICAITI effectiveness in appropriate technology applications.

The ICAITI institution, it is suggested, is now essentially directed to laboratory related and more capital intensive and technologically complex supports.

Comment:

ICAITI does appear to be particularly oriented to sophisticated technology adaptation and transfer and for support to medium to large scale industrial development. While the management of this institution is indicated to recognize the sometimes advantage of small scale technology and productivity, ICAITI remains essentially structured and directed to the support of more complex industrial and agro-industrial processes.

ICAITI management, however, indicates its interest in a commitment to a capacity development to support appropriate technology interventions and likely through the in-house development of simple prototype devices suitable for rural process application.

Notwithstanding this commitment interest, it is considered that ICAITI does not now have the outreach capacity or current adequate organizational ability to effectively and directly respond to either rural quality-of-life technical support development or to very small scale rural productivity support. ICAITI however, could and would likely have some positive input capacity for specifically identified A.T. related research and development processes requiring the equipment and sophisticated consideration of ICAITI plant and staff. This limitation considered, it is likely that ICAITI could, at times, be effective in the development of processes that are adaptable to small scale rural productivity. ICAITI could possibly and additionally serve as an A.T. data resource.

It is suggested, however, that a planned and organizationally structured ICAITI commitment to the effective and additional support of alternate and low-cost workplace rural productivity is a current requirement for useful ICAITI intervention in Guatemalan as well as meso-American appropriate technology applications.

INCAP

NUTRITION INSTITUTE FOR CENTRAL AMERICA AND PANAMA

INCAP has been in operation since 1953 and serves particularly, the nutritional research directions of the several Central American countries. A legal, non-profit organization, INCAP is funded by its several members country clients as well as by variable-volume contributions from national and international donor groups and agencies. The several modern buildings of INCAP house some 125 scientists and technicians. The INCAP technical library contains some 30,000 bound volumes.

INCAP is best described as an applied research institution with the over-riding purpose of supporting not only the development of nutritional data but the further development of area agro-industrial capacities. INCAP seeks to identify optimum support to farm production, food processing and dietitic habits in a continuing effort to upgrade nutritional intake in the Central American communities.

INCAP is currently developing a field sited program directed to the discovery of more effective ways of disseminating useful data as well as related technology support to rural low-income farmers.

The program called a "Model for Integral Development" is to be located in the town of Santa Maria Cauque, some 45 kilometers from the capital. The project purpose is the discovery through on-site-trial and effort of optimum means of reaching the rural poor in matters of public health and nutrition with the on-going capacities of INCAP.

The program is concerned with encouraging nutritionally useful and locally acceptable agricultural practices as well as dissemination of improved nutritional awareness.

Comment:

The proposed INCAP project at Santa Maria Cauque indicates the interest of this institution in the effective introduction of nutrition related appropriate technologies in rural Guatemala.

The orientation of selected INCAP technicians to rural development and to appropriate technology development indicates a continuing role for INCAP in the identification of rural nutritional development constraints. INCAP, as well, is likely to be a source of useful research and development appropriate technology response to these constraints.

ICTA

INSTITUTE OF AGRICULTURAL SCIENCE AND TECHNOLOGY

ICTA was established in 1973 by the Government of Guatemala as a national research institution responsible for the development and promotion of agricultural technology.

ICTA's formal policy directions require the development and promotion of appropriate agriculture technology directed to the purposes of general rural development. ICTA maintains research support linkages with both national and international institutions. ICTA's predominant activity to date has been basic grains research and development.

The agricultural research activities of ICTA tend to include on-farm experimentation as well as testing programs on operating farms. Promotion of ICTA research results are, at present, informally managed through Dept. of Agriculture Extension Services (DIGESA). Other public and private linkages for ICTA developed data dissemination are under development.

ICTA staffing includes sociologists and economists directed to the study and identification of cultural and economic constraints related to agricultural technology development.

An approximate one-third of the present ICTA activity is directed to the Guatemalan Highlands development.

ICTA indicates its concern for promoting both qualitative and quantitative crop improvements in an effort to generate an increased farm family income. The ICTA strategy includes the sensitive promotion of non-traditional crop mixes (i.e., maize and horticulture) with the purpose of maintaining or increasing nutritional output as well as increasing cash income.

While ICTA is not predominantly concerned with the target area rural development problems, the existing activities of ICTA now directed to the highlands should prove an important source of agriculturally related development constraints data as well as technical processes for area use consideration. Linkages to the ICTA organization to enable wider use of the ICTA data yield is strongly indicated.

Voluntary Organizations

CARE, CRS, CHOQUI, Peace Corps, World Vision, etc.

Guatemala benefits from the presence of field active representatives of a number of voluntary development support organizations.

The organizations have varied capacities and some, through their representatives, have already undertaken the development and implementation of appropriate technology supports.

Volunteers tend to be able to supply extended time field support performances and often may make the necessary on-site support performances that permit successful implementation or adaptation of a new process.

Peace Corps persons, particularly, may provide valuable appropriate technology related support services.

C. Public Policy and Support Factors

Development programs for light capital rural enterprise promotion, may be either abetted or inhibited by national financial and legal policies.

Where policy support conditions are inhibiting to growth of rural low cost workplace productivity, the lack of support may result from a considered policy action or, possibly, from a posture of neglect of an available development opportunity. Whatever the factors that motivate national decision-makers and planners to either neglect or effectively deal with rural labor intensive productivity potentials, the actual systems of inhibition or promotion are several.

Foreign Exchange Valuations

Where foreign exchange is relatively unrestricted and credits abundant, there is generally evident a factor distortion favoring continuing imports of several high technology transfer elements:

— machinery (and processes)
— processed and semi-processed materials
— technicians
— royalties and licenses

Liberal foreign exhange conditions do tend to subsidize access to the elements of captial intensive production.

In Guatemala significant import restrictions are not identified for high technology (factor) imports. Technology adaptation appears restricted only by market demand.

Foreign Aid Credits

Foreign Aid Credits, as unrestricted, may support the continuing import and transfer of foreign credit source related technologies.

In fact, foreign aid credits remain abundant to Guatemala from bi-lateral, multi-national and private sector resources.

The current U.S. policy direction for the uses of U.S. supplied development credits for rural development, creates only a limited inhibition of credits access for technology transfer costs in Guatemala. Guatemala retains foreign aid credits from U.S. and European banking consortiums as well as from more recently established Arab banking services.

Notwithstanding, Guatemalan foreign credits access for industrial import purposes, Guatemala continues to respond to rural development concessionary credit availability by continuing rural development programs participations. These participations are generally with USAID / Guatemala Inter-American Development Bank, World Bank, United Nations agencies and others.

Import Duties — Policies

The regulations and supporting laws of Guatemala tend to favor the importation of captial intensive production factors.

Industries, identified by Guatemalan statute, as **medium** or **large** may apply for exoneration from import duties for production factor items upon argument that the national industry served is directed to import substitution or is otherwise operating to national economic advantage.

The import regulations for **small** industries, however, do not permit a similar solicitation for exoneration from duties.

Wage Rates

Wage rates in Guatemala are established and low and would indicate labor intensive productivity factor value.

Several factors, however, lead to a distortion of this value for considerations of productivity employment.

1. Working capital credits for labor use financing are significantly less available than captial credits for acquisition of fixed assets.
2. The national labor laws directed to the fair employment of (factory) labor tends to persuade industrialists to consider less responsive machine alternatives for production support.

Guatemala has, in fact, no industrial development legislation that provides incentive for the development of either capital or labor intensive rurally sited industry.

It is reported that such legislation is under current development within the Congress. It is not known whether the possible resulting legislation will favor light capital and labor intensive productivity.

There are several Guatemalan Public Policy inhibitions indicated for effective promotion of labor intensive rural industry:

1. Liberal foreign credits availability for capital intensive technology transfer.
2. Absence of rural development industrial investment incentives for labor intensive (light capital) productivity.
3. Exoneration of import duties opportunity for **medium** and **large** industry.

The several Guatemalan public policy inhibitions indicated for effective promotion of labor intensive rural development support a demonstration program need to provide the data that will

lead to better policy support for this development.

Identified by resource availabilities, local consumer needs as well as national and international markets potentials, low cost workplace rural industries are directed to return significant economic and social benefits to rural populations.

The current project seeks to demonstrate these possibilities and, in part, to support continuing positive rural development considerations by the GOG.

Corollary Investments in Rural Infrastructure Considered with Use of Light Capital Technology

Support to effective increase in incomes for rural low cost workplace associated labor may identify the need to subsidize and provide (by example) marketing support or technical assistance structures that would normally be factored by industry as operational costs.

Cost benefits considerations direct a review of corollary investments in such factors as marketing, transportation, technical assistance or training.

If the investments are catalytic and implementary and, upon withdrawal, provide for reasonable continuity of viable rural enterprise, cost benefit considerations may be positive.

It is not the methodology or purpose of rural light capital productivity to require continuing and significant corollary investments to insure viabilities. Corollary investments by Governments in the form of marketing, training T.A. support and etc. may however, be continued after cost benefit considerations and particularly with additive social benefits considerations.

D. **Program — Appropriate Technology**

Brief Description
- Purpose
- Goals
- Inputs
- Organization (Chart)
- A.T. Project Description
- Description of Program Operations
- Rural Small Scale Enterprise — Loan Department

Rural Productivity Office

Task I —
- A.T. Grants Management
- Grants Review Board
- A.T. Data Bank — Grant
- A.T. Newsletter — Grant
- A.T. Handbook — Grant
- A.T. R & B Project Grants
- A.T. Conference Grants
- A.T. Travel Grants

Task II — T.A. Consultants Support

Task III — Credits Promotion

Task IV — Institutional Linkages

Task V — T.A. Extension

Brief Description

The Appropriate Technology Program is proposed as a component program activity of the Rural Enterprise Loan (Program). The Appropriate Technology Program is further proposed to complement and coordinate with the Artisanry Development Program as the two technical assistance elements as well as small scale credits use promotion elements of the Rural Enterprise Loan (Program).

The Appropriate Technology Program is proposed to be located within the CORFINA organization. The A.T. program is to be managed within a proposed Rural Productivity office. The Productivity Office will be directly supervised by the Rural Small Scale Enterprise Loan Department (CORFINA). The Rural Small Scale Enterprise Department will also coordinate the program related activities of the Artisanry Development Program (GUATEXPRO).

The Appropriate Technology Program is proposed to consist of two sub-programs, i.e. (I) Appropriate Technology Grants Program and (II) Small Scale Enterprise T.A. and Credits Support Program. The (I) A.T. Grants Program is directed to the partial-funding project support for program eligible categories of appropriate technology. Program Grantees may be Guatemalan or Guatemalan based institutions or individuals indicated to have the capacity to provide useful A.T. related response to identified rural development constraints. There are seven categories of program grants.

The Small Scale Enterprise Technical Assistance Program is directed to the support of beneficiaries of program credits as well as program related project activities for appropriate technology. As coordinated by the Loan Program Director (Rural Small Scale Enterprise Loan Department) the services of the Small Scale Technical Assistance Program may be made available to the Artisan Development Program.

The Small Scale Enterprise T.A. and credits program is further directed to the identification of credits requirements and support for credits applications.

Purpose

The Appropriate Technology Program (Rural Productivity Office) proposes to effectively support the GOG by directing public and private source technical assistance inputs to the effective increase of living standards for Guatemala's rural poor. The program further seeks to upgrade rural small scale productivity and area self-sufficiency for consumer needs.

Goals

The Appropriate Technology Program seeks to:

Implement and support the funding of seven categories of appropriate technology grants to permit a measurable increase in effective development as well as rural area use of appropriate technologies.

Enable the utilization of (program) available small scale credits by rural poor entrepreneurs.

Implement, for continued use at program termination, an effective technical assistance extension program to serve rural and small scale enterprise credits beneficiaries.

Promote a multi-institutional as well as professional participation in the exercise of appropriate technology development and applications.

Support the identification of rural area industrial estate potentials for support of small enterprise productivity.

INPUTS

Total Program $968,000

USAID;

Technical Assistance — Personnel — Total Cost 480

1) Senior Program Advisor
The Senior Program Advisor will support the management of the total Rural Enterprise Loan Program, i.e. Office of Artisanry Enterprises (GUATEXPRO) and the Rural Productivity Office (CORFINA)
42 p/m — 210

2) Technical Assistance Extension Coordinator
The T.A. Ext. Coordinator will manage and develop for GOG management the Small

Scale Enterprise Technical Assistance and Credits Support (Sub-Program). The T.A. Ext. Coordinator will be an industrial engineer or with equivalent experience.
36 p / m — 180

3) Technical Assistance Contract Support
Managed by the Rural Productivity Office, this T.A. element provides specific short-term technology support services, i.e. engineers, agro-specialists, process specialists.
18 p / m & s — 90

Technical Assistance Support — Total:

1)	All terrain vehicle (3) Cargo body —	15
2)	Equipment and supplies — Misc.	2
3)	Travel Expenses	18
4)	Vehicle Maintenance	6
	ST	41

Appropriate Technology Grants (Sub-Program)

Total: 447

	Grants Categories	Grant Years: 1	2	3	4
1)	A.T. Data Bank	10	5	5	5
2)	A.T. Newsletter	4	4	4	4
3)	A.T. Handbook	10		10	
4)	A.T. R&D Projects	30	80	80	80
5)	Professional Support Grants	15	15	15	15
6)	A.T. Conference Grants	4	4	4	4
7)	International Travel Grants	10	10	5	5
	ST	83	118	128	18

GOG TOTAL PROGRAM 499

Personnel	Total 394
Program Director at 1400 x 48 p / m	67
RPO Manager at 1100 x 48 p / m	53
RPO Grants Coordinator at 1000 x 48 p / m	48
RPO Credits Promotor at 9 x 48 p / m	43
RPO Credits Assistant at 5 x 48 p / m	21
RPO Secretary at 2.5	12
RPO Typist / Clerk (1) 2 x 48 p / m	10
RPO Typist / Clerk (2) 2 x 48 p / m	10
ST	264

T.A. Extension Engineer 48 mos.		48
T.A. Extension Agent 1 48		34
T.A. Extension Agent 5 48		24
T.A. Extension Agent 5 48		24
	ST	13
Personnel Support		
Local Travel and Per Diem		45
	ST	45
Support Facilities		
Office, Office Equipment		
Materials Support		
Telephone / Cables, Vehicle Operation		50
Vehicles (Small Cargo) (2)		10
	ST	60

PROJECT INPUTS SUMMARY SCHEDULE

USAID: 968,000	1	2	3	4	T
T.A. personnel					
Sr. Prog. Adv. (LT)	60	60	60	30	210
T.A. Ext. Coord. (LT)	30	60	60	30	180
T.A. Contractors (ST) (18 p / m)	10	30	30	20	90
				ST	480
T.A. support					
All Terrain vehicles (3)	15				15
Equip. & Supplies	1	1			2
Travel Expense	3	5	5	2	18
Vehicle Maintenance		2	2	2	6
				ST	47
A.T. Grant Fund contribution	100	145	155	135	535
				ST	535

GOG: 499,000	
Personnel	
Program Director	67
RPO Manager	53
RPO Grants Coordinator	48
RPO Credits Officer	43
RPO Secretary	12
RPO Credit Assistant	21
RPO Typist 1	10
RPO Typist 2	10
ST	264

GOG:

	1	2	3	4	T
T.A. Ext. Eng.					48
T.A. Ext. Agent 1					34
T.A. Ext. Agent 2					24
T.A. Ext. Agent 3					24
				ST	130
Personnel Support Local Travel & Per Diem	6	6	7	6	45
				ST	45
Support Facilities	20	20	20	20	60

Appropriate Technology Program — Project Description

General Criteria for Selection of Project Sub-Programs and Tasks

The constraints to the development of better living standards for the Highlands resident rural poor of Guatemala are identified with nutritional insufficiency, shelter inadequacy, sanitary services under-development, health services shortage, educational services inadequacy, roads and potable water absences or inadequacy, domestic energy (wood); resource shortage, incomes opportunity inadequacy, development credits (small scale) access difficulties, and agro-systems inefficiencies or under-development.

These constraints have been identified as increasing in significance with the continuing population growth of the (target) area. With insufficient economic integration into the national economy, the rural poor of Guatemala require the introduction of change factors that permit effective opportunities to measurably improve their living standards.

In recent years and decades, USAID development attention has been directed to often effective support of Guatemalan rural agro and agro-industrial development as well as to development of health, educational and rural infrastructural construction.

Notwithstanding demonstrable rural development progress, the continuing growth of population, the growing concentration of income generation opportunity in urban areas and the cultural reserve of the population has continued observable conditions of poverty in the Highlands.

The continuing USAID / G rural development support programs seek to support GOG efforts to find and implement effective and alternate program mechanisms to respond to the needs of the rural poor.

The development and implementation of area useful appropriate technologies is considered, within this program, as an alternate and additional rural development program response to highlands development needs.

The program is structured to provide wide ranging support to the area introduction and use of appropriate technologies. The program is intended to deal with development constraints essentially through the development of greater family and community self-sufficiency by area-sited interventions.

With recognition of resource and cultural realities as well as the realistic economic response capacity of national Guatemala to the life conditions of the highlands this appropriate technology program attempts to help the highlander to more effectively be his own change agent. The Ap-

propriate Technology Program considers the employment of varied input institutions and professions to develop and implement within highlander environments and with highlander cooperative and joint support improved or new (to the area) techniques to respond to development constraints. It actively seeks the highlanders direction and participation to help himself.

It is anticipated that some of the program and grants related development activities will prove more successful than others. It is further anticipated that data derived from successful methodologies and experiences will be invaluable to the ongoing program.

Much of the Program efforts are directed to the immediate constraints upon the improvement of quality-of-life for the rural poor. It is anticipated that many of the appropriate technology projects will address themselves to the apparent matters of nutritional and shelter upgrading as well as to potable water development or improved sanitation.

Income generation and promotion of area serving rural productivity, however, is further considered within the program structure. Program efforts are directed to the increase of area agro-industrial productivity and to the increase of earnings opportunity as well as greater access to basic consumer needs.

The program addresses the need to supply small scale credits and related technical assistance within fragile entrepreneurial environments that are collateral poor or lack specific enterprise knowledge.

The program seeks to identify resource availabilities for local manufacture and to support through forward and backward linkages wider income opportunity for small scale producers of resource material, processors of resource materials and market chain functionaries.

The program seeks to be both research-and-results oriented and with particular direction to the development of applied techniques that, with support of the highlands people, serve to positively change the target area living condition.

Appropriate Technology — Description of Program Operations

The Rural Enterprise Loan (Program) is proposed to be administered by CORFINA and within a **Rural Small Scale Enterprise Loan Department.**

It is proposed that this Department be headed by a CORFINA appointed Program Director. The appointment of a USAID Senior Program Advisor to the Program Director is recommended.

The functions of the Rural Small Scale Enterprise Loan Dept. are (1) the administration of the total loan program (project), (2) the immediate supervision of the Rural Productivity Office and (3) the program coordination of the activities of the Artisan Enterprise Program (GUATEX-PRO).

Rural Productivity Office

It is proposed that a Rural Productivity Office be established as a sub-section of the Rural Small Scale Enterprises Loan Department. It is recommended that the Rural Productivity Office be headed by a CORFINA appointed RPO Manager. The (1) RPO Manager is to be supported in the execution of the RPO functions by an (2) RPO Grants Coordinator, (3) RPO Credits Officer, (4) RPO Secretary and (5) RPO typist.

There are five task-functions proposed for execution by the Rural Productivity Office:

Task 1 — Appropriate Technology Grants Management
Task 2 — Small Enterprise Technical Assistance Extension (Services)
Task 3 — Small Enterprise Credits Promotion and Support
Task 4 — Technical Assistance Contract Consultants Program Support (ST)
Task 5 — Appropriate Technology Program Related Institutional Linkages

Task I — Appropriate Technology Grants Mangement and A.T. Grants Review Board

This task supports the identification of site specific rural development constraints as well as specific proposals for research and applications of technologies to address specific development constraints.

The execution of this task is identified with the program provision of partial funding grants to eligible institutions and individuals.

The program envisions seven grant categories having varying eligibility and funding regulations.

All of the grant categories are generally directed to rural poor project participation, to effective and actual rural development interventions and to both "quality of life" as well as "rural productivity" project purposes.

This task proposes support to appropriate technology development interventions by Guatemalan as well as by Guatemalan based international institutions.

The A.T. Grant Program task supports the optimum intervention of varied professional disciplines as well as research methodologies for on site adaptation.

This task encourages inter-institutional grant supported efforts as well as close grant project participation by the nominated project beneficiaries.

This task is proposed to be executed with the support of a **Grants Review Board.**

The seven appropriate technology categories indicated for partial funding grant support are:

A.T. Data Bank — Development Grant
A.T. Quarterly Newsletter
A.T. Handbook (bi-annual)
A.T. R & D Project Grants
A.T. Professional Service Support Grants
A.T. Int. Travel Grants
A.T. National Conf. Support

Appropriate Technology Grants Review Board

Task I requires the program identification and publication of rural development constraint matters that may be addressed by responsive project proposals for partial-funding grant support.

Grant proposal applications are to specifically respond to one of the seven program grants categories.

Eligibility of respondees are to be precisely determined at program implementation but will generally include performance capacity considered participation by:

Public service institutions — national, regional
Private voluntary organizations — national, international
Private (non-profit) development organizations — national, international
Academic departments; professionals — national, international

The Rural Productivity Office will administer the development of grant proposals and will submit with recommendations to the Project Manager grant proposal applications.

The Project Manager will periodically call to session an Appropriate Technology Grants Review Board for consideration and possible approval of eligible grant applications.

It is proposed that the A.T. Grants Review Board be composed of:

The Project Manager — Chairman
The USAID Project Advisor
The Director of CORFINA (or nominee)
The Director of GUATEXPRO (or nominee)
The USAID Mission Director (or nominee)
The USAID Rural Development Officer (or nominee)

Grants approval recommendations by the Board are non-binding and are directed to the support of a grants approval decision by the Project Manager and with concurrence by USAID / Guatemala.

The Grant Review Board will consider the priority value of the constraints addressed by the proposal, the capacity of the proposed awardee to effectively complete the grant project, the evaluation methodology proposed, the propriety of funding amounts for project performance, the level of project contribution by project beneficiaries, i.e. participation by the benefited and rural poor.

APPROPRIATE TECHNOLOGY PROJECT GRANT CATEGORIES

Appropriate Technology Data Bank — Development Grant

A development grant, to be disbursed over a four-year period, is directed to support of a public institutional development of an area useful collection of as well as structured access to appropriate technology data. The grant is directed to the support of materials purchases.

The Appropriate Technology Data Bank will house for general public access a collection of area relevant books, serials, photos, films and micro-films, offprints, brochures.

The A.T. Data Bank will have, as possible, structured access to other Guatemalan institutionally held material related to rural and appropriate technology development.

The A.T. D.B. will have structured access to international data banks having significant (citation) computer network access (U.N.).

The A.T. D.B. will have structured relationships including data access and exchange with selected international institutions concerned with appropriate technology development and promotion.

The A.T. D.B. will provide professional librarian management and services including borrower services and data retrieval assistance (for inventoried material).

The purpose of the A.T. D.B. relates to the need for a Guatemalan on hand, updated and well managed appropriate technology data collection. The development and conduct of Guatemalan institutional and rural appriate technology projects is well supported by immediate access to current state-of-the-art data.

Apart from substantive appropriate technology project development support, the Appropriate Technology Data Bank serves to support area rural development research.

It is proposed that the A.T. D.B. grant be considered for award over a four-year disbursement period. The awardee should demonstrate current and on-going capacity to provide library plant and professional capacities and to have established and program useful international data linkages.

It is proposed that the A.T. D.B. grant be in the amount of $25,000 for materials purchases use.

Appropriate Technology Newsletter

It is proposed to support, with program grant funds, the quarterly publication of a Guatemalan and highlands oriented — Appropriate Technology Newsletter.

It is proposed that the awardee for the App. Tech. Data Bank be further awarded the grant for support to Newsletter preparation.

The Newsletter has several purposes:

The gathering and dissemination of news on on-going Appropriate Technology activities.

The dissemination and promotion of A.T. Data Bank availabilities, acquisitions and service data.

The dissemination of information on conferences, seminars, funding matters, personal notes.

The enabling of editorials, articles and letters.

To promote a continuing interest as well as response of the Guatemalan professional community in appropriate technology support activities.

It is proposed that support for the preparation and free distribution of the A.T. Newsletter be supported by a grant sum of $20,000 to be disbursed over a four-year period.

Guatemalan Appropriate Technology Handbook

The continuing development of appropriate technology processes in Guatemala is proposed to be published in a bi-annual "Handbook". Site related to the specific rural development constraints of the Highlands, the Handbook is additionally intended to demonstrate a series of techniques that may be considered for application within the area.

The Handbook will describe devices and processes, costs of acquisition, replacement and maintenance, related data and materials sources, case histories of applications, benefits and disadvantages associated with devices or processes.

It is proposed that the awardee for the publication of the Handbook be the same as the awardee for the Newsletter publication as well as the A.T. Data Bank project.

It is proposed that the Handbook be simply and clearly written to serve as general a readership as possible.

It is proposed that the Guatemalan A.T. Handbook be support funded in a total amount of $20,000 to be disbursed in Year 2 and year 4 of the Program ($10,000 grant amounts).

Research and Development Project Grants

A.T. R & D Project partial-funding grants are proposed for a mix of workshop / laboratory and site adaptation projects.

The publishing of program available grant funds is directed to the respondees consideration of the following specific rural development responses:

Nutritional Access
— non-traditional crops introduction (small scale)
— non-traditional crops mixes
— local resource — food processing
— apiculture dissemination and support
— trench silage systems
— fish ponds
— birds and rabbits

Potable Water
— minimal scale construction
— hydraulic rams
— holding tanks — low cost construction
— domestic / village connection systems
— handpumps — use and construction
— sand filters
— solar stills

Alternate Energy
— solar energy uses
— wind energy uses
— methane generation uses
— wood stove construction
— bicycle power
— animal power
— water power

Tools and Farm or Production Equipment
— Handtools
— Farm devices — simple construction
— Production devices — simple construction

Housing and Shelter Construction Materials
— plastic / fibre — roofing material
— organic material — roof treatment
— uses of pumice
— sanitation systems

Food Storage and Processing
— seed storage systems
— food storage systems
— animal feed storage
— food processing — small scale commercial

Access Roads
— hand construction

Sanitation and Public Health
— waste disposal
— water filters (sand)
— compost manufacture
— barefoot medicine
— nutritional additives

Transportation and Transport
— simple vehicle construction

Income Generation
— Artesania
— Manufacture — simple devices — local market
— Labor Intensive — process employment
— Commercial food processing — small scale

R & D First Year Project Priorities

Specific R & D projects are early anticipated for:
Light Weight Roofing Materials Identification & Application
Potable Water — Improvements
Solar Heated — Showers
Farm Tools Manufacture
Small Scale Irrigation — Systems and Devices
Savonius Roters for Irrigation Support
Solar Dryers — Simple Construction
Cement Substitution Research
Trench Silage Research

R & D Project Grant Use Criteria
General Criteria
1) Personal services costs are not contemplated as a project support budget line item.
2) Project Grants are directed to the support of materials purchase, transportation and transport, technical data access, communication (s) expenses.
3) Grantees will submit (for grant consideration) applications defining:
   a) Development Constraint — description and significance

b) Project Area — location, Representative Characteristics
c) Proposed line of research and results implementation plan (R & D operations plan)
d) Results anticipated and follow-up program
e) Time frame for Project Execution 1/
f) Evaluation Methodology Proposed
g) Project Budget and Grant Amount Requested

R & D Project Grants are proposed to be funded at $447* over a four-year period.

Professional Support Grants — R & D Grant Project (Additional Support)

Established program R & D projects may benefit from the part time voluntary contribution of engineers, agronomists, architects, life scientists and / or other professional persons able to make inputs to an approved A.T. project. The Professional Support Grants are directed to local cost travel expenses and per diem reimbursement. The Prof. Support Grants may not exceed 10% of the approved total R & D project budget. Application for these corollary grants are anticipated with R & D Project Grant applications.

Appropriate Technology Conference Grants

It is proposed that limited grant funds be available to partially fund (non-personal services expenses) nationally sited conferences, seminars and exhibitions related to appropriate technology data dissemination and promotion.

A.T. International Travel Grants

These grants are directed to training, research and conference requirements.

The travel grants are recommended to be available to senior program staff (GOG) and with priority attention to training activity.

Rural Productivity Office

Technical Assistance — Consultant Support

It is proposed that contract technical assistance be available to the several activities of the Rural Productivity Office. Contract technical assistance support is proposed to be available to both the — Appropriate Technology Grant Program and to the Small Scale Enterprise Technical Assistance Program.

It is proposed that 18 person-months of consultancy service be made available to the RPO operations.

Rural Productivity Office — Credits Promotion

Within the activities of both the A.T. Grants Program and the Small Scale Enterprise Technical Assistance Program, it is anticipated that there will be program beneficiary requirements for both working and fixed capital financing.

The promotion of small enterprises, i.e. tool making, alternate energy devices, food processing, intermediate chemical technologies will require the attention of a GOG program credit promotor. The Program Credit Promotor will respond to requests for prefeasibility studies for program related enterprise development as well as for credit application support.

The credits required by program beneficiaries will be solicited from the credit funds established within CORFINA.

Rural Productivity Office — Institutional Linkages

The Rural Productivity Office will maintain coordinating linkages with Guatemalan public and private institutions as well as with public and private institutions based in Guatemalan and having interests in rural development.

These institutions will include:

1/ One year or less — preferred
*000

Central American Regional Development Organizations
(ICAITI — INCAP, etc.)
National Development Organizations
(ICTA-INTECAP, etc.)
National Private Development Organizations
(CEMAT, CHOQUI, etc.)
National & International Voluntary Organizations
(CARE, CR, World Vision, I.T.OG, OXFAM,
Tool, Peace Corps, etc.)
International Development Donor and Executive Agencies
(UNDP, IAF, IDB, OAS, FAO, ILO, etc.)

By means of conferences, correspondence, data linkages, newsletter, handbook and project related interactions, the Rural Productivity Office will maintain useful relationships with appropriate organizations.

The relationships are directed to a continuing effort to realize useful qualitative and quantitative A.T. project performances.

The RPO will actively encourage useful institutional donor support A.T. related rural development in Guatemala.

Particularly, the RPO will consider the A.T. related support capacities of the Peace Corps as well as the USAID Basic Education Program.

Rural Productivity Office

Small Scale Enterprise T.A. Program

This program proposes to provide particular and, as necessary, on-going technical assistance to program (credits and appropriate technology) beneficiaries.

The technical assistance support is directed to rural and target area entrepreneurs and cooperatives.

The Small Scale Enterprise T.A. Program proposes the deployment of several technical assistance generalists within the program target area.

It is proposed that the operations mangement and training functions of the Small Scale Enterprise T.A. Program be conducted by a USAID contractor. The contractor as T.A. Extension Coordinator will train and coordinate a counterpart T.A. Extension Engineer (GOG). The Small Scale Ent. T.A. program will include the services of three T.A. Extension Agents (GOG).

The T.A. Extension Agents are proposed to be graduate engineers (industrial, civil). Recruitment of the T.A. Extension Agents may include university related graduate assistanceships and fixed term contracts. The T.A. Coordinator will have generalist engineering skills as well as experience in industrial extension service to small scale industry.

The Small Scale Enterprise T.A. Program will have access to program supplied short-term technical assistance contractors.

The SSE TA Program will routinely respond to technical deficiency matters associated with the enterprise activities of program credits beneficiaries or credits applicants.

Technical responses will include consideration of production systems and processes, tool and machine use and maintenance, plant layout and maintenance, quality control systems, inventories storage and control, purchasing, marketing options and systems, plant siting, energy use specifications and options, packaging and packing, transport, and production costing.

The SSET T.A. programs are proposed to support both existing program credit beneficiaries as well as the appropriate technology project efforts.

The priority activity of the Small Scale Enterprise T.A. Program is directed to the T.A. support of credits beneficiaries.

ANNEX A. RURAL ENTERPRISES SURVEY

As a part of the development of this project a field survey was undertaken to estimate the demand for credit and to provide a profile of potential enterprises. The survey was designed by Samuel R. Daines and undertaken by the USAID Guatemala, Ministry of Agriculture (Gary Smith and Licda. Irma Luz Toledo de Ibarra), and interviewers from BANDESA.

SAMPLE

The area to be sampled included the western highlands where most of the rural poverty is concentrated in Guatemala. The area included may be seen on Map A. Collateral data was later added for rural enterprises in the Southeast Highlands area from non-survey sources. The sample was based on the area frame under development by the Ministry of Agriculture, a summary can be seen in Table A-1.

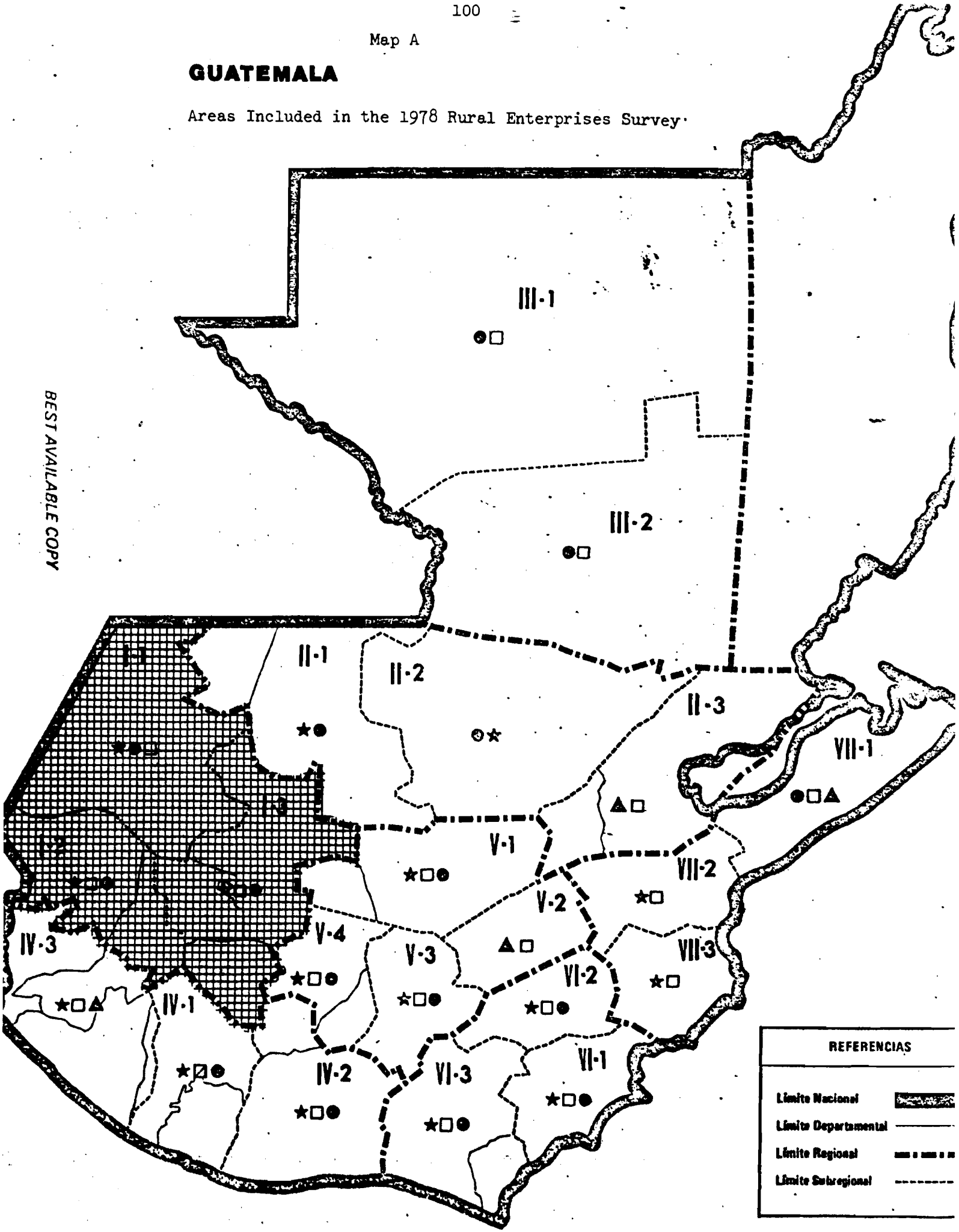
Table A-1
Summary of Sample and Survey

1.	Total Segments in Region (Rural and Urban)	611
	Total Segments Visited	85
	Percent of Total	14
2.	Total Number of Visits	2,728
	Average Visits Per Segment	32.09
3.	Total Number of Enterprises Interviewed	505
	Average Enterprises per Segment	5.94
4.	Total Number of Economic Activities	558
	Average Activities per Segment	6.56
5.	Number of Enterprises as % of Visits	19
	Number of Activities as % of Visits	20
	Number of "Not at Homes" as % of Visits	16
	Number of Non-Business as % of Visits	50
	Refusals as a % of Visits	2
	Non Resident Owners as % of Visits	4
	Absentee Owners as % of Visits	5
	Miscellaneous Non-Responses	2
6.	Total Interviewing Personnel	10
	Supervisors	2
7.	Total Days in Field	15.5
	Average Segments per Day	5.5
8.	Approximate Average Time per Interview	25 min.

Map A

GUATEMALA

Areas Included in the 1978 Rural Enterprises Survey



The survey was intended to estimate the profitability of small scale enterprises and to explore the potential impacts of the proposed project. It also explored the economic and employment characteristics of the target group. The questionaire was applied to 561 businesses in total, the instrument itself is reproduced below.

ENCUESTA DE EMPRESAS RURALES: GUATEMALA 1978

Dep't to: (001)	Muni.: (002)	Lugar: (003)	No. de Segmento (004)	No. de Boleta (005)	No. de Entrevista (006)	No. del Entrevistador (007)
CODIGO:						

1. ¿Vive en este hogar alguien que operó por su propia cuenta y riesgo una empresa, industria o negocio en 1977? . . . . . Si 1 No 2 (008)

2. ¿Cuántas personas residen en este hogar la mayor parte del año? Menos de 7 . . . . (009)
   Siete o mas. . . . (010)

3. ¿Cuántas empresa(s), negocio(s) o industria(s) operáron en este hogar en 1977? . . . . . (011)

4. a) ¿Que clase de empresa(s), negocio(s) o industria(s) es (son)? :

1.	Extracción y elaboración de madera y sus sub-productos.	01
2.	Hilado, tejido y acabado de textiles y sus sub-productos.	02
3.	Procesamiento de maguey y fabricación de sus sub-productos.	03
4.	Preparación y teñido de pieles, cueros y sus sub-productos.	01
5.	Industrias básicas de procesos metálicos y la fabricación de artículos de ferretería	05
6.	Extracción y fabricación de productos minerales no metalicos (barro, arena, cal, cemento, etc.) para uso en la construcción	06
7.	Fabricación de objetos de barro, loza, porcelana, vidrio y productos de vidrio	07
8.	Industrias manufactureras diversas no especificadas previamente	08
9.	Destace de toda clase de animales agropecuarios (ganado, aves, conejos, coches, etc.) y la preparación y conservación de la carne obtenida.	09
10.	Fabricación, preparación de productos lácteo alimenticios	10
11.	Elaboración, envase y conservación de frutas y legumbres	11
12.	Elaboración de granos básicos y fabricación de productos de molino.	12
13.	Fabricación de productos de panadería	13
14.	Elaboración de productos alimenticios diversos.	14
15.	Elaboración de alimentos concentrados para animales	15
16.	Comercio al por mayor y por menor que involucre la reventa (sin transformación) de productos diversos (pulperías, tiendecitas, almacenes, farmacias etc.) . . .	16
17.	Comercios diversos no especificados previamente	17
18.	Servicios prestados al público y a empresas	18
19.	Servicios personales que incluyen atención personal como restaurantes, comedores, cafeterías, hoteles, pensiones, etc.	19
20.	Servicios diversos no especificados previamente	20

b) El codigo de la empresa para cuya respuesta se presenta a continuación es . . . (012)

c) ¿Cuándo empezó a operar ésta empresa? ____ (mes) ____ (año) . . . . . (013)

5. a) ¿Contrató a personal en esta empresa durante el año 1977?. . . . . Sí ____ No ____

b) ¿Utilizó personal no pagado en esta empresa durante el año 1977? . . . . . Sí ____ No ____

c) Indique el número por tipo y por mes . . . . . .

		Pagados	No Pagados
Ene	01	(014)	(015)
Feb	02	(016)	(017)
Mar	03	(018)	(019)
Abr	01	(020)	(021)
May	05	(022)	(023)
Jun	06	(024)	(025)
Jul	07	(026)	(027)
Ago	08	(028)	(029)
Sep	09	(030)	(031)
Oct	10	(032)	(033)
Nov	11	(034)	(035)
Dec	12	(036)	(037)

d) De esas personas trabajando en ésta empresa en el año 1977, indique el número de . . . . . .

Hombres	(038)
Mujeres	(039)

6. a) ¿De las personas no pagadas que trabajaron en ésta empresa por tiempo parcial durante los meses en que se operó en 1977, cuántos son . .

Hombres mayores de 15 años o más?	(040)
Hombres menores de 15 años?	(041)
Mujeres mayores de 15 años o más?	(042)
Mujeres menores de 15 años?	(043)

b) ¿De las personas no pagadas que trabajaron en esta empresa por tiempo completo durante los meses en que se operó en 1977, cuantos son. . . . . .

Hombres mayores de 15 años o más?	(044)
Hombres menores de 15 años?	(045)
Mujeres mayores de 15 años o más?	(046)
Mujeres menores de 15 años?	(047)

7. ¿Cuál es el valor del equipo, maquinaria, herramientas, instalaciones, y edificios utilizados en la operaciones de esta empresa:

a) cuando lo compró inicialmente?	Q .--	(048)
b) si lo tuviera que adquirir hoy?.	Q .--	(049)

8. a) ¿Utilizó esta empresa algun tipo de energía en el año 1977? . . . . . Sí 1 No 2 (050)

b) Indique el tipo . . . . . 1) Fuerza animal. . . . . Sí 1 No 2 (051)
2) Motores de combustion. . . . . Sí 1 No 2 (052)
3) Motores electricos . . . . . Sí 1 No 2 (053)
4) Ruedas hidráulicas . . . . . Sí 1 No 2 (054)
5) Elemento humano. . . . . Sí 1 No 2 (055)
6) Otro . . . . . Sí 1 No 2 (056)

9. ¿Cual fue el valor total de ventas brutas de esta empresa en 1977?. . . . . Q .-- (057)

10. ¿Cuánto gastó esta empresa durante 1977 para: 1) Materia prima. . . . . Q .-- (058)
2) Equipo adicional . . . . Q .-- (059)
3) Personal remunerado. . . Q .-- (060)
4) Arrendamiento. . . . . Q .-- (061)
5) Otros gastos . . . . . Q .-- (062)
6) Total . . . . . Q .-- (063)

11. ¿Cuales son las razones mas importantes por que no produce mas en esta empresa?. . . . . Prioridad

1) Falta de credito	1	2	3	4		(064)
2) Escasez de materia prima	1	2	3	4		(065)
3) Falta de mano de obra calificada . . .	1	2	3	4		(066)
4) Falta de acceso al mercado	1	2	3	4		(067)
5) Otras razones: (a) _____ . . .	1	2	3	4		(068)
(b) _____ . . .	1	2	3	4		(069)

12. a) ¿Recibío algun crédito de cualquier banco, empresa, o institución para su negocio en los últimos 5 años?. . . . . Sí: 1 No: 2 (070)

b) ¿Que fue el promedio de los interéses y plazos de los creditos que usted recibio?: . . . . . 1) Interés por año . . . . . % (071)
2) Plazos (en meses) . . . . . (072)

13. a) ¿Recibio usted un préstamo en efectivo o especie durante 1977? . . . . . Sí: 1 No: 2 (073)

b) Indique el valor total recibido en el año 1977 de las siguientes fuentes:

	%	Plazos		
1) Cooperativas: (a) _____ . .	____	____	Q .--	(074)
(b) _____ . .	____	____	Q .--	(075)
2) Bancos	____	____	Q .--	(076)
3) Otras Instituciones.	____	____	Q .--	(077)
4) Compradores del producto	____	____	Q .--	(078)
5) Vendedores de insumos, equipos, materiales .	____	____	Q .--	(079)
6) Prestamistas	____	____	Q .--	(080)
7) Amigos y/o parientes	____	____	Q .--	(081)
8) Anticipios de contratistas	____	____	Q .--	(082)
9) Otras fuentes.	____	____	Q .--	(083)
TOTAL.	____	____		

c) Supervisor: Calcula el promedio de: 1) Interés por año. . . . . % (084)
2) Plazos (en meses). . . . . (085)

14. ¿Desea usted obtener mas dinero prestado a interés y plazos actuales para esta empresa en el año 1978, o en años futuros?. . . . . Sí: 1 No: 2 (086)

15. ¿Para que utilizaría el crédito adicional en el año 1978? (Indique el monto, o solo una X):

		Sí	
1) Adquirir materia prima adicional. . . .	Q .--		(087)
2) Ampliar las clases de productos	Q .--		(088)
3) Comprar equipo adicional.	Q .--		(089)
4) Arreglar equipo o instalaciones	Q .--		(090)
5) Construir o arrendar espacio adicional. .	Q .--		(091)
6) Contratar más personal.	Q .--		(092)
7) Consolidación de deudas	Q .--		(093)
8) Otros usos: (a) _____ . . .	Q .--		(094)
(b) _____ . . .	Q .--		(095)
TOTAL .	Q .--		(096)

16. a) ¿Si pudiera usted obtener la cantidad de crédito que indicó anteriormente, tendría usted que emplear personas adicionales?. . . . . Sí: 1 No: 2 (097)

b) Indique cuántas personas adicionales emplearías . . . . . (098)

17. a) ¿De los ingresos obtenidos por esta empresa el año pasado (1977) logró usted ahorrar algo? . . . . . Sí [1] No [2] (099)

b) ¿Que cantidad pudo usted ahorrar? . . . . . Q .-- (100)

c) ¿Para que va a utilizar sus ahorros el año entrante (1978)? (Indique el monto, o solo ponga una X).:

			Sí	
1)	Adquirir materia prima adicional.	Q .--		(101)
2)	Ampliar las clases de productos	Q .--		(102)
3)	Comprar equipos adicionales	Q .--		(103)
4)	Arreglar equipo o instalaciones	Q .--		(104)
5)	Construir o arrendar espacio adicional. .	Q .--		(105)
6)	Contratar mas personal	Q .--		(106)
7)	Continuar ahorrando	Q .--		(107)
8)	Otros usos: (a) _____	Q .--		(108)
	(b) _____	Q .--		(109)
9)	Tiene ahorros pero está indeciso			(110)

18. Observaciones: _____

The survey was based on an area frame design in which the total area in the region defined as the target area was divided into areas of approximately equal physical size. Small villages and towns were divided into segments with physical area and larger cities were likewise segmented on ariel photographs. These two segments (known as VI-1 and VI-2 in the sample) totalled 611 separate areas. Out of these 611, 85 were selected at random for inclusion into the survey, and in these 85 surveyed segments 2,728 households were visited. Every third household in each segment was visited. The average length of an interview was 25 minutes.

A detailed statistical outline of the survey for each segment is given in Table A-2 below.

Table A-2

DATA BY SEGMENT

UNIT NAME	Segment Number	No. of Visits	No. of Intvws.	No one at home	Non-business.	Refusal	Owner not Resident	Owner Absent	Total of segs. by unit	Area of unit ($km.^2$)	Aver. Area of Segment ($km.^2$)	Segment type (all VI_2 unless Indicated VI_1)
AGUACATAN	148	28	5	12	10	-	1	1	4	0.42	0.105	VI_2
ALMOLONGA	452	27	0	1	25	1	-	-	5	0.50	0.100	"
ALOTENANGO	532	33	5	5	16	-	-	4	12	1.18	0.098	"
ANTIGUA GUATEMALA	628	45	6	12	23	1	1	2				
" "	636	68	14	9	31	3	7	3	16	1.60	0.100	"
		113	20	21	54	4	8	5				
BARILLAS	068	NOT VISITED - TOO REMOTE FOR TIME AVAILABLE							-	-	-	-
CHAJUL	276	36	5	-	29	1	-	-	9	0.88	0.098	"
QUICHE	244	15	3	1	10	-	-	-	3	0.38	0.127	"
CHICHICASTENANGO	492	30	11	-	13	1	1	4	5	0.46	0.092	"
CHIMALTENANGO	540,548	85	9	10	55	3	2	3	16	1.62	0.101	"
CHINIQUE	220	6	1	1	4	-	1	-	5	0.43	0.086	"
CIUDAD VIEJA	668	37	9	8	11	1	-	4	11	1.08	0.098	"
COMALAPA	036	46	13	8	25	-	-	-	10	1.02	0.102	"
CONCEPCION	500	NOT VISITED - REMOTE			-	-	-	-	-	-	-	
CONCEPCION CHIQUIRICHAPA	340	44	6	5	28	1	2	2	5	0.50	0.100	"
EL QUETZAL	060	NOT VISITED - REMOTE			-	-	-	-	-	-	-	-
EL TEJAR	556	10	2	1	3	-	2	2	6	0.60	0.100	"
ESQUIPULAS PALO GORDO	444	4	0	-	4	-	-	-	6	0.64	0.107	"
HUEHUETENANGO	316	52	8	10	21	1	9	3	9	0.93	0.103	"
IXTAHUACAN	252	49	12	6	18	2	3	7	3	0.26	0.087	"
JOYABAJ	484	22	4	4	12	-	1	1	5	0.50	0.100	"
LA DEMOCRACIA	260	16	8	1	5	1	1	-	1	0.12	0.120	"
LA LIBERTAD*	x	18	7	1	8	1	1	-	2	0.16	0.080	"
MOMOSTENANGO	084, 092	NOT VISITED - LACK OF TIME				-	-	-	-	-	-	-
NAHUALA	140	38	7	3	20	4	-	3	2	0.16	0.080	"
NEBAJ	292	46	12	5	25	1	2	1	11	1.14	0.104	"
OSTUNCALCO	332	48	10	10	25	1	2	-	6	0.57	0.095	"
PANAJACHEL	172	11	3	4	2	1	-	1	13	1.26	0.097	"
PARRAMOS	596	19	1	2	16	-	-	-	8	0.76	0.095	"
PATZICIA	580	55	12	13	29	2	-	-	10	1.00	0.100	"
PATZUN	180,188	55	12	5	32	-	-	2	14	1.40	0.100	"

/al.

Table A-2

DATA BY SEGMENT

UNIT NAME	Segment Number	No.of Visits	No. of Intvws,	No one at home	Non-business.	Refusal	Owner not Resident	Owner Absent	Total of seg. in unit	Area of unit ($km.^2$)	Aver.Area of seg. ($km.^2$)	Segment type (all VI_2 unless marked VI_1)
UEZALTENANGO	348	187	33	32	64	3	31	4	VI_1: 9	VI_1:2.34	0.260	VI_1
"	356	18	3	2	8	2	-	2				VI_2
"	364	5	1	1	3	-	-	-	-	-	-	"
"	372	20	10	4	5	1	-	-	-	-	-	"
"	380	26	3	-	17	2	-	-				"
"	388	83	26	12	34	2	3	5	VI_2:72	VI_2 7:18	0.100	"
"	396	9	2	1	6	-	-	-	-	-	-	"
"	404	51	4	6	35	1	-	2	-	-	-	"
"	412	1	1	-	-	-	-	-	-	-	-	"
"	420	22	9	3	8	-	-	2	-	-	-	"
AN ANDRES ITZAPÁ	588	55	10	9	35	-	-	1	8	0.82	0.103	"
AN ANDRES XEJUL	132	16	3	3	9	-	1	-	4	0.36	0.090	"
AN ANTONIO AGUAS CALIENTES	660	51	18	2	19	1	1	6	5	0.50	0.100	"
AN CRISTOBAL (TOTONICAPAN)	124	44	20	8	6	2	6	-	8	0.84	0.105	"
AN FRANCISCO EL ALTO	100	26	13	7	4	1	1	-	5	0.50	0.100	"
AN JOSE POAQUIL	004	27	8	3	14	-	-	-	7	0.74	0.106	"
AN JUAN COTZAL	284	12	2	5	5	-	-	-	5	0.48	0.096	"
AN JUAN DEL OBISPO	652	30	5	8	13	2	-	1	5	0.54	0.108	"
AN LUCAS, SACATEPEQUEZ	620	51	13	7	31	-	-	-	4	0.42	0.105	"
AN LUCAS TOLIMAN	204	27	2	11	12	2	-	-	5	0.52	0.104	"
AN MARCOS	436	37	9	1	22	2	1	-	7	0.74	0.106	"
AN MARTIN JILOTEPEQUE	012,020	56	10	10	31	-	-	3	11	1.10	0.100	"
AN MARTIN SACATEPEQUEZ	300	NOT VISITED - LACK OF TIME										
AN MIGUEL ACATAN	268	NOT VISITED - LACK OF TIME										
AN MIGUEL DUEÑAS	676	36	4	7	22	1	-	2	3	0.28	0.093	"
AN PEDRO LA LAGUNA	476	52	12	11	19	3	-	5	5	0.46	0.092	"
AN PEDRO SACATEPEQUEZ	428	89	20	20	34	2	2	8	8	0.80	0.100	"
AN SEBASTIAN (HUEHUETGO)	076	11	5	2	3	-	-	1	5	0.52	0.104	"
AN VICENTE BUENABAJ	212	22	8	2	10	-	1	1	2	0.20	0.100	"
ANTA CATARINA IXTAHUACAN	460	16	0	1	15	-	-	-	2	0.18	0.090	"
ANTA CLARA LA LAGUNA	468	26	5	7	9	-	-	5	5	0.52	0.104	"
ANTA CRUZ BALANYA	044	25	5	3	17	-	-	-	5	0.48	0.096	"
ANTA CRUZ DEL QUICHE	228	119	14	21	62	1	5	15	VI_1 1	VI_1 0.30	0.300	VI_1
ANTA CRUZ DEL QUICHE	236	28	2	7	15	-	2	2	14	1.45	0.104	VI_2

Table A-2

DATA BY SEGMENT

UNIT NAME	Segment Number	No. of Visits	No. of Intvws.	No one at home	non-business	Refusal	Owner not Resident	Owner Absent	Total of segs. in unit.	Area of unit ($km.^2$)	Aver.area of Segment ($Km.^2$)	Segment type (all VI, unless Indicated VI_1
SANTA MARIA CAUQUE	612	19	7	2	10	-	-	-	3	0.26	0.087	VI_2
SANTA MARIA DE JESUS	516	73	12	14	37	2	-	8	8	0.82	0.103	"
SANTIAGO ATITLAN	196	22	5	2	9	3	-	1	6	0.62	0.103	"
SANTIAGO CHIMALTENANGO (HUE)	076	16	4	4	7	-	-	1	5	0.52	0.104	"
SANTO TOMAS MILPAS ALTAS	644	18	4	3	12	-	-	-	2	0.18	0.090	"
SIBILIA	324	19	4	1	12	-	-	1	5	0.46	0.092	"
SOLOLA	164	16	2	2	12	-	-	-	7	0.66	0.094	"
SOLOMA	052	20	3	6	11	-	-	-	6	0.56	0.093	"
SUMPANGO	604	54	3	7	38	1	-	1	9	0.86	0.096	"
TECPAN GUATEMALA	028	31	6	6	16	1	2	1	11	1.06	0.096	"
TEJUTLA	308	27	8	6	28	2	1	2	5	0.48	0.096	"
TOTONICAPAN	108	56 (67)	12 (14)	17 (19)	21 (27)	-	3	2 (3)	16	1.64	0.103	"
"	116	11	2	2	6	-	-	1				"
YEPOCAPA	524	49	12	6	20	1	1	3	6	0.56	0.093	"
ZACUALPA	508	27	6	4	14	-	-	3	4	0.40	0.100	"
ZARAGOZA	564-572	49	3	3	42	-	1	-	10	1.05	0.105	"
TOTALS		2,728	558	438	1,370	64	98	132				
PROPORTION OF VISITS			0.20	0.16	0.50	0.02	0.04	0.05				

TOTAL SEGMENTS VISITED: 79 MISCELANEOUS NON-RESPONSES - 68

GSmith/al.

Annex B
Economic and Financial Analysis Tables

Table B-1
Direct and Indirect Income Impacts

Sector	Direct Owner Income per $ of Output	Direct Labor Income per $ of Output	Indirect Coefficient $ of Indirect Income per $ of Output
Wood Products	$0.384	$0.113	$0.721
Textiles	0.432	0.240	1.145
Leather Misc.	0.441	0.375	1.543
Baking/Food	0.600	0.095	1.220
Commerce	0.599	0.094	1.460

Source: Proportions from the Rural Enterprises Survey, with Coefficients from Colombia, *Agriculture Sector Analysis,* pp. 95 and 107, AID, 1972.

Table B-2
Total Direct and Indirect Income Impact

Sector	Total Indirect Income US$ 000	Total Direct and Indirect Income US$ 000	Additional Direct Value of Output US$ 000
Wood Products	$ 872	$ 1,369	$1,210
Textiles	1,557	2,229	1,360
Leather Misc.	2,129	2,945	1,380
Baking/Food	3,104	3,799	2,540
Commerce	2,628	3,321	1,800
All	$10,290	$13,663	$8,290

Source: Samuel Daines computation based on data from Guatemala Rural Enterprises Survey 1978.

Table B-3
Direct and Indirect Income
Impact on the Poor: Economy Wide Estimates

Sector	Input/Output Coefficient $ Inc./$ Output	Total Income to Poor Households US$ 000	Indirect Income to Poor Households US$ 000	Direct Income to Poor Households US$ 000
Wood Products	$0.678	$ 820	$ 323	$ 497
Textiles	1.068	1,453	780	672
Leather Misc.	1.019	1,406	590	816
Baking/Food	0.909	2,310	1,615	695
Commerce	1.082	1,944	1,251	693
All		$7,933	$4,559	$2,768

Source: Samuel Daines computation based on Guatemala Rural Enterprise Survey and coefficients from Colombian agroindustry.

Table B-4
Employment Impact of the Project by Sector (Alternative Estimates)

Sector	No. of Added Workers	$ per Person Added	$ per Person Year of Labor	$ in Employment per Loan
Wood Products	1.0	$2,369	$8,122	$204
Textiles	1.9	421	1,263	160
Leather Misc.	1.7	1,256	1,287	616
Baking/Food	1.1	1,764	4,850	153
Commerce	0.5	2,580	4,300	101

Source: Guatemala Rural Enterprises Survey 1978.

Table B-5
Demand for Credit in the Coming Calendar Year
Small Scale Rural Enterprises

CLASE DE INDUSTRIA	DESEOS DE OBTENER MAS DINERO PRESTADO A INTERES Y PLAZOS ACTUALES															
	INTRS	MAT	PRIM	AMP	CL PR	EQUIPO		ARREGLO		ESPACIO		PERSONAL		DEODAS	
	% SI	Q	%	Q	%	Q	%	Q	%	Q	%	Q	%	Q	%
1. ELABORACION MADERA	72.4	673.	57.	1150.	29.	1440.	48.	292.	33.	2000.	29.	680.	33.	600.	10.
2. TEXTILES	58.6	686.	35.	548.	19.	687.	28.	291.	19.	296.	15.	551.	29.	100.	4.
3.–8. PRODUCTOS FABRICADOS	73.1	770.	53.	533.	24.	757.	37.	1108.	29.	1267.	29.	1580.	39.	2100.	0.
4.–11. ANIMAL LACTEO FRUTA	77.8	1586.	36.	300.	7.	2033.	29.	880.	36.	1000.	14.	1500.	14.	0.	0.
12. GRANOS BASICOS MOLINO	53.3	300.	38.	345.	63.	483.	75.	588.	38.	500.	13.	480.	0.	0.	0.
13.–15. PRODUCTOS CEREALES	45.8	767.	36.	800.	45.	1286.	45.	1550.	36.	50.	27.	425.	36.	0.	9.
16.–17. COMERCIO MAYOR MENOR	60.5	473.	5.	1496.	44.	1855.	25.	636.	29.	1139.	23.	670.	15.	500.	3.
18. SERVICIOS AL PUBLICO	43.8	733.	43.	4000.	0.	773.	29.	40.	14.	1500.	0.	0.	0.	0.	0.
19.–20. SERVICIOS DE COMIDA	55.8	902.	17.	1900.	21.	773.	29.	671.	13.	4933.	33.	613.	29.	0.	0.
TODAS LAS EMPRESAS	60.7	741.	25.	1320.	32.	1161.	31.	628.	26.	1795.	22.	758.	23.	1000.	3.

Source: Rural Enterprise Survey, Guatemala 1978.

Table B-6
Institutional Credit in Last Five Years, Annual Sales, and Family Labor Summary
Small Scale Rural Enterprises

CLASE DE INDUSTRIA	CRED. INSTITUCIONAL RECIBIDU 5 ANOS			VALOR VENTAS BRUTAS 77	PERSONAS NO PAGADAS							
					TIEMPO PARCIAL				TIEMPO COMPLETO			
					HOMBRES		MUJERES		HOMBRES		MUJERES	
	% SI	INTRS ANO	PLAZO MESES		MY15	MN15	MY15	MN15	MY15	MN15	MY15	MN15
1. ELABORACION MADERA	10.3	10.7	42.	2283.	0.41	0.10	0.07	0.07	0.83	0.07	0.03	0.00
2. TEXTILES	11.3	4.0	68.	1334.	0.30	0.02	0.35	0.02	0.56	0.01	0.68	0.07
3.–8. PRODUCTOS FABRICADOS	17.3	4.2	44.	1892.	0.46	0.00	0.23	0.02	0.63	0.08	0.27	0.02
9.–11. ANIMAL LACTEO FRUTA	5.6	5.0	11.	5452.	0.72	0.06	0.39	0.00	0.72	0.00	0.22	0.06
12. GRANDS BASICOS MOLINO	6.7	4.0	60.	985.	0.67	0.07	0.47	0.00	0.07	0.07	0.53	0.00
13.–15. PRODUCTOS CEREALES	4.2	4.0	240.	2687.	0.42	0.13	0.46	0.04	0.54	0.00	0.42	0.00
16.–17. COMERCIO MAYOR MENOR	3.8	2.6	21.	2099.	0.37	0.06	0.49	0.09	0.25	0.03	0.57	0.42
18. SERVICIOS AL PUBLICO	0.0	0.0	0.	908.	0.13	0.06	0.13	0.00	0.56	0.00	0.13	0.00
19.–20. SERVICIOS DE COMIDA	11.6	5.8	77.	3910.	0.40	0.02	0.35	0.00	0.47	0.00	0.70	0.00
TODAS LAS EMPRESAS	7.7	4.4	55.	2130.	0.38	0.05	0.39	0.05	0.43	0.03	0.52	0.20

Source: Rural Enterprise Survey, Guatemala 1978.

Table B-7
Loans Received by Small Scale Enterprises in 1977

CLASE DE INDUSTRIA	PRESTAMOS RECIBIDOS DURANTE EL ANO 1977												
	% SI	COOP A	COOP B	BANCOS	OTRAS INST	COMP PROD	VEND INSM	PRESTA MISTAS	AMIGO PARNT	ANICP CONTRA	OIRAS FUENT	INIRS ANO	PLAZO MESES
1. ELABORACION MADERA	13.8	0.	0.	0.	0.	0.	0.	125.	38.	500.	0.	3.3	20.
2. TEXTILES	12.0	5.	6.	156.	0.	0.	0.	0.	65.	21.	3.	17.8	13.
3.–8 PRODUCTOS FABRICADOS	9.6	0.	0.	0.	0.	0.	22.	0.	100.	0.	16.	0.2	1.
9.–11. ANIMAL LACTEO FRUTA	11.1	0.	0.	0.	0.	0.	150.	0.	0.	0.	1500.	5.0	3.
12. GRANOS BASICOS MOLINO	6.7	200.	0.	0.	0.	0.	0.	100.	500.	0.	0.	0.0	0.
13.–15. PRODUCTOS CEREALES	4.2	0.	0.	0.	0.	0.	3000.	250.	0.	0.	0.	1.0	7.
16.–17. COMERCIO MAYOR MENOR	18.9	7.	0.	129.	20.	24.	108.	82.	98.	122.	133.	12.7	9.
18. SERVICIOS AL PUBLICO	18.8	0.	0.	0.	0.	0.	0.	0.	183.	0.	50.	0.0	1.
19.–20. SERVICIOS DE COMIDA	11.6	0.	0.	200.	0.	0.	370.	0.	180.	140.	0.	10.4	49.
TODAS LAS EMPRESAS	14.4	7.	1.	113.	11.	13.	123.	55.	98.	104.	113	11.4	11.

Source: Rural Enterprise Survey, Guatemala 1978.

Table B-8
Major Reasons Entrepreneurs Reported for Not Expanding Production

CLASE DE INDUSTRIA	LAS RAZONES MAS IMPORTANTES POR QUE NO PRODUCE MAS															
	CREDITO				ESC. MATER. PRIMA				MANO DE OBRA				NO ACCESO			
	% 1	% 2	% 3	% 4	% 1	% 2	% 3	% 4	% 1	% 2	% 3	% 4	% 1	% 2	% 3	% 4
1. ELABORACION MADERA	55.	10.	7.	0.	3.	41.	0.	0.	7.	7.	17.	0.	17.	3.	14.	0.
2. TEXTILES	69.	13.	3.	0.	7.	19.	9.	0.	5.	23.	6.	0.	7.	4.	5.	1.
3.–8 PRODUCTOS FABRICADOS	75.	8.	4.	2.	6.	17.	10.	2.	13.	13.	15.	0.	4.	17.	2.	2.
9.–11. ANIMAL LACTEO FRUTA	56.	17.	0.	6.	22.	11.	17.	0.	0.	17.	11.	0.	17.	11.	6.	0.
12. GRANOS BASICOS MOLINO	53.	20.	0.	0.	7.	13.	0.	0.	0.	7.	0.	0.	7.	20.	7.	0.
13.–15. PRODUCTOS CEREALES	63.	21.	0.	0.	8.	25.	13.	0.	4.	4.	8.	4.	8.	17.	4.	0.
16.–17. COMERCIO MAYOR MENOR	67.	14.	3.	0.	3.	11.	3.	0.	3.	8.	1.	0.	6.	13.	2.	0.
18. SERVICIOS AL PUBLICO	50.	6.	0.	0.	0.	0.	0.	0.	0.	13.	6.	0.	0.	0.	0.	0.
19.–20. SERVICIOS DE COMIDA	37.	16.	5.	0.	2.	2.	2.	0.	7.	9.	9.	2.	16.	7.	0.	0.
TODAS LAS EMPRESAS	64.	13.	3.	0.	5.	15.	5.	0.	5.	12.	6.	0.	8.	10.	3.	0.

Source: Rural Enterprise Survey, Guatemala 1978.

Table B-9
Value of Capital Equipment and Energy Use
Small Scale Rural Enterprises

CLASE DE INDUSTRIA	VALOR DE EQUIPO		% QUE	DE LOS QUE USAN ENERGIA % QUE USAN LAS FORMAS ABAJO					
	CUANDO FUE COMPRADO	AL COMPRARLO HOY	USA ENERGIA	ANIMAL	MOTORES COMB	MOTORES ELEC	RUED HIDR	HUM-ANO	ELECTR Y OTRO
1. ELABORACION MADERA	823.	1892.	68.97	0.00	0.00	30.00	0.00	85.00	10.00
2. TEXTILES	615.	968.	73.68	0.00	0.00	7.14	2.04	93.88	12.24
3.–8. PRODUCTOS FABRICADOS	750.	1490.	78.85	2.44	2.44	12.20	0.00	85.37	26.83
9.–11. ANIMAL LACTEO FRUTA	987.	1688.	83.33	6.67	6.67	20.00	6.67	86.67	20.00
12. GRANOS BASICOS MOLINO	788.	1258.	60.00	0.00	44.44	33.33	0.00	44.44	11.11
13.–15. PRODUCTOS CEREALES	324.	760.	79.17	0.00	5.26	5.26	0.00	36.84	78.95
16.–17. COMERCIO MAYOR MENOR	848.	1409.	29.41	1.43	5.71	7.14	1.43	42.86	62.86
18. SERVICIOS AL PUBLICO	1328.	983.	56.25	0.00	33.33	11.11	0.00	66.67	11.11
19.–20. SERVICIOS DE COMIDA	3031.	4636.	55.81	0.00	16.67	16.67	0.00	37.50	70.83
TODAS LAS EMPRESAS	940.	1569.	53.70	0.98	5.90	11.48	1.31	69.84	34.75

Source: Rural Enterprise Survey, Guatemala 1978.

Table B-10
Annual Expenses by Category for 1977
Small Scale Rural Enterprises

CLASE DE INDUSTRIA	GASTOS DEL ANO 77					
	MATERL PRIMA	EQUIPO ADCNAL	PRSNAL RMNRDO	ARRENO MIENTO	OTROS GASTOS	TOTAL
1. ELABORACION MADERA	729.	66.	577.	46.	72.	1503.
2. TEXTILES	573.	22.	190.	12.	74.	870.
3.–8. PRODUCTOS FABRICADOS	865.	10.	215.	36.	61.	1188.
9.–11. ANIMAL LACTEO FRUTA	694.	68.	159.	22.	993.	1941.
12. GRANOS BASICOS MOLINO	435.	45.	49.	18.	226.	781.
13.–15. PRODUCTOS CEREALES	1498.	63.	363.	68.	71.	2072.
16.–17. COMERCIO MAYOR MENOR	315.	64.	28.	17.	761.	1219.
18. SERVICIOS AL PUBLICO	84.	29.	83.	23.	347.	565.
19.–20. SERVICIOS DE COMIDA	458.	113.	303.	102.	970.	2015.
TODAS LAS EMPRESAS	516.	52.	152.	26.	469.	1238.

Source: Rural Enterprise Survey, Guatemala 1978.

Table B11
Family Size and Labor Summary by Sector

CLASE DE INDUSTRIA	# DE OBS.	RESIDENTES		HOMBRE MESES POR INDUSTRIA PROMEDIO		PERSONAS TRABAJANDO	
		% MENOS DE 7	PROMED MAS DE 7	PERSONAL PAGADO	PERSONAL NO PAGADO	HOMBRES	MUJERES
1. ELABORACION MADERA	29	51.72	0.00	8.9	12.9	1.97	0.17
2. TEXTILES	133	51.13	8.57	9.2	18.8	1.29	1.26
3.–8 PRODUCTOS FABRICADOS	52	59.62	8.00	7.0	18.8	2.31	0.48
9.–11. ANIMAL LACTEO FRUTA	18	55.56	7.00	6.7	24.0	1.83	0.72
12. GRANOS BASICOS MOLINO	15	53.33	10.00	3.9	20.1	1.00	1.07
13.–15. PRODUCTOS CEREALES	24	33.33	0.00	11.3	23.2	1.63	1.46
16.–17. COMERCIO MAYOR MENOR	238	68.91	9.44	1.0	19.7	0.68	1.23
18. SERVICIOS AL PUBLICO	16	56.25	0.00	3.8	10.4	0.69	0.38
19.–20. SERVICIOS DE COMIDA	43	53.49	9.43	11.2	18.2	1.16	1.37
TODAS LAS EMPRESAS	568	59.15	9.08	5.4	19.0	1.16	1.09

Source: Rural Enterprise Survey, Guatemala 1978.

Table B-12
Employment Impact of Credit and Savings Patterns

CLASE DE INDUSTRIA	CREDITO PERSONAS ADICIONL		DINERO AHORRADO	
	% SI	#	% SI	CANTIDAD
1. ELABORACION MADERA	51.7	2	24.1	739
2. TEXTILES	46.6	4	22.6	332
3.–8. PRODUCTOS FABRICADOS	55.8	3	23.1	685
9.–11. ANIMAL LACTEO FRUTA	33.3	2	38.9	988
12. GRANOS BASICOS MOLINO	6.7	24	33.3	286
13.–15. PRODUCTOS CEREALES	37.5	3	25.0	217
16.–17. COMERCIO MAYOR MENOR	26.9	2	26.5	563
18. SERVICIOS AL PUBLICO	31.3	2	18.8	267
19.–20. SERVICIOS DE COMIDA	37.2	3	34.9	573
TODAS LAS EMPRESAS	36.4	3	26.1	517

Source: Rural Enterprise Survey, Guatemala 1978.

Table B-13
Wood and Wood Products
Financial Statements

	Historical	Pro Forma				
		1	2	3	4	5
Balance Sheet						
Current and Fixed Assets	1237	2542	2647	2752	2857	2962
Allow for Depreciation	<55>	<160>	<265>	<670>	<475>	<580>
Total Assets	1182	2382	2382	2382	2382	2382
Liabilities	–	1051	902	753	604	456
Capital	1182	1331	1480	1629	1778	1926
Total Liabilities and Capital	1182	2382	2382	2382	2382	2382
Income Statement						
Sales	2283	3459	3551	3640	3732	3823
Cost of Sales	1437	2129	2227	2293	2351	2409
Gross Margin	846	1280	1314	1347	1381	1414
Depreciation	55	105	105	105	105	105
Operating Income	791	1175	1209	1242	1276	1309
Interest	–	144	126	108	90	72
Net Income	791	1031	1083	1134	1186	1237
Sources and Applications of Cash						
Net Income and Depreciation	846	1136	1188	1239	1291	1342
Loan Received	–	1200				
Total Sources	846	2336	1188	1239	1291	1342
Loan Amortization	–	149	149	149	149	148
Investment	–	1200				
Family Income Withdrawn	846	884	924	985	1037	1089
Total Applications	846	2231	1083	1134	1186	1237
Net Cash	-0-	105	105	105	105	105
Return on Total Assets	67%	43%				52%
Return on Equity	67%	82%				67%
$\frac{\Delta \text{Operating Income}}{\text{Debt Service}}$		1.3				2.5
% Decrease in Sales		7%				21%
Decrease in Gross Margin		3%				8%

Table B-14
Textiles and Products
Financial Statements

	Historical	Pro Forma				
		1	2	3	4	5
Balance Sheet						
Current and Fixed Assets	868	1730	1792	1854	1916	1978
Allow for Depreciation	<41>	<103>	<165>	<287>	<289>	<351>
Total Assets	827	1627	1627	1627	1627	1627
Liabilities		756	672	608	544	480
Capital	827	891	955	1019	1023	1142
Total Liabilities and Capital	827	1627	1622	1627	1627	1627
Income Statement						
Sales	1334	2208	2270	2332	2394	2456
Cost of Sales	848	1413	1453	1492	1532	1572
Gross Margin	486	795	817	840	862	884
Depreciation	41	62	62	62	62	62
Operating Income	445	733	755	778	800	822
Interest	–	96	88	81	73	65
Net Income	445	632	667	697	722	752
Sources and Applications of Cash						
Net Income and Depreciation	486	699	729	759	789	819
Loan Received		800				
Total Sources	486	1499	729	759	789	819
Loan Amortization		64	64	64	64	64
Investment		800				
Family Income Withdrawn	486	573	603	633	663	693
Total Applications	486	1437	667	697	727	757
Net Cash	486	62	62	62	62	62
Return on Total Assets	54%	39%				47%
Return on Equity	54%	74%				68%
$\frac{\Delta \text{Operating Income}}{\text{Debt Service}}$		1.8				2.9
% Decrease in Sales		16%				28%
Decrease in Gross Margin		6%				10%

Table B-15
Leather, Ceramics, and Miscellaneous
Financial Statements

	Historical	Pro Forma				
		1	2	3	4	5
Balance Sheet						
Current and Fixed Assets	1095	2172	2249	2326	2403	2480
Allow for Depreciation	<50>	<127>	<204>	<281>	<358>	<435>
Total Assets	1045	2045	2045	2045	2045	2045
Liabilities		918	836	754	672	590
Capital	1045	1127	1209	1291	1373	1455
Total Liabilities and Capital	1045	2045	2045	2045	2045	2045
Income Statement						
Sales	1892	2545	2914	2983	3051	3120
Cost of Sales	1178	1764	1807	1850	1891	1934
Gross Margin	714	1081	1107	1133	1160	1186
Depreciation	50	77	77	77	77	77
Operating Income	664	1004	1030	1056	1083	1109
Interest	—	120	110	100	90	81
Net Income	664	884	920	956	993	1028
Sources and Applications of Cash						
Net Income and Depreciation	714	961	997	1033	1070	1105
Loan Received		1000				
Total Sources	714	1961	997	1033	1070	1105
Loan Amortization		82	82	82	82	82
Investment		1000				
Family Income Withdrawn	714	802	838	874	911	946
Total Applications	714	1884	920	956	993	1028
Net Cash	-0-	77	77	77	77	77
Return on Total Assets	68%	43%				50%
Return on Equity	68%	81%				73%
Δ Operating Income / Debt Service		1.7				2.7
% Decrease in Sales		13 %				24%
		5 %				9%

Table B-16
Baking and Food Products
Financial Statements

	Historical	Pro Forma				
		1	2	3	4	5
Balance Sheet						
Current and Fixed Assets	848	1699	1750	1801	1852	1903
Allow for Depreciation	<22>	<73>	<124>	<175>	<226>	<277>
Total Assets	866	1626	1626	1626	1626	1626
Liabilities		712	624	536	448	360
Capital	826	914	1002	1090	1178	1266
Total Liabilities and Capital	826	1626	1626	1626	1626	1626
Income Statement						
Sales	2687	4428	4532	4632	4734	4836
Cost of Sales	2009	3321	3399	na	3550	3627
Gross Margin	678	1107	1133	1158	1184	1209
Depreciation	22	51	51	51	51	51
Operating Income	656	1056	1082	1107	1133	1158
Interest		96	75	75	64	54
Net Income	656	960	997	1032	1069	1104
Sources and Applications of Cash						
Net Income and Depreciation	678	1011	1048	1083	1120	1155
Loan Received		800				
Total Sources	678	1811	1048	1083	1120	1155
Loan Amortization		88	88	88	88	88
Investment		800				
Family Income Withdrawn	678	877	909	944	981	1016
Total Applications	678	1760	997	1032	1069	1104
Net Cash	-0-	51	51	51	51	51
Return on Total Assets	79%	59%				68%
Return on Equity	79%	110%				90%
△ Operating Income / Debt Service		2.3				3.5
% Decrease in Sales		20%				30%
Decrease in Gross Margin		5%				7%

Table B-17
Commercial Enterprises
Financial Statements

	Historical	Pro Forma				
		1	2	3	4	5
Balance Sheet						
Current and Fixed Assets	1194	2401	2508	2615	2722	2829
Allow for Depreciation	<57>	<164>	<271>	<378>	<485>	<592>
Total Assets	1137	2237	2237	2237	2237	2237
Liabilities		950	800	650	500	352
Capital	1137	1287	1437	1587	1737	1885
Total Liabilities and Capital	1137	2237	2237	2237	2237	2237
Income Statement						
Sales	2099	3431	3550	3669	3788	3907
Cost of Sales	1155	1887	1952	2018	2083	2149
Gross Margin	944	1544	1598	1651	1705	1758
Depreciation	57	107	107	107	107	107
Operating Income	887	1437	1491	1544	1598	1651
Interest	—	132	114	96	78	60
Net Income	887	1305	1377	1448	1520	1591
Sources and Applications of Cash						
Net Income and Depreciation	944	1412	1484	1555	1627	1698
Loan Received		1100				
Total Sources	944	2512	1484	1555	1627	1698
Loan Amortization		150	150	150	150	148
Investment		1100				
Family Income Withdrawn	944	1155	1227	1298	1370	1443
Total Applications	944	2405	1372	1448	1520	1591
Net Cash	-0-	107	107	107	107	107
Return on Total Assets	78%	58%				71%
Return on Equity	78%	108%				88%
$\frac{\Delta \text{Operating Income}}{\text{Debt Service}}$		2.0				3.7
% Decrease in Sales		17%				32%
Decrease in Gross Margin		8%				14%

Table B-18
Public Services
Financial Statements

	Historical	Pro Forma				
		1	2	3	4	5
Balance Sheet						
Current and Fixed Assets	1551	2059	2071	2093	2124	2166
Allow for Depreciation	<89>	<192>	<295>	<398>	<501>	<604>
Total Assets	1462	1867	1776	1695	1623	1562
Liabilities		459	418	377	336	295
Capital	1462	1408	1358	1318	1287	1267
Total Liabilities and Capital	1462	1867	1776	1695	1623	1562
Income Statement						
Sales	908	1173	1173	1183	1193	1207
Cost of Sales	536	692	692	698	704	712
Gross Margin	372	481	481	485	489	495
Depreciation	89	103	103	103	103	103
Operating Income	283	378	378	382	386	392
Interest		60	56	50	45	40
Net Income	283	318	322	332	341	352
Sources and Applications of Cash						
Net Income and Depreciation	372	421	425	435	444	455
Loan Received		500				
Total Sources	372	921	425	435	444	455
Loan Amortization		41	41	41	41	41
Investment		500				
Family Income Withdrawn	372	372	372	372	372	372
Total Applications	372	913	413	413	413	413
Net Cash	-0-	8	12	22	31	42
Return on Total Assets	19%	17%				23%
Return on Equity	19%	22%				28%
$\frac{\Delta \text{ Operating Income}}{\text{Debt Service}}$		0.9				1.3
% Decrease in Sales		0%				6%
Decrease in Gross Margin		0%				2%

Table B-19
Profitability Analysis

Sector	Historical			Credit Additive[a]			Projected	
	Total Assets	Oper. Income	Rate of Return	Total Assets	Oper. Income	Rate of Return	Total Assets	Rate of Return
1. Wood and Wood Products	$1,182	$ 791	67%	$1,200	$384	32%	$2,382	48%
2. Textiles and Products	827	445	54	800	288	36	1,627	45
3.-8. Leather, Ceramics, Fiber	1,045	664	64	1,000	340	34	2,045	49
9.-15. Baking & Food Products	826	656	79	800	400	50	1,626	65
16.-17. Commercial Enterprises	1,137	887	78	1,100	550	50	2,237	64
18. Public Services	1,462	283	19	500	95	19	1,962	19

[a]Based on replacement value of total assets rather than book value of total assets.

Table B-20
Composite Credit Analysis

	Subsector	Short Term	Long Term	Total
1.	Wood and Wood Products	$456	$744	$1,200
2.	Textiles and Products	480	320	800
3.	Leather, Ceramics, and Fiber	590	410	1,000
13.-15.	Baking and Food Products	360	440	800
16.-17.	Commercial Enterprises	352	748	1,100
18.	Public Services	295	205	500

SPECIAL ANNOTATED BIBLIOGRAPHY

Compiled to Assist in the Formulation of the Rural Enterprises Program in Guatemala

By

GAMCO, INC.

August, 1977

Note: This bibliography was not produced under the Experience Inc. contract but is included because of its wealth of references relating to the Rural Enterprises Project.

Bibliography

TABLE OF CONTENTS

INTRODUCTION

The general theme of this annotated bibliography deals with characteristics and problems of small and medium-size enterprises development programs. Most of the publications listed were prepared within the last 10 years. It includes a variety of sources from different development organizations and individuals, and range from in-house internal reports, research papers to books. Most of the material is topic specific dealing for the most part with programs in Latin America. However, a few listings deal with small enterprises development programs in other continents or with the general topic without reference to a country.

The contents include 68 listings that were broken-down into five categories:

- Relevant Past AID Loan Programs.
- General Studies and Reports.
- Finance.
- Technical Assistance.
- Bibliographies.

GAMCO has secured copies of all the listings in the first category (10), and 11 other publications of the other four categories. Several publications that are listed include the call numbers of the AID reference library in Washington. Copies of these publications could be obtained with the assistance of the project back-stop officer in Washington. The publications marked by an asterisk (*) at the end of the listing (but, before the annotation), could be obtained at the Development Centre of the O.E.C.D.

The following are the addresses for three other major publication sources included in the bibliography:

Development Centre
Organization for Economic Cooperation and Development
OECD Publication Office
2, Rue Andre Pascal
75775 Paris Cedex 16

or

OECD Publications Center
Suite 1207
1750 Pennsylvania Avenue, N.W.
Washington, D.C. 20006

International Labour Office
Publications
CH-1211 Geneva 22
Switzerland

F.A.O.
Documentation Center
Via delle Terme di Caracalla
00100 Rome, Italy

Each publication is listed only once. It should be stated that in attempting to classify the five categories, it was not always possible to avoid all trace of ambiguity due to the fact that a number of the listings concern several sub-topiecs.

I. RELEVANT PAST AID LOAN PROGRAMS
(Copies on File)

1. Productive Credit Guaranty Program - USAID Missions in: Bolivia, Columbia, Honduras, Paraguay and Nicaragua. 1977.

This five country pilot program is scheduled to start operating the Fall of 1977. AID will guarantee up to 75% of individual sub-loans made by participating ICI's. The main implementing agencies are The Central Banks of each country. The program hopes to stimulate the participation of private financial institutions. The target group is composed of small farmers and rural enterprises; for loans of a maximum of $15,000 to individuals and $40,000 to groups or co-operatives. Pre-project technical assistance can be financed by the program. The five country programs are almost identical in design. The project papers make no mention of promotional inputs and very little on the way of T.A. delivery. Nevertheless an intensive review of the project papers could provide useful insight into project design elements such as: operational relationships between the main implementing agencies and ICI's, definition of target enterprises, terms and characteristics of sub-loans and rational behind the determination of interest spreads and Commissions.

2. LAAD Agribusiness Development - ROCAP, 1975.

This program involves a second AID loan to LAAD. The program characteristics that are of interest to the Guatemala project is the description in the project paper (p.p.) of the modes used by LAAD to provide technical assistance. In addition, the P.P. briefly describes the interrelationships between LAAD and other financial institutions (ICI's), which LAAD would provide funds for rural development projects. These working arrangements between LAAD and ICI's should be examined during the course of analysis and research for the design of the rural enterprises program in Guatemala.

3. LAAD Regional Agribusiness Development - Caribbean Reginal - ROCAP, 1975.

This third AID loan to LAAD was oriented to assist LAAD to form an additional subsidiary in the Caribbean region. The two principle characteristics of interest (for the Guatemala project) discussed in the project paper are related to: (1) the screening criteron to be utilized to determine sub-project impact and eligibility, which included benchmark statistics such as the maximum amount of fixed assets investment for job created ($7,500), and (2) the staffing requirements and organization of the new subsidiary.

4. Agricultural Cooperative Development Loan - USAID Chile, 1974.

This loan program called for the Institute for the Financing of Cooperatives (IFICOOP), (a private cooperative development bank owned by its member cooperatives) to plan, promote and finance an estimated 97 enterprises sponsored by agricultural, artisan and related rural fishing cooperatives. The capital assistance paper describes with some detail the internal organizational modification within IFICOOP to accomodate the program, as well as the details of a technical assistance program to help cooperatives to improve their business management capacity. An intensive review of this program paper could provide some helpful insights into alternative modes for the internal modifications and technical assistance inputs that might be required of

FENACOAC as one of the principle implementing agencies of the Guatemala project.

5. Small Farm Management and Technology - USAID Chile, 1977.

This project was designed to support agricultural cooperatives by establishing a private sector delivery system for technical assistance. The program was cancelled even though it reached the P.P. stage. The cancellation was connected to Chile's recent refusal of foreign aid. The project, however, could be of interest to the Guatemala project due the rather innovative features for delivering T.A. Items such as "payment orders" which would have been an instrument that could only be used to be cashed in for technical assistance services from qualified private sector entities. The methodology used to determine the cost of T.A. could also be an interesting input for the Guatemala project. The program included provisions for the delivery of an Intermediate Rural Technology Component.

6. Small and Medium Industry Development - USAID - Columbia, 1974.

This program called for the assistance to the development of small and medium-size industry by funding innovative credit activities and the provision of funds for technological transfer activities. The review of this project paper could be useful because of the innovating features it attempts to introduce:

-- The setting up of a "guarantee fund."
-- "Confidence Credits" specially designed for very small industrialists with no guarantees to offer and that do not have adequate administrative systems.
-- "Community Credits", loans to cooperatives and associations.
-- "Professional Credits", loans to qualified professionals, not necessarily with a university background.
-- Institution of Accounting Centers to counsel small industrialists on accounting principles and basic record keeping.

7. Rural Enterprises - USAID Paraguay, 1976.

This loan program oriented to stimulate the development of rural enterprises, attempts to obtain participation of commercial banks by setting up a discount fund at the Central Bank level. The analysis of the project paper might be useful, since it describes the operational relationships between the Central Bank and potential ICI's. It also includes screening guidelines and an impact determination format to be applied to each sub-loan.

8. Rural Development Agribusiness Fund - USAIA, Peru, 1977.

The project paper of this loan program provides a clear definition of rural target enterprises. One of the main objectives of the loan is to stimulate commercial banks to extend credit to rural enterprises. The operational interrelationships between the main implementing agency (Central Bank) and other ICI's is described as well as the types of T.A. that can be financed by the loan funds. The project paper also includes suggested screening guidelines and impact determination format.

9. Rural Enterprises Development - USAID Peru, 1974.

This loan program is oriented to finance rural enterprises in five selected poor regions of the Peruvian highlands. It finances "soft" loans to employment generating sub-projects, including working capital and fixed assets financing. The target enterprises are members of the rural: service, commercial, artisan and manufacturing sector. Any information concerning this project is worthwhile reviewing since it has many similar characteristics to the proposed rural enterprises project in Guatemala.

10. Agri-Industry Development Loan - USAID Uruguay, 1975.

This program was one of the first recent attempts to incite commercial banks to participate in the development finance process. The project paper offers a detail description of target enterprises as well as the interrelationships between the main implementing agency (Central Bank) and potential ICI's. Technical assistance can be financed by the loan program either at the pre-project stage or after project implementation. The project paper also details the role of a technical unit of the Ministry of Industry Unidad Asesona in the process and acceptance of sub-loan applications.

II. GENERAL STUDIES AND REPORTS

11. Small-Scale Industry In Latin America - United Nations, New York, 1969, 323 pages.

This publication contains data on small-scale industries and development programs in the countries of the region, as well as findings and conclusions of the Seminar on small-scale Industry in Latin America held in Quita, Ecuador, in December 1966. The four major topics contained in the report are as follows: (1) the contribution of small-scale industry to the development of Latin America, (2) technical services and assistance for small-scale industry, (3) financing of small-scale industry and (4) regional and international cooperation in this field. Part II of the study is an analytical review of the position of small-scale industries in the region. It discusses definitions of small-scale industry, its structure in various Latin American countries, and some of its major problems.

12. Poling, Virgil, Evaluation Study of Handicraft and Small Industry Programs, Report prepared for the Office of Program Evaluation, USAID/Washington, 56 pages. (AID Ref. Lib Call # 338.64 P. 768)

Evaluation of three country programs (Morrocco, Nigeria, Korea) oriented to stimulate Handicrafts and small industries. The report centers in evaluating the technical assistance efforts and the implementing methodology for delivering such assistance. It includes some interesting formats for the internal control of T.A. delivery and seminar attendance.

13. Small Scale Industry, Monograph No. 11, Based on the proceedings of the International Symposium on Industrial Development (Athens, Nov. - Dec., 1967) UNIDO, Viena, 1969. 46 pages.

The monograph in a broad sense, deals with the major problems of small-scale industries and the major objectives (Social and economical) of promoting small industries. The role that governments can play in promoting small industries, and finally it describes the typical technical assistance projects financed by UNIDO.

14. Goldbert, Ray A. Agribusiness Management For Developing Countries - Latin America. Bollinger Publishing Co., Cambridge, Massachusetts, 1974. 409 pages.

This book describes an agribusiness, commodity system approach to problem solving and decision making by private and public managers and the need for using such a system approach in the training of on-farm and off-farm participants to develop the skills needed for improving managerial capabilities in the public and private sector institutions in Central America. The book consists of six chapters. Chapter One defines the commodity system approach and discusses its utility for public and private decision makers and for educators. It also describes the dimensions of Central American agribusiness and the significance within it of the fruit and vegetable system. It concludes with an evaluation of the need for a commodity system approach in Central American agribusiness management education which can help to identify and strengthen managerial weaknesses in agribusiness development efforts. Chapter Two provides an overview of the fruit and vegetable commodity system in the U.S. in terms of industry structure, trends in consumption and supply, government programs, imports, and the role of the Central American export industry. Chapter Three describes coordinating linkages between Central American exporters and the U.S. market for fruit and vegetables. Chapter Four discusses the structure of Central American production of fruits and vegetables for export, and trends affecting the structure. Case studies of operations in Guatemala, El Salvador, Honduras, and Nicaragua are included. Chapter Five discusses management education needs in light of existing problems in Central American agribusiness. Recommendations for action are offered. Chapter Six summarizes the book and presents it conclusions.

15. Gebregziabher Betru. Integrated Development In Rural Ethiopia: An evaluation Study of the Chilalo Agriculture Development Unit (CADU) Program of Advanced Studies in Institution Building and Technical Assistance, Methodology (PASTAM) International Development Research Center, Indiana University, 1975, 78 pages.

This report of PASITAM experience in Ethiopia argues for integrated rural development programs through a "Package Approach." It describes the evaluation and performance of CADU and the lessons learned by the experience. A review of the Ethiopia experience by PASITAM could be helpful background information for the design of the Guatemala project.

16. They Know How - An Experiment In Development Assistance, Inter-American Foundation, Washington, D.C., 1977, 157 pages.

This publication presents the experience of IAF shortly after it started operations. It includes the period of 1971 to 1977. It describes the IAF approach, the type of programs they sponsor (credit, T.A., grants, etc.). It includes a description of the Credit Programs, project implementation analysis and social indicators of results and achievements. Their measurement of social gain elements could contribute to the design of the demand analysis survey to be carried out in the Guatemala project.

17. Darling, Arthur H., Guidelines For Ex-Post Evaluation of Global Industrial Loans, Inter-American Devleopment Bank, Operations Evaluation Office, Washington, D.C., 1977, Two Volumes, 85 pages (copy on file)

This publication presents the guidelines used by IDB in evaluating their global industrial loans. The guideline covers every phase of the evaluation process including selection of loans, collection of data, analysis of results and report submission to the IDB. Included also, is a small computer program for the calculation of rates of return. This publication could provide some helpful elements in the design of an impact format for the Guatemala project.

18. Sagastume M. de Arrogave, Gloria, La ley de Fomento de la Pequena Empresa su Aplicacion y Posibles Incidencias a Corto y Largo Plazo, Universided de San Carlos de Guatemala, Thesis, 1973, 143 pages, (Copy on file)

Mrs. Arrogave thesis is the only known publication that evaluates the small enterprises development law in Guatemala. She evaluates the positive and negative effects of the law. She suggests modifications to the law so that it can be more effective. She also suggest modifications to the Banco de Guatemala guaranty program for small enterprises.

19. Developing World Industry and Technology. Informal Small-Scale Enterprise Sector of the Urban Economy, Problems and Suggested Approaches, 1976, 88 pages (Copy on file)

This report prepared for the technical assistance bureau of USAID deals with concepts and approaches to action programs aimed at expanded employment and income opportunities for the urban (town-centered) poor. The "network" systems discussed in the report include: subcontracting, government procurement, demonstration centers, technical support centers, common facility cooperatives, community-based member-controlled enterprises, technology funds, private sector support for enterprise expansion, neighborhood-controlled community development corporation (U.S.A.), and community enterprises generation by private voluntary organizations (Peru.).

20. The Vital Majority: Small Business in the American Economy, Edited by Dean Carson, Small Business Administration, Washington, D.C., 1973, 494 pages.

Essays marking the twentieth Anniversary of the U.S. Small Business Administration. It contains twenty six articles dealing primarily with specific elements of small business in the areas of: Finance, Management and Business Organization and Public Policy.

21. Entrepreneurship and Enterprise Development: A World Wide Perspective. Proceedings of Project ISEED (Conferencia Internacional Sobre el Arte Empresarial y del Desavollo de Empresas) Summer, 1975. Published by Project ISEED, Ltd. and the Center for Venture Management, 691 pages.

This publication contains 12 articles on the subject of rural entrepreneurial development and five articles on regional development. The opinions expressed on the rural entrepreneurial development articles would be helpful inputs in matters concerning T.A., training and fund promotion.

22. Stepanek, Joseph E., Small Industry Advisory Services, The Free Press, Glencoe, Illinois, 1960, 193 pages.

This book is a comprehensive analysis of the important elements to consider in designing an advisory service (T.A.) program. It includes guidelines to follow in setting up exterior services. It also deals with advisory service evaluations and the selection and training of local staff to provide advisory services.

23. An International Complilation of Small-Scale Industry Definitions, IDD, Engineering Experiment Station, Georgia Institute of Technology, January, 1975, 64 pages. (AID Ref. Lib. Call #338.003 A898)

This publication contains the definition by fifty nine countries of "small industries." It would be useful to have this publication to help determine the maximum (size) levels of target enterprises to be financed by the rural development fund in Guatemala.

24. Morse R. and Staley E., Modern Small Industry for Developing Countries, McGraw-Hill Book Co., 1965, 435 pages. (Copy on AID Ref. Lib.)

This book is a comprehensive treatment of the general subject of small industry in developing countries. It discusses the main types of small industries in developing countries and which ones appear to be more successful. It also recommends general guidelines for the institution of a small industry development program. Included is a general description of small industry programs in various countries.

25. Bhattasali B.N., Small and Medium Scale Industries in Developing Countries, Asian Productivity Organizations, 1964, 56 pages.

This monograph on small industries has three chapters. The first chapter discusses general issues of small industry development (e.g. the "need" for it, development and promotion of programs, etc.). The second chapter deals with the organizational aspects of small industry programs. The final chapter outlines the issues and techniques to improve the management capabilities of small industry managers.

26. Solow A. and Fredman D., A Big Push for Small Business, 15 pages. (AID reference Lib. Call # 338.645689)

This fifteen page report presents in a brief form all the major issues affecting small enterprises development. It outlines small industry's contribution to development, and discusses T.A.,promotion and special inducements needed for a small industry development program.

27. Seminario Latino-Americano de la Pequena y Mediana Empresa, O.E.A., Caracas, 5th-22nd December, 1966.

Analysis of some papers presented at the Latin American Seminar on small and medium-sized firms, organized by the Organization of American States and the Government of Venezuela, in Caracas from 5th-22nd December, 1966. Among the participants were UNIDO, O.E.C.D., I.L.O. and the American Association for Productivity. The aim of this conference was to study the problems arising from the development of small and medium-sized firms, and also the various forms of assistance to S.M.B.s.

28. Role of Rural Processing Industries in the Economic Development of Afro-Asian Countries and F.A.O. Activities in the Field. (F.A.O.) Rome, 1969, 39 p. plus Annexes, (AAC/SI/SP/5)

This document stresses the importance in a largely undeveloped economy of industries based on the use of local raw materials and by-products; on the one hand these industries employ a bigger labor force than heavy industry and, on the on the other hand, they can be sited in rural areas. After stating the necessity of using the technology of industrialized countries, the document presents a study of a certain number of typical industries in this sector: oil-works, (olives, coca-nut oil), preparation of rice, fruit and vegetable canning, tanning industries, rubber, natural fibres.

29. Small-Scale Industry in the Development of Latin America in: Economic Bulletin for Latin America, Vol. XII, n.1, May 1967, p.63-103.

There are two main parts in this article which ends with a large number of statistics. The first part examines small-scale industry's contribution, in terms of employment and industrial production, to the industrialization of Latin American countries; its structure by main groups of products, and the difficulties, due to external and internal factors, that it has to overcome. The second part is a study of Latin American experiments in the development of small-scale industry: regional programs; financial and technical assistance; industrial estates; international aid.

30. Lombard, J., Development of Small Enterprises in Latin America. Paris, O.E.C.D., Development Centre, 1970, 30 p.

Report on a mission to Latin America carried out between 17th October and 24th December 1969 to: 1. study regional projects concerning small and medium-sized enterprises (S.M.B.s); 2. determine the importance which the public authorities in the countries visited (Brazil, Uruguay, Argentina, Chile, Peru, Ecuador, Columbia, and Venezuela) and the major international organizations attach to S.M.B.s as a means for developing the Latin American economy and study the progress of aid programs for S.M.B.s; 3. determine the value of modern techniques of collective action as a means of improving the situation of small firms.

31. General Convention on Small and Medium Industries and Alumni Homecoming
Institute for Small Scale Industries, Quezon City, 1969, 61 p.

Working papers compiled by the Institute for Small-scale industries for the University of the Philippines for the General Convention on Small and Medium Industries (24th - 25th January, 1969). They cover: management training; studies, research and technical information; productivity and industrial advisory services; industrial estates and regional development; financial aid; the steps taken by the Government as part of its development policy.

32. La pequena industria en Mexico
E.C.L.A., October 1966, 68 p., (ST/ECLA/Conf. 25/L.19)

Following a brief summary of the political and economic history of Mexico since the beginning of the Revolution (1910) this document studies: 1. the characteristics of small and medium-sized industries, their importance in the Mexican economy, and the advantages and inconveniences of this type of enterprise; 2. the structure and results obtained from running the 3,200 firms in the manufacturing industry; size, activities, turnover and profits, employment, selling policy and stocks; 3. the financing of S.M.B.s, and the activities of the Guarantee and Credit Fund for small and medium-sized industry.

33. La pequena industria en Panama
E.C.L.A., November 1966, 37 p., tab., ron.
(ST/ECLA /Conf.25/L.22)

Study of the small-scale and craft industries in the Republic of Panama; following an analysis of the changes in the structure of the industry, of the institutions for promoting their development and of the national program for social and economic development (1963-1970), the document examines the size of smallscale industry and the trends represented by its development; technical assistance and information services (industrial estates, cooperatives and groupings, education in the industrial sector); the financing of small-scale industry; international cooperation and technical assistance given by the I.L.O. and the United Nations Special Fund; the National Department for Craft and Small-Scale Industries (SENAPI), its functions, its activities, and the results already obtained.

34. La pequena y mediana industria en Colombia
E.C.L.A., November 1966, 79 p., tab.,
(ST/ECLA/ Conf. 25/L.23)

Study of the importance of the small and medium-scale industries sector in Columbia, based on the results of the first general census on Industry (1953) and of the censuses carried out regularly since 1956. There are four parts: analysis of recent trends in the development of small-scale industry; a description of some large groups of industries;

35. La pequena industria en Bolivia
E.C.L.A., November 1966, 30 p.,
(ST/ECLA /Conf.25/L.24)*

This document, prepared by the Ministry of the Economy and the National Secretariat for planning, examines the importance of small-scale industries in Bolivia, their development trends, the programs drawn up to develop them, especially those applied since 1960, the regulations covering the promotion and protection of small-scale industry, the objectives of the Industrial Plan, and also the organizations responsible for implementing the development plan. It also examines the numerous forms of technical assistance, of financing for the development of small-scale industry, and international cooperation provided by international organizations and some governments.

36. La pequena industria en el Peru
E.C.L.A., November 1966, 29 p.
(ST/ECLA /Conf. 25/L.25)*

Analysis of the economic importance of small-scale industry in Peru; plans and programs drawn up to develop it; assistance, technical services and special programs for vocational training; industrial estates and cooperative structures; policies for financing small-scale industry; international cooperation in the technical and financial field. This paper was compiled by the Industrial Bank of Peru and the National Institute for the Promotion of Industry.

37. La pequena industria en la Republica Dominicana
E.C.L.A., November 1966, 22 p.
(ST/ECLA /Conf. 25/L.28)*

After describing the recent trends that can be detected in the development of small-scale industry in the Dominican Republic, this document analyses the plans and programs drawn up to develop it, vocational training of labor, and the courses, using accelerated training methods, organized by the Federation for industrial expansion; it also examines the present structure of cooperatives and the plan for establishing an industrial estate at Santo Domingo and a development and credit institute. The document also includes a brief analysis of the financing of small-scale industry and of international cooperation.

38. Seminario sobre la pequena industria en America Latina
Quito, November-December 1966.*

Report on the Seminar of Small-Scale Industry in Latin America, organized by the Economic Commission for Latin America, the United Nations Centre for Industrial Development, and the Organization for Technical Assistance, with the collaboration of the Government of Ecuador, held in Quito from 28th November - 5th December, 1966. The aim of the Symposium was to study the contribution made by small-scale industry to the development of Latin America, and also to problems involved in technical assistance, financing and cooperation, both at regional and international level, in order to encourage small-scale industry. (Document E/CN. 12/763, 11th April, 1967, distributed by the Economic Commission for Latin America, gives a summary of the debates and work of the symposium.

39. Kovacevic Vicente, Situation de la Pequena industria en America Latina O.A.S., 9 pages (in-pro)*

Summary of a talk on the present position of small-scale industry in Latin America. In order to simplify the analysis, the countries were divided into three groups, depending on the percentage of G.N.P. coming from small-scale industry: 1. Argentina, Brazil and Mexico (80 percent of G.N.P.); 2. Columbia, Peru, Venezuela, Uruguay and Chile (16 percent) and 3. Bolivia, Ecuador, Haiti, Panama, and Paraguay (4 percent).

40. Analytic report on the problems and policies relating to small and medium-sized businesses (S.M.B.s), O.E.C.D. Industry Committee, Paris, 1971, 57 pages *

Analytic report on the problems facing small and medium-sized businesses in various national contexts and the policies adopted in order to overcome them.

In the Annex there is a definition of S.M.B.s, a description of their present situation and apparent trends in the economy as a whole (statistical tables), and the text of the amendments requested by the United Kingdom.

41. Nota sobre la cooperacion internacional para el desarcio de la pequena industria en America Latina, E.C.L.A., December 1967, 19 pages (ST/ECLA/Conf.29/L.5)*

This document was presented at the "Reunion sobre los problemas de la integracion regional de los paises de menor desarrolo economico relativo" organized by the Economic Commission for Latin America in Guatemala (23rd - 28th October, 1967); it examines the proposals for setting up a regional organization for institute for small industries in Latin America and includes general observations on the definition of small industry and the characteristics of small firms. It also sets out a research and project study program which could be implemented by the institute.

III. FINANCE

42. Lopez, Juan C., Recommendations for the Establishment of a Supervised Credit System for Small Industries and Artisan in Ecuador. International Development Services, Inc., 1966, 75 pages, (AID Ref. Lib. Call#E.C. 332.742 I 61.)

This report evaluates existing development credit lines in Ecuador, but the bulk of the report deals with a suggested format for a Credit Manual. The credit manual includes blank formats of various important documents for loan processing and loan administration purposes.

43. Davenport, R.W. and Duncan, P. A Regional Program for Channeling Development Financing to Small and Medium Industry, A report to the Instituto Nacional de Promocion Industrial, Lima, Peru, 1964. 60 pages, (AID Ref. Lib. Call #P.E. 332.742 D 247)

This report outlines the financial services of existing institutions in Peru and recommends institutional changes in order to meet program requirements. The recommendations cover many areas: credit policy, criteria for lending, credit supervision, promotion and incentives. A useful publication to have as background material for the rural enterprises program in Guatemala.

44. Survey of the Institutional and Financial Requirements of Medium and Small Industry in Mexico. Arthur D. Little, Inc., March, 1963, 64 pages (including 30 pages of Annexes) (AID Ref. Lib. Call #MX 338.7 L778)

This report prepared for the Mexican Productivity Center is a general survey based on a nation-wide study of the financial, managerial, marketing, and employment conditions in the small and medium-sized industry sector of the Mexican economy. It includes recommendations for program changes to the Fundo de Gurantia y Fomento a la Indsutria Mediana and Pequena. It also includes measures to provide T.A. to small and medium-sized industry.

45. Financing the Development of Small-Scale Industries, IBRD International Development Association and Swedish International Development Authority. Bank staff working paper No. 191, 1974, 41 pages. (copy on file)

This report deals with the principle issues that arise in lending to small-scale industries. The research team that prepared the report carried out surveys of small-scale industry financing and related programs in eight developing countries (Columbia, Guyano, Iran, Korea, Trinidad and Tobogo). Included are discussions on definition and contributions of small-scale industries. The essential elements of small-scale industry promotion programs, the provision of technical/managerial services and related arrangements such as industrial estates, cooperatives, and linkages with large-scale industries.

46. Spiro, Benjamin P., Financiacion de la pequena industria por los bancos commerciales: politicas y medidas. UNIDO, 1st July, 1970, 50 p. (ID/WG. 65/8)

This document analyses: 1. financial and commercial structures in developing countries: public, private and mixed-type banks; 2. the general policy for loans to small-scale industry practiced by banks of commerce; 3. the official policy for commercial credit to small-scale industry carried out in Chile, Brazil, Mexico, Columbia, Urugay, West Africa and India; 4. techniques likely to increase the volume of credit given to small-scale industry; the means and measures for increasing commercial bank capital intended for loans to small-scale industry.

Lorenzo, Fernado. Financiacion a las industrias familiares y de artesania en Costa Rica. UNIDO, 9th October, 1970, 14 pages, (ID/WG. 65/15)

Study of solutions to problems of financing the cottage and craft industries in Costa Rica: the law for the economic protection of small-scale industry (9th November, 1959); activities of the bank of Costa Rica and forms of credit given to small-scale, cottage and craft industries. In the Annex, there is a Regulation on bank credits for promoting cottage and craft industries, passed on 8th July, 1960.

48. Los servicios de extension y la financiacion del desarrollo de la pequena industria: analisis comparativo internacional. UNIDO, Ist July, 1970, 61 pages.

Analytic note on industrial advisory services and their activities in financing small-scale industry; following a study of the sources and methods of financing small-scale industry (banks of commerce, specialist institutions, guarantee systems and credit conditions), the analysis moves on to the contribution made by operations (choice, drawing up and implementation of projects) and the problem of financing the services so that they may usefully intervene in the business and contribute to its modernization.

49. Francia Garcia, Sabas, Financiamiento a la industria pequena en los paises en desarrollo: el caso de America Latina. (Argentina, Brasil Chile, Columbia, Mexico y Venezuela), UNIDO, Ist July, 1970, 78 pages, tab., bibliogr., ron. (ID/WG 65/2)

Study of the financing of small-scale industry in six Latin American countries: Argentina, Brazil, Chile, Columbia, Mexico and Venezuela. The document examines: 1. the institutional measures to encourage small-scale industry, general financing policy and the origin of the capital resources controlled by the credit institutions; 2. the systems, mechanisms and conditions of credit. It includes an analysis of the results of the operations carried out in Mexico and a bibliography, classified by country.

50. Spiro, Jean-Marc, Development Banks and Loans for Small Producers in Black Africa and in South America, Geneva, Librairie Droz, 1966, 154 pages. *

Study of the methods used by institutions using credit as a means of accelerating economic development. Because of the various geographical, sociological, economic and political differences between developing countries, a study of this kind can only be carried out in countries which are sufficiently similar for comparison to be possible; these could be, for example, the African countries south of the Sahara, and the Latin American countries south of the Isthmus of Panama.

After examining the functions and legal aspects of the development banks, this publication analyses their different forms of action: commercial activities, company holdings, loans or current account credit; the management problems of development banks and also their methods of action: financial resources, organization, procedures for granting loans, control and technical assistance; the publication includes an extensive bibliography.

51. 15 Anos del Fondo de Garantia y fomento a la Industria Mediana y pequena in: El Mercado del Valores Mexico, n. 40, 6th October, 1969, p. 653-654, 657-660, tab. *

Account of the fifteen years of activity of the Credit and Guarantee Fund for small and medium-sized firms. It is a trust financing body for the Federal Government of Mexico: total amount of loans given; forms of credit and redemption; analysis of the industries involved, classified by branch.

52. Credit and Financing Facilities for Small Industries in: Small Industry Bulletin for Asia and the Far East, New York, ECAFE, n.3, 1964, p.1-64.

The introductory note by the ECAFE Secretariat reveals the lack of financial resources for small industries and their difficulty in acquiring capital and credit. The analysis made in the articles shows that there are three types of credit available to small industries: direct credit, indirect credit (financial assistance or governmental measures) and financing organizations set up by certain governments for the benefit of small industry.

Contents:

- Credit and Financing Facilities for Small Industries in Australia.
- Financing of Small-scale Industries in India.
- The Role of Small Industries Service Institutes in India as Technical Consultants to Financing Institutions.
- Present Status of Credit Insurance for Small Business in Japan.
- A New Approach to Small Industries Financing.
- Problems of Financing Small Industry.
- Credit and Financing Facilities for Small Industries in the Philippines.
- Financing Small-scale and Cottage Industries in the Philippines.
- Philippine Rural Banking and Small Industries.
- Loans for the Development of Small-scale Industries in Thailand.
- Credit and Financing Facilities for Small Industries.
- Government Assistance in the Financing and Management of Small Industries in the United Kingdom.
- Small Business in the United States.

53. Davenport, R.W., Financing the Small Manufacturer in Developing Countries New York, McGraw-Hill Book Co. , 1967, 385 pages, tab.

This publication is based on: 1. Research carried out by the author on the one hand, and in the developing countries of South East Asia and Latin America on the other hand, between 1961 - 1964, and 2. The study of programs for financing small-scale industry that have proved successful in industrialized countries. The publication deals with the financial problems of small-scale industry only and does not include craft industries which do not usually have access to bank loans; it envisages the financing of small-scale industry as one aspect of a complex problem and stresses the necessity of making financial measures part of a series of measures aimed at promoting the establishment or modernization of small industrial firms.

54. Stelin, Bernhard, Programas globales de fomento para la pequena industria en America Latina - Criterios gneerales, instituciones medidas y prioricades, E.C.L.A., 5th October, 1966, 55 pages, (ST/ECLA/Conf.. 25/L.8)*

Analysis of the general credit programs for small-scale industry in Latin America; the criteria and goals of a credit policy; the institutions responsible for carrying out the policy, and for orientation and coordination; means of action and priorities, analysed by sector and by region.

55. Technical Cooperation for the Development of Small-Scale Industries, E.C.L.A., 30th September, 1966, 57 pages, ron., (ST/ECLA/Conf. 25/L.30)*

Compiled by the Centre for Industrial Development, this document sets out the organization and methods of the technical and financial assistance provided for governments by the United Nations. It also gives a list of the various projects intended for small-scale industry.

IV. TECHNICAL ASSISTANCE AND TRAINING

56. Asistencia a Organizaciones Campesinas de Segundo Grado. Inter-American Foundation Project Paper, 1975, 75 pages, (copy on file)

This project paper deals with an IAF project in Chile with the Instituto de Romocion Agnoiea (INPRUA). It is a technical assistance project to 14 regional cooperatives in production and marketing. It includes some unusual features in project design such as: the "BID-FAO method" for calculating cost and manpower requirements for technical assistance projects. It also includes an evaluation of the program two years after it started. The evaluation points out the weak and the strong points of the program and recommends modification.

57. Technical Services and Facilities for the Promotion and Modernization of Small Industries in: Small Industry Bulletin for Asia and the Far East. New York, ECAFE, n.5, 1967, p. 1-136. *

Several different articles are grouped together under this general title and divided into two main themes: 1. the theoretical study of specific services and special plans for surveys, financing, training, industrial studies, standardization, marketing, industrial estates, technical information. 2. The practical study of services and facilities for promoting and modernizing small industry, seen from a world-wide point of view, which function in Ceylon and India, Korea, New Zealand, Pakistan (East), the Philippines, England and Wales. Extensive Bibliography.

58. The Role of Industrial Extension Services in the Promotion of Sub-contracting UNIDO, 17th July, 1969, 13 pages, ron., or. Eng., (ID/WG.41/6-CD/MPE(69)14).

Large firms often doubt the ability of small-scale industries to satisfy their requirements as to quality, tolerances, delivery dates and prices. Small firms should therefore be able to have recourse to technical assistance in order to carry out sub-contracting orders. This assistance, sometimes given by the large firm, is - or should be - given in developing countries by special organizations set up to supply, on demand, or their own initiative, every possible form of support to small industrial plants, at each stage of planning, production and business management. The promotion of sub-contracting should be the responsibility of these organizations which will also act as a sub-contracting exchange.

59. Technical Services and Facilities for Rural Industries, UNIDO, 6th June, 1967, 19 pages plus Annexes, ron. (ID/Conf. 2/16)

This document briefly describes the important role in economic development of small or medium-scale manufacturing industries, which use raw materials from agriculture, forestry and fishing. The majority of the raw materials needed are produced by operators living in "rural areas" but this is not true of them all, particularly those originating from horticulture and agriculture which can be totally used by industry. An exchange of information between producers and manufacturers ought to improve the quality of raw materials. Finally, to accelerate industrial development it would be necessaary, at the pre-investment stage, to set up a large number of pilot factories. Using the experience acquired in this project, other production units could be constructed.

60. Stimulation of Entrepreneurship and Assistance to Small Industrialists at the pre-Investment Stage, UNIDO, April 1967, 44 pages, (ID/Conf.2/B.P.2)

The small number of new firms set up in developing countries is mainly due to a lack of technical knowledge and knowledge of business management. Before the beginning of the investment stage, small entrepreneurs must be given all the necessary information as to the choice of industry, the type of product, the amount of investment needed in fixed capital and in working capital, the size of the firm, the type of equipment, raw materials and production methods that should be chosen, sources of financing and the anticipated turnover, etc. This information will be based on inquiries and studies carried out at national level.

61. Neilson, Alexander, Problems in the Application of Technical Assistance to Small-Scale Industries in Developing Countries, UNIDO, 30th March, 1967, 25 pages, (ID/Conf. 2/5)

Study of some of the problems posed by technical assistance to small-scale industry in developing countries. Manufactors can reduce the efficiency of experts, from the small industrialist's sensitivity to a third party's intervention in his firm to the difficulties experienced in attempting to make small entrepreneurs aware of their needs. The author stresses the need for financial assistance to be linked to technical assistance, so that the recommendations of the experts can be carried out.

Alexander, P.C., Industrial Extension Services for Small-Scale Industries, UNIDO, April, 1967, 24 pages, ron (ID/Conf. 2/B.P.3)

Study of the activities of industrial extension services in developing countries: their role in integrated development programs, the running of the services and the training of their personnel; the methods used by them; their relations with research, industrial estates and the programs specially drawn up to encourage the establishment of new firms.

63. Training and Development of Personnel for Small Industries with Special Reference to Managers, Technicians and Operatives in: Small Industry Bulletin for Asia and the Far East. New York, ECAFE, n.6, 1968, p. 1-78.

This general title covers several articles dealing with the problems of training personnel employed in small industry. The introduction stresses that training

should not be considered as a goal, but rather as an instrument to be used to improve production and costs. The articles study: 1. The training of Managers, Technicians, and Operatives in small industries and 2. Methods of solving training problems in Taiwan, Japan, India, New Zealand, the Philippines and Thailand.

64. Planning, Training Courses by Network Analyses in: Management and Productivity Bullenin, Geneva, I.L.O., n.30, 1969/3, p. 21-35, tab., graph.*

This document was compiled by the Centre for Executive Consultancy and Training in Kampala, Uganda; it describes the use of network analyses for planning training courses organized by the Centre, and proves that it is not difficult to use this method provided that the information being dealt with is fairly simple.

65. Alexander, P.C., Servicios de extension industrial para la pequena industria E.C.L.A., 23rd August, 1966, 26 pages, ron., or. English (ST/ECLA/Conf. 25/L.3)*

Study of the policy of industrial extension services in developing countries; extension institutions and methods; transfer of knowledge and experience; analysis of the working of industrial extension services in Japan, Italy and India.

66. Eisenloeffel, Arend, Un Centro para el desarrollo de la pequena industria en America Latina, E.C.L.A., November, 1966, 23 pages, (ST/ECLA/Conf. 25/L.21)*

Study of the numerous advantages to be gained by establishing a centre for the development of small-scale industry in Latin America. It is based on a comparison with experiments already tried out in other countries: R.V.B. in Delft (Netherlands), S.R.I. in Stanford (United States), S.I.E.T. in Hyderabad (India), A.P.O. in Tokoyo. The document also contains an analysis of the various conditions which must be fulfilled by the town and country chosen in order to have the centre established there, an organizational chart and budget, and the methods for implementing the plan.

At the end of the document there is a short expose of the programs contained in international course organized by the R.V.B. for small-scale industry.

V. BIBLIOGRAPHIES

67. Small and Medium Industry Development. Agency for International Development Bibliography Series. Science and Technology No. 1. 1974, 131 pages (Copy on file)

This bibliography includes 433 listings on the topic of small and medium-size industry development. The listings include topics such as: evaluation project appraisal, feasibility studies, investment promotions and private enterprise. This bibliography is an excellent source of identification for additional published material that can be obtained for the Guatemala project if it becomes necessary throughout the research and analysis period of the project.

68. Appropriate Technology in Social Context: An Annotated Bibliography. Agency for International Development, 1977. 33 pages (Copy on file)

This bibliography contains 180 listings of publications dealing with the topic of appropriate technology and its effect on a social context. It includes topics such as Village-based programs, sources of technical information, and case studies. This bibliography could be valuable if the intermediate technology issue becomes apparent in the design of the loan program in Guatemala.