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**CAPITAL ACCUMULATION AND DEVELOPMENT
OF SHEEP-PRODUCTION COOPERATIVES:
A CASE STUDY OF SAIS RAMON CASTILLA**

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PREFACE

This paper summarizes the second part of an M.S. thesis, A comparative analysis of capital accumulation in two Peruvian sheep associative enterprises: Factors enhancing and restricting their development. This thesis was a comparative study examining the two major types of cooperative units established during the 1969 Agrarian Reform. A previous paper (C. Valdivia, Factors affecting the process of capital accumulation in Peruvian sheep producer cooperatives: A case study of CAP El Diezmo Palcan, SR-CRSP Technical Report No. 52) examined four variables -- capital accumulation, income generation, participation, and identification -- as they related to the Agrarian Production Cooperative (CAP) type of organization. In the report presented below, these four variables are analyzed for the other major type of cooperative organization formed during the land reform -- the Agrarian Society of Social Interest (SAIS). A case study of one such SAIS, Ramon Castilla, is used to compare these variables with the CAP form of organization. The objective of the study was to determine the most suitable form of cooperative organization structure for pastoral sheep-production units. The differences between a CAP and SAIS are set out in this paper.

A 1980 study analyzed the period between 1971 and 1979. Data were collected with support from the economics subproject of the Small Ruminant Collaborative Research Support Program (SR-CRSP), with the help of field assistants Martha Cruces, Jose Gols, and Luis Peralta, students at the National Agrarian University (UNA). Secondary data based on previous UNA thesis studies were used for the analysis of pastures and production.

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ABSTRACT

This study focused on the biological and socioeconomic factors that were critical to the process of capital accumulation and income generation of the Agrarian Society of Social Interest (SAIS) Ramon Castilla and its members. Capital accumulation, income generation, participation, and identification were analyzed. The high number of families assigned to SAIS Ramon Castilla and the need to accumulate capital in order to compete in the market had a direct effect on overstocking and overgrazing of pasturelands. Due to the large numbers of families associated with the SAIS and the limited opportunities for full-time employment in SAIS livestock enterprises, the families relied on cropping activities, huaccho animals, and seasonal employment by the SAIS to generate income. Therefore the members of the SAIS did not strongly identify with the SAIS, and the development division of the SAIS had no funds to invest on behalf of the members.

Key words: sheep, cooperatives, Andes, peasants, capitalization, participation, identification.

INTRODUCTION

The 1968 military government in Peru instituted major land reforms leading to the creation of agrarian cooperatives. The two major cooperative organizations that exist in Peru (Martinez, 1983), operating in the Peruvian highlands, are Agrarian Production Cooperatives (Cooperativas Agrarias de Produccion or CAP) and Agrarian Societies of Social Interest (Sociedades Agrarias de Interes Social or SAIS).

These two forms of production¹ have characteristics that make them different and that relate mainly to the type of members that they have. The CAP is owned by the members -- individuals that are at the same time fully employed workers. They receive wages and at the end of the production year they also receive profits that are distributed directly to them as individuals.

The SAIS is also a cooperative, but is in this case owned by organizations. These organizations are:

1. The service cooperative owned by the former workers of the haciendas (which have been transformed into production units of the SAIS). These former hacienda workers now depend on the SAIS's ability to hire them. They receive wages as individuals while the profits are given to the service cooperative for its development.
2. The peasant communities, formed by the comuneros (peasants) that surround the SAIS or have had claims to the lands of the hacienda, who receive profits and technical and social assistance through the SAIS's development division.

Both the SAIS and the CAP have to allocate part of their surplus to the cooperative funds that are used for reserve, investment and reinvestment, education, cooperative development, and social services. The first two are called capitalization funds because they can be used to increase investment while the rest are called social funds because they should be used to improve the members' standard of living.

Both organizations are called capitalist forms of production because in order to survive they must stress the process of capitalistic development, which means that capitalization will take place and the workers will depend mainly on the wages paid by the cooperative, SAIS or CAP, as their source of income. So both the decision to reinvest the surplus and proletarianization must take place.

There were 60,954 peasant families that benefited from the land reform by becoming part of the SAIS structure (Matos Mar and Mejia, 1980b, p. 182). This included not only the former workers of the haciendas, but also the families of the peasant communities that became members of an SAIS (that is, they essentially became stockholders who received profits and technical assistance from the SAISs).

During the land-reform period, the livestock were also expropriated. A total of 1,699,344 sheep, 255,357 cattle, and 251,575 cameloids were expropriated by the agrarian reform. Of these animals, 97.5% were given to the various cooperative production units (Matos Mar and Mejia, 1980b, p. 182).

During this process, SAIS Ramon Castilla was organized. This SAIS, founded in 1971, is located in the Central Sierra of Peru, Department of Junin, between 3,700 m and 4,000 m above sea level. The cooperative comprises 28,643 ha, of which 22,725 ha are suitable for grazing, with a carrying capacity averaging 0.76 standard sheep units per hectare per year. About 16% of the land is also suitable for potato cultivation. The SAIS has four production units: Cachi-Cachi, Ayas, Casa Blanca, and San Jose.

The members of SAIS Ramon Castilla are two peasant communities (Pomacancha and Tarmatambo) and the Service Cooperative Jose Olaya, which was formed by the feudatarios (former workers of the hacienda) of the expropriated haciendas. A total of 740 families were involved in the formation of this SAIS, including all the members of the service cooperative and the peasant families that crop and raise sheep and cattle. Only

comuneros related to agricultural activities are considered beneficiaries and counted for profit-distribution purposes.

The objectives of the SAIS organizations in Peru are 1) to form a socio-economic organization that will promote the development and welfare of its members; 2) to increase production and productivity; 3) to promote marketing and industrialization of production; 4) to use more efficiently the means of production; and 5) to contribute to local, regional, and national development.

Members of an SAIS in Peru relate to it in many ways. The service cooperative supplies the labor force for production. There are two types of workers: those fully employed by the SAIS who rely on wages as their main source of income, and the seasonal workers who help during the peak periods of demand, such as lambing, shearing, and cropping.

As former workers of the haciendas, the members of the service cooperative have no private lands. This makes the SAIS responsible for providing the crop- and pasturelands that allow them to survive. That is why each partially employed member of the service cooperative receives 1 ha of cropland and has access, along with all other members, to 4,000 ha of pasturelands. Some SAISs, Ramon Castilla included, have had to revert to pre-land-reform practices for all the feudatarios to survive because they were unable to employ everyone available to the SAIS.² At the same time the fully employed workers of SAIS Ramon Castilla are also allowed to graze four cows on SAIS pastures to supply them with milk and cheese.

There are two rural settlements (Tajana and Paccha) within the boundaries of the SAIS where the members of the service cooperative can have their huaccho animals,³ and two units of production (Ayas and Quishuarcancha)⁴ where the workers can also have their huaccho animals in predetermined areas.

The peasant communities that are members of SAIS Ramon Castilla receive profits at the end of the production year, which goes from April to March. Another channel through which the members benefit is the development division of the SAIS, which must provide them with technical assistance. The peasant communities do not have to give anything in return to become members of the SAIS and to receive SAIS profits.

Although this SAIS was created in 1971, the study could not cover 1971 and 1972 because no records were kept during those years. The monetary unit that has been used is the sol, which is converted to real or constant-value terms using 1973 as the base.

As in our study of CAP Diezmo Palcan (Valdivia, 1985), four variables were analyzed to define the process of capital accumulation and capitalistic development of the SAIS. These variables are 1) the productive base and the process of accumulation of capital goods and funds, 2) the generation of income for the people involved in the SAIS, 3) the degree of involvement of all the members in the SAIS to define the actual levels of participation reached, and 4) the process of identification⁵ that determines the levels of capitalistic development of the cooperative.

CAPITAL ACCUMULATION

Three specifications were considered for analyzing capital accumulation. First the productive base, which includes all the resources involved in the production process, was estimated. Second, all the capital goods and capital fund savings were calculated to determine the amounts that the SAIS was able to accumulate from its creation to 1979. Finally, comparisons between the levels of capital accumulation and wages, cooperative funds, agrarian debt payments, and profits distributed to the members were made to determine the resolution of conflicts inherent in distributing the annual operating surplus of the SAIS.

The Productive Base

Four factors of production were considered in this analysis: the pasturelands, available labor, kinds and amount of livestock (mainly sheep and some cattle), and capital assets of the SAIS.

Pastures. The SAIS received 28,643 ha through the agrarian reform, of which 22,725 ha are suitable for grazing, with an average carrying capacity of 17,240 sheep per year (appendix table 1). As can be seen in table 1, the stocking rate has been greater than the carrying capacity of the grazing lands in all the years of the study. Data for cattle were not available for 1973, 1978, and 1979, which indicates that the stocking rate is greater than the amounts in the table. This affects the production of this natural resource that is the main food source for sheep production in the Peruvian Highlands. Four sheep died in 1979 from eating garbancillo (*astragalus*), a plant that is present in overgrazed pastures.

Table 1. SAIS Ramon Castilla: Changes in the factors of production, 1973 to 1979.

Year	Total livestock	Stocking rate ^a	Animal resource index	Labor	Breeding stock
1973	24,142 ^b	140	100	100	100
1974	28,287	164	117	142	105
1975	27,807	161	115	208	94
1976	25,533	148	108	176	88
1977	26,817	156	111	182	94
1978	23,687 ^b	137	98	198	87
1979	24,861 ^b	144	103	314	--

Source: Gandolfo (1980, p. 49), Valdivia (1983, pp. 144, 145), Sotelo (1981, p. 159).

^aBased on estimated maximum carrying capacity of 17,241 standard sheep units/year (Sotelo, 1981, p. 156).

^bDoes not include cattle.

Labor. Crop and sheep production are the main sources of employment in the SAIS. While livestock production uses primarily the fully or

permanently employed workers, cropping demands mainly seasonal labor. Crop production plays a major role by providing much-needed work -- sheep production demands constant and low amounts of labor that increase only for 2 months of the year during lambing and shearing. Although cropping employment is seasonal, it plays an important role in the income of peasant families by providing cash wages or wages in-kind (Figueroa, 1980). It should be noted that crop production, rather than being a highly profitable activity, mainly provides employment for temporary workers and members of the service cooperative.

Trends in employment and SAIS income are shown in appendix table 2. Only 10% of the income in 1974 came from agricultural products. In 1978 this increased to 23%, but sheep production remains the main source of income and employment.

Table 1 shows that there was an increase in labor absorption, particularly during the last years of the study. Both permanent and temporary workers were added. Appendix table 3 shows that the demand for labor for livestock production doubled from 1973 to 1979, while the cropping activities also required greater amounts of labor. This demand increased seven times over the same period of analysis, while the SAIS's income from agricultural products increased five times.

Animals. As can be seen in table 1, sheep production stabilized at more than the apparent carrying capacity. The SAIS had some cattle, mainly for cheese production. From 1974 to 1977 the number of cattle increased from 676 head to 925 head (Valdivia, 1983, p. 145). This is around 3% to 4% of the sheep that the SAIS carries. Appendix table 4 shows that between 1974 and 1979 the death rate of sheep increased from 6.4% to 9.6%. For the same period, wool production first fell and then slightly recovered in the last year. Wool productivity also fell slightly from 6.35 lb/sheep in 1974 to 6.03 lb/sheep in 1979.

Capital assets. Table 2 shows the change in capital assets. Four groups of assets were considered: machinery, infrastructure, vehicles, and sheep breeding herd. A main problem in this case was the use of the government-established accounting values for valuation of the breeding herd. These accounting values remained constant throughout the study years. This problem was overcome by using the agricultural price index to determine an approximate real value for the herd since market prices for these animals could not be determined.

Table 2. SAIS Ramon Castilla: Change in the real^a value of capital assets, 1973 to 1979 (base year: 1971 = 100).

Year	Machinery	Infra-structure	Vehicle	Breeding stock	Breeding stock (adjusted)
1973	100	100	100	100	100
1974	274	100	239	107	144
1975	303	135	179	86	124
1976	266	89	199	64	144
1977	182	86	152	42	168
1978	211	99	91	35	139
1979	179	82	131	19	125

Source: Valdivia (1983).

^aConstant 1973 soles.

Table 2 shows the real value of machinery increasing up to 1975, with a downward trend since then. Infrastructure, including roads, buildings, and fencing, showed a downward trend and in 1979 its value was 82% of the 1973 value. The trend of vehicle value was similar to that of machinery and was 31% higher in the last year than in 1973. If the value assigned by the government is used to determine trends in the capital value of the breeding herd, there was a constant decline in this asset to only 19% of the original value. This is not realistic because the number of animals actually increased and the market values did not remain constant. When values were adjusted to the estimated real values, this trend behaved like the machinery and vehicle trends. The

loss in value of these assets was due mainly to the inflation that started upward beginning in 1975.

Table 3 shows that the value of net capital assets increased 23% from 1973 to 1979, although the tendency was first to increase in 1974 and 1977 and then to decrease.

Table 3. SAIS Ramon Castilla: Change of real total capital, 1973 to 1979 (thousands of soles).

Year	Net capital assets ^a	Index	Gross saving	Index	Capitalization funds ^b	Index	Total capital	Index
1973	9,412.0	100.0	418.9	100.0	1,553.8	100.0	11,384.6	100.0
1974	14,275.1	151.67	758.8	181.14	3,000.1	193.55	18,034.0	158.41
1975	12,677.2	134.69	1,302.6	310.96	5,277.8	340.00	19,257.5	169.15
1976	13,849.8	147.15	1,767.3	421.89	5,468.6	352.26	21,085.8	185.21
1977	15,045.5	159.85	2,189.1	522.58	4,212.0	271.61	21,446.5	188.38
1978	12,553.0	133.37	1,818.2	434.04	2,938.3	189.03	17,309.6	152.04
1979	11,622.9	123.49	2,012.0	480.31	1,819.0	116.77	15,453.9	135.74

Source: Valdivia (1983).

^aIncludes adjusted values for breeding herd.

^bIncludes cooperative funds for capitalization and surplus for capitalization.

Change in Capital Assets and Capital Fund Savings

As has already been shown, the real capital assets of the SAIS tended to gradually increase. Other ways of accumulating capital for the SAIS are the depreciation fund and the accumulated social benefits (e.g., retirement and medical benefit funds) that can be invested while the money is not needed. These are called the gross savings, which increased to 4.8 times the 1973 value. The cooperative capital accumulation funds, which include the reserve, investment, and reinvestment funds, are also part of the overall SAIS capital assets. These come from the distribution of the surplus at the end of the production year and must be accumulated in amounts decided by the General Assembly of the SAIS.

The cooperative capitalization funds increased from 1973 to 1976 but decreased since then. By 1979 the value was only 17% higher than the 1973 value.

Using the overall measure of total capital assets that includes physical assets, gross savings, and cooperative capitalization funds, the SAIS was able to increase its capital value by 35% in 1979. In 1977, however, the level of accumulation was 88% higher than the original value. This amount could not be kept even though the government encouraged capital investments in 1978 and 1979 through tax exemptions.

Comparisons

Conflicts between the accumulation of total capital and the change in wages. Table 4 shows the trend in both capital assets and wages. Two measures of wages were considered -- the individual wage received by the fully employed worker and the total amount of wages paid by the enterprise.

Table 4. SAIS Ramon Castilla: Indices of change in real capital and wages, 1973 to 1979 (index, 1973 = 100).

Year	Total capital	Individual wage	Total wages paid
1973	100	100	100
1974	158	160	125
1975	169	148	159
1976	185	143	143
1977	188	116	171
1978	152	105	183
1979	136	71	119

Source: Valdivia (1983).

As already seen, the total capital increased by 36% between 1973 and 1979. In the same period the individual real wage decreased 29% although for 1978 it was still 5% over the original wage. The same

happened with the total amount paid. There was an increase in the demand for labor that was reflected in an increase of total wages paid only until 1978, but a sharp drop in 1979 reduced the increase to only 19% higher than in the first year. Since there was an increase in total labor used, this shows the loss in purchasing power of the members on a per capita basis.

Conflicts between the cooperative funds for capitalization and the cooperative social funds. Table 5 shows how the distribution of the surplus is allocated between the different cooperative funds according to uses to which these funds are put. The Agrarian Law, which created the cooperatives (including the SAISs), designated funds that should be used for investments in the enterprise (capitalization) and the development of the people (social objectives). The amounts to be distributed were decided by the General Assembly of the SAIS, in which delegates of the peasant communities (20 delegates) and of the service cooperative (10 delegates) participated. The government gave the maximum and minimum range within which the distribution could be made.

Table 5. SAIS Ramon Castilla: Conflicts between capital accumulation and profits, cooperative social funds, and agrarian debt payments (ratios).^a

Year	Ratio of cooperative funds capitalization/surplus distribution	Ratio of cooperative funds capitalization/social cooperative funds	Ratio of cooperative funds capitalization/agrarian debt payments
1973	2.3	2.1	--
1974	2.5	2.9	--
1975	3.2	3.5	--
1976	2.6	2.9	--
1977	2.6	2.9	--
1978	1.7	.9	1.78 ^b
1979	6.9	11.6	3.3

Source: Valdivia (1983).

^aIf greater than 1, capitalization is being favored.

^bThe payments were made with surplus funds accumulated up to that year.

The ratio of capitalization to social-cooperative funds was fairly steady through 1978, with the ratio favoring capitalization by 2 to 3. In 1979, when the government promoted an open policy to favor capitalization, this ratio increased to 11.6:1. The decision to encourage higher levels of capitalization was implemented by granting tax exemptions on profits that were reinvested.

Conflicts between the cooperative funds for capitalization and the distribution of the surplus. SAIS Ramon Castilla distributed the maximum amount allowed by the government to the members and had to capitalize 25% of these profits. The profits could only be used for development projects of the communities and of the service cooperative. The 25% ratio favored cooperative capitalization funds that were almost seven times greater than the profits distributed in 1979. An important aspect that will be discussed in the section on identification is that the members received profits as their only benefit from the SAIS. This was the only way in which the SAIS could assist its members because the development division was not functioning.

Conflicts between the cooperative funds for capitalization and the payment of the agrarian debt. There was a grace period of 5 years before payments on the debt started. In 1978 the ratio of funds invested to funds used for debt repayment was almost 2 to 1 in favor of capitalization, although in that year the payment came from savings made during the previous years. In 1979 the above ratio was 3 to 1 in favor of capital accumulation. This was 11.9% of the surplus in that year.

The analysis shows a tendency to favor capital investment in the SAIS although distribution of the profits has not been set aside. The SAIS members reinvested the minimum amount possible of the profits established by the government (25% of the surplus) and distributed the maximum possible to themselves as profits. This will be analyzed through the next variable, income generation.

INCOME GENERATION

Many different groups of people work for SAIS Ramon Castilla and so different types of income are generated by them. The first group comprises permanent workers fully employed by the SAIS that may or may not be members of the service cooperative. The second group consists of seasonal workers that are not fully employed and so can supply part of the family income by selling their labor to the SAIS. They are usually members of the service cooperative. Last, there are the members of the two peasant communities and the service cooperative who receive the distributed profits and technological assistance through the development division.

Wages

The SAIS was only able to permanently employ 82 workers in 1979, which represented around 11% of the peasants benefited through the peasant communities and the service cooperative. About 30% of the former workers of the hacienda are now members of the service cooperative. As table 6 shows, the annual income from wages was about constant in real terms over the study period. Purchasing power was lost in real terms only in 1974 and 1978 (with respect to 1973). In the other years there was a slight increase, which started to disappear with inflation. For all the years studied the minimum wage established by the government was below the wages paid by the enterprise. As already seen, livestock was the main production activity and demanded almost two times the quantity of labor supplied to crops (appendix table 3).

In terms of seasonal labor needs, crop production required more labor than livestock production due to the characteristics of the production process. Appendix table 5 shows wages paid to the seasonal labor force in monetary terms from 1975 to 1979. This increased, mainly in the last years, to between 11 and 12 times the amount needed for sheep production.

Table 6. SAIS Ramon Castilla: Sources of income, 1973 through 1978 (real soles).^a

Year	Annual wage (real soles)	Annual seasonal wage ^b (current soles)	Percentage of the total seasonal labor hired that worked all year	Annual seasonal wage (real soles)
1973	17,736	--	--	--
1974	15,172	--	--	--
1975	23,810	9,858	30.0	6,822
1976	22,458	10,709	14.09	5,518
1977	21,630	26,224	42.85	9,848
1978	17,657	40,422	24.25	9,616

^aActual soles deflated by official Consumer Price Index.

^bSeasonal workers that work 12 months.

In terms of total SAIS Ramon Castilla income, that from crop production was relatively unimportant, although this income was especially important to the peasant families (Figuerola, 1980) in terms of seasonal employment earnings. Table 6 also shows the amount of income that the workers received if they were able to work all year as seasonal workers. In 1975 for instance, only 30% of these workers were able to work all year for the SAIS. Appendix table 6 shows the percentage of the total amount of wages paid to seasonal workers according to the minimum or maximum number of months worked for the SAIS. This also shows the number of workers that received these wages and the maximum number of workers hired in the month. One assumption was made: If possible, the same worker would be hired all year while additional workers would be hired when necessary.

Profits and the Development Division

The profits were the main benefit to members of the SAIS. These were used mainly for development projects for the two peasant communities and the service cooperative. As table 7 shows, the real profits doubled in 1974 and then decreased constantly to become 5% of the total amount that

was distributed in 1973. The relation between the profits distributed to each member and the amount of income a permanent worker received through wages also decreased. After being 15 to almost 20 times the annual wage, distributed profits became almost equal to funds used in development projects to benefit members.

Table 7. SAIS Ramon Castilla: Profits distributed to the members and profits in terms of an annual wage.

Year	Real total profits index	Actual profits per member (soles of 1973)	Index of profits per member/ annual wage
1973	100	236,799	15.6
1974	196	465,476	19.5
1975	106	247,533	11.0
1976	46	105,431	4.8
1977	37	82,790	4.7
1978	40	92,981	5.8
1979	5	13,972	1.3

Source: Valdivia (1983, p. 167).

This point is very important because one of the main objectives of the SAIS form of production was to provide for the development of its members and the region. However, profits were so low that the objective of capital investment in the SAIS was not achieved. This is more serious if we consider that SAIS Ramon Castilla was to be the source of technological transfer through the development division. This has not been the case since 1973 when the division only spent 65,000 soles, which represented only one-fourth the average profits distributed to one member in that same year.

The Huaccho Animals

The hacienda workers used to supplement their wages with the production of huaccho animals, so called because they were owned by the peasants who herded the animals as a group on the hacienda lands. They also used these animals as repayment for any of the hacienda's sheep that were lost while in their care.

Only huaccho cows could be grazed by the shepherds on the lands used by the SAIS. Huaccho sheep could only be grazed in the pastures given by the SAIS to the service cooperative (4,000 ha in the case of Ramon Castilla).

The huaccho animals were more important for the livelihood of the seasonal-worker members of the service cooperative, and of the peasant families of the member communities, than for the permanent workers.

The analysis of CAP Palcan revealed that the workers agreed to separate their huaccho animals from those owned by the CAP. The CAP hired a shepherd to take care of all huaccho animals in marginal lands that it owned. This did not occur in SAIS Ramon Castilla, with the exception of one group of workers on the production unit Quishuarcancha. SAIS Ramon Castilla also had to maintain pre-land-reform relations with the feudatarios (former workers of the hacienda) in order for them to survive. This prevented the SAIS from fully developing capitalistic relations of production between the SAIS and its workers since the SAIS was not capable of employing all available workers for wage labor and had to provide workers cropland and grazing land for huaccho animals so that the workers could survive.

Table 8 shows the average number of huaccho animals that were in the hands of the permanent workers on SAIS land. Not all workers had these animals. The number of huaccho animals decreased, mainly because of regulations enforced by the SAIS.

Table 8. SAIS Ramon Castilla: Average number of huaccho animals per worker on SAIS lands, 1973 to 1979.

Year	Huaccho cattle	Huaccho sheep
1973	13	296
1974	9	10
1975	6	6
1976	--	--
1977	4	4
1978	3	5
1979	4	5

Source: SAIS huaccho accounting data taken for SAIS Ramon Castilla annual reports (various issues).

Data for 1979 explain the income of the peasant families in the area (Saavedra, 1980). Table 9 shows the number of families that each member community had. Table 10 gives the family income from huaccho animals. Most of the seasonal workers were members of the service cooperatives based in two rural settlements. Ayas and San Jose were the units of production where permanent workers lived and where huaccho cows and sheep were allowed. In real terms the total income was below that received by the permanent workers, although crop production was not counted as an income source because it was a minor component.

Table 9. Members of SAIS Ramon Castilla, 1978.

Member community	No. families/community
C. Tamatambo	400
C. Pomacancha	166
Coop. Jose Olaya	199
Total families	765

Table 10. SAIS Ramon Castilla: Huaccho income per family, 1979 (soles).

Production unit	Average income		Average total income	Real average income
	Sheep	Cattle		
21 fam. A. R. Tajana	43,251	54,162	97,413	13,820
20 fam. A. R. Paccha	28,679	56,089	84,768	12,026
9 fam. Ayas	13,930	38,831	52,761	7,485
18 fam. San Jose	10,166	12,990	23,156	3,285
25 fam. Pomacancha	33,143	49,481	82,624	11,722
20 fam. Tamatambo	63,316	28,925	92,241	13,086

Source: Saavedra (1980).

In conclusion, employment levels were the main indicator of SAIS Ramon Castilla's development because of the presence of a pool of seasonal labor that could not be fully employed. In contrast, CAP Diezmo Palcan had a more favorable ratio of resources to workers and was thus able to maintain a full-time labor force so that employment did not vary with economic conditions.

Evolution of Employment

The above discussion concludes that the resource base supporting the level of production and employment in SAIS Ramon Castilla was already being fully used under existing levels of technology. New technology, such as cultivated pastures, will result in increased employment if the SAIS can increase the numbers of sheep carried. Maintaining adequate levels of wage employment is now an important economic aspect of peasant life. Cash wages can represent up to 50% of total family income in many communities associated with SAISs or CAPs (Figueroa, 1981).

Appendix table 7 shows seasonal-labor needs by month and the percentage of additional labor hired. This table indicates the relative importance of seasonal hired labor by the number of months worked.

PARTICIPATION

The analysis of CAP Palcan (Valdivia, 1983) showed that although all members did not fully participate in the decision-making process, partial participation was necessary for members to identify with the cooperative (the process of identification is described in note 5).

An objective of creating the SAIS form of cooperative production was to avoid the destruction of the most-developed haciendas of the highland region. To accomplish this the government decided which haciendas would become SAISs.

Each person had to contribute 5,000 soles to the SAIS to become a member. Members did not necessarily participate in the final decision to create an SAIS.

Former workers of the hacienda had no choice but to become part of the SAIS; otherwise they would not have had access to land. Also, since no land conflicts had taken place and there were no legal claims on the property of the hacienda, the communities had nothing to lose by becoming part of the SAIS. The SAIS became responsible for schools, teachers, and roads.

Each member of the SAIS Ramon Castilla service cooperative and the two peasant communities elected 10 representatives or delegates to the General Assembly of Delegates, who designated members of the administrative and surveillance councils. These members were responsible for making managerial decisions and deciding about the distribution of the surplus. They met every 3 months and represented 4.2% of the members, and were changed every 2 years. From these only 12 were elected to the councils to work for 1 year, so at the end of the 2 years 80% of the members participated in these decisions.

The members from the peasant communities were in the majority in the assembly, although they did not participate directly in SAIS production activities. Both comuneros and workers complained. The comuneros were unhappy because there were bad communication channels and because they did not really participate through their delegates; the workers were unhappy because they did all the work but did not have majority control over decisions.

From 1973 to 1981 SAIS Ramon Castilla had only one manager, who had been appointed by the government against the will of the members. The members tried to replace him but failed because Law Decree 21583 protected the SAIS managers if the government considered their actions beneficial to the SAIS.

The government regulated the amount of wages paid, the distribution of the surplus, and the minimum and maximum amounts of funds to be reinvested. Imprisonment was the penalty for not complying with what the Law of the SAIS Institution stated. This only confirmed that free participation and self-management did not exist. After property rights were finally given to the SAIS members, they threw out the manager.

During the period analyzed, there was no direct participation. Day-to-day decisions were in the manager's hands; policy decisions were made by the government. The members risked imprisonment if they acted against the law governing SAIS activities. There was pseudo-participation (Pateman, 1974) in that most of the decisions were guided by parameters previously set by the government.

IDENTIFICATION

Four variables were used to determine the process of identification. These were 1) the internal siege; 2) the increase in permanent labor absorption and separation of the member beneficiaries from their private means of production (or to the contrary, maintenance of pre-land-reform relations of production); 3) conflicts between worker goals and SAIS goals; and 4) poor range management practices.

Internal Siege

This variable measures the pressure of the beneficiaries to gain rights over lands reserved for the SAIS. Around 21,000 ha of the 28,643 ha were for the use of the SAIS and 4,000 ha of marginal pasturelands were for the use of the members of the service cooperative.

Although how much SAIS land was used by the huaccho animals could not be determined, there was information about the number of animals and their percentage of the SAIS's total sheep numbers. Table 11 (Valdivia, 1983, p. 180) shows that from 1973 to 1979 this decreased from 11% to 7%,

mainly because of SAIS regulations that restricted the keeping of huaccho animals.

Table 11. SAIS Ramon Castilla: Huaccho animals and SAIS animals on SAIS lands, 1974 to 1979 (sheep).

Year	Huaccho animals		SAIS animals		Total
	Quantity	%	Quantity	%	
1974	2,789	11	21,898	89	24,687
1975	2,031	9	20,655	91	22,686
1976	2,014	9	20,390	91	22,404
1977	2,005	9	19,345	91	21,350
1978	1,746	8	20,422	92	22,158
1979	1,654	7	22,683	93	24,337

Separation of the Workers from Their Means of Production

Only one group of permanent workers, from production unit Quishuarcancha, agreed to combine their huaccho flock under the control of a shepherd paid by the SAIS. The rest of the permanent workers took care of their own animals, so this process of separation of huaccho flocks from their owners has not been repeated.

There was no process of identification, mainly because the SAIS was unable to permanently absorb all the former workers of the hacienda that became members of the service cooperative. That is why hacienda-type production relations still exist -- these relations allow temporary workers to survive. These relations do not correspond to the development of monetary wage relations through the SAIS system, and this has hindered members' identification with the SAIS.

Another cause for lack of identification was the pressure of population upon the SAIS. SAIS Ramon Castilla could only provide 40.22 ha per family associated with the SAIS. The study of the Agrarian Reform Office for the Pasco region (Valdivia, 1983) determined that a family

needed 307 sheep to survive. If only the members of the service cooperative were counted, there were 60 ha per family with a carrying capacity of 45.6 sheep units.

Since the SAIS could not support enough sheep to provide an adequate level of living for members, there was limited identification of member welfare with SAIS objectives, and resistance to separation of huaccho animals from their owners.

Conflicts Between Worker Goals and SAIS Goals

The peasant communities did not identify because they did not gain sufficient benefits from the SAIS. The amount of profits decreased constantly in real terms, especially since 1979 when the policy of capitalization was stressed and less surplus funds were thus available for distribution to members.

The workers of Quishurcancha, the more developed production unit of SAIS Ramon Castilla, were also the ones who wanted to leave the SAIS to form a production cooperative. They resented the fact that they did most of the work yet didn't get full benefits from the SAIS or participate in SAIS decisions.

Poor Management Practices

The study shows that the sheep mortality rate increased in this SAIS. Table 12 (Valdivia, 1983, p. 184) shows that the main cause of death was bad management. No courses were taught and the shepherds did not think of themselves as owners who had to rely on their sheep to survive.

Table 12. SAIS Ramon Castilla: Percentage distribution of causes of death, 1974 to 1980.

Year	Management	Infectious	Parasitic	Intoxication	Other ^a
1974	50	17	7	0	26
1975	39	15	11	1	34
1976	37	19	20	1	25
1977	44	16	7	1	31
1978	59	29	7	0	11
1979	52	34	15	0	11
1980	39	21	11	4 ^b	25

^aOrganic and undetermined.

^bBecause of garbancillo plant ingestion.

CONCLUSIONS

The analysis shows that until conflicts are adequately resolved, the objectives of the SAIS will not be met. The emphasis on capitalization caused a decrease in the level of real profits distributed. The peasant communities were not able to identify because there were not adequate resources to invest in development of member activities and because they were excluded from decision-making.

Capital accumulation was possible but not adequate for the development and industrialization that could have employed all the available members.

The level of real wages decreased in individual terms and the SAIS was not able to absorb the available labor force. Members thus had to supplement their incomes by keeping huaccho animals. This retarded separation and also hindered identification with the SAIS.

Although there was a rate of labor absorption equal to CAP Palcan's rate (Valdivia, 1983), this was not enough to absorb the increase in the supply of labor. The members of the production unit that was more developed had a greater interest in forming a production cooperative that would give them direct control over their production system.

No real participation was present because the manager made most of the decisions. This also worked against the identification of members with the SAIS.

Recent reforms encouraged fuller participation and the manager was fired. But the problem of pastureland scarcity remains -- far too many people still rely on the SAIS for most of their earnings.

None of the SAIS objectives were reached, which shows that in this specific case this form of production has not become a development model for the region.

A COMPARISON WITH CAP PALCAN

The analysis shows that there was no process of identification in SAIS Ramon Castilla. Table 13 summarizes the findings for both the SAIS and the CAP with respect to the variables analyzed.

Table 13. Summary of the results of CAP Palcan and SAIS Ramon Castilla.

Variable	CAP Palcan	SAIS Ramon Castilla
Income generation		
Workers	+	+
Members	+	-
Capital accumulation	+	-
Participation		
All levels	-	-
Partial	+	-
Identification	+	-

Source: Valdivia (1983).

+ = contributes to.

- = detracts from.

Pasture carrying capacity did not increase in the case of Palcan, and decreased in the case of SAIS Ramon Castilla. Both cooperatives reached stable levels in terms of their production and were able to invest

capital in the production units. Their rates of labor absorption and technology development were similar. Both developed colonies in the jungle to help solve the problem of labor absorption.

The main difference is that the SAIS was founded on already-developed haciendas while CAP Palcan started from zero. The members of CAP Palcan stressed capitalization and labor absorption as their main objectives, and with the resources available were able to absorb all the labor force. Profits were reinvested and partial participation was essential to CAP Palcan's development.

The population pressure that existed since the formation of SAIS Ramon Castilla and the social goals to be accomplished were the main obstacles to its development. Although both had the same rate of labor absorption, CAP Palcan was able to absorb 100% of the beneficiaries and SAIS Ramon Castilla only reached 30% of the service cooperative's members, with decreasing real profits and no work through the development division in the peasant communities.

While each family that benefited from CAP Palcan had 327 sheep, each family that benefited from SAIS Ramon Castilla had 45.6 sheep, taking into account only the members of the service cooperative. With more beneficiaries the SAIS had more pressure upon resources available for reinvestment and it did not achieve levels of capitalization that allowed for the development of the enterprise nor for its members, and least of all for the region. The relationship between the number of families benefited through the Agrarian Reform, in both the case of the CAP and the case of the SAIS, and the amount of resources and technology available, were the key issues in determining relationships between members and forms of production.

A problem persists with CAP Palcan. Even though identification and development were accomplished within the CAP, a solution for the region has not been found. This situation jeopardizes the cooperative's future

because of differentiation in standards of living that can result in land invasions from outside the CAP (external siege).

An important issue is that if research developed in the SAIS through the small ruminant program (SR-CRSP) is to be transferred to the peasant communities that are members of the SAIS, one must take into account that for this case the development division in charge of this type of task exists only in the statutes, mainly because of lack of resources and because capitalization has been given a de facto priority. This, of course, may not be the case with more developed or richer SAISs.

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NOTES

- 1 Friedmann (1982) makes a distinction between the mode of production, which is the dominant social relations of production, and the form of production (which although it has different relations of production, has to follow the rules of the mode of production). This means that although cooperatives are different from the typical capitalistic form, they have to accumulate capital in order to compete successfully.
- 2 Examples of pre-land-reform practices adopted by some SAISs to help provide a minimum standard of living to members included giving crop- and pastureland to members of the service cooperative for their own use and allowing workers and members of the service cooperatives to graze animals on SAIS lands.
- 3 Huaccho animals are owned by the workers and grazed on SAIS lands at no cost.
- 4 As stated earlier, SAIS Ramon Castilla is subdivided into four production units. Two of these units (Ayas and Quishuarcancha) allow huaccho animals while the other two units do not.
- 5 The process of identification refers to the level at which members identify their welfare objectives with that of the SAIS. A high level of identification is achieved when members choose to invest surplus funds back into the SAIS to maintain their long-term living standards (i.e., to identify their welfare with that of the SAIS since the SAIS represents their main source of livelihood).

APPENDIX TABLES

Appendix Table 1a. SAIS Ramon Castilla: Total area and carrying capacity of the pasture, 1980.

Units of production	Area (ha)		Carrying capacity (sheep units)
	Grazing	Nongrazing	
Ayas	2,933	340	1,762
Cachi-Cachi	9,998	2,435	8,611
Casa Blanca	8,420	1,210	6,036
San Jose	1,374	292	833
Total extension	22,725	4,241	17,241

Appendix Table 1b. Carrying capacity by type of range.

Pasture condition	Sheep grazing (ha)	Carrying capacity (sheep units)
Good (2 sheep/ha)	135	246
Regular (1 sheep/ha)	12,478	12,478
Poor (0.5 sheep/ha)	10,112	5,056
Total	22,725	17,780

Source: Sotelo (1981, p. 156).

*Does not include 1,677 ha from Casa Blanca.

Appendix Table 2. SAIS Ramon Castilla: Source of SAIS income in 1974 and 1978 (soles).

	1974		1978	
	(soles)	(%)	(soles)	(%)
Crop products	3,786,320	20.38	28,332,815	36.86
Livestock products	10,913,736	58.73	43,196,034	56.2
Sheep	9,795,543		33,104,268	
Cattle	1,118,193		10,091,766	
Livestock increases	3,882,764	20.89	5,331,777	6.94
Total Income	18,582,820		78,860,626	

Source: Estado de gastos y remanentes 1974, 1975 SAIS Ramon Castilla.

Appendix Table 3. SAIS Ramon Castilla: Permanent workers in crop and livestock production, 1973 through 1979.

Year	Livestock	Crop
1973	20	4
1974	27	10
1975	48	10
1976	n.a.	n.a.
1977	48	27
1978	48	29
1979	45	27

Source: Valdivia (1983, p. 172).

Appendix Table 4. SAIS Ramon Castilla: Production indices, 1974 through 1979).

Year	Death rate	Wool production (lb)	Wool productivity (lb/sheep)
1974	6.46	103,800	6.35
1975	7.8	87,490	6.12
1976	7.8	n.a.	n.a.
1977	7.0	88,694	5.89
1978	6.96	n.a.	n.a.
1979	9.66	101,214	6.03

Source: Gandolfo (1980).

Appendix Table 5. SAIS Ramon Castilla: Wages paid to seasonal workers in crop and livestock, 1975 through 1979.

Year	Livestock (1)	Crops (2)	Ratio (2)/(1)
1975	334,677	2,910,297	9
1976	315,471	2,231,676	7
1977	730,287	4,711,361	6
1978	932,119	9,964,482	11
1979	2,575,222	29,920,170	12

Source: SAIS's accounting records, SAIS Ramon Castilla annual reports (various issues).

Appendix Table 6. SAIS Ramon Castilla: Seasonal worker annual income and number of workers according to months worked, 1975 through 1978.^a

Year	No. of months worked	No. of workers in each category	Percentage of workers each category	Yearly income
1975	12	180	30	9,858
	1	106	18	821
1976	12	83	14	10,709
	1	245	41	892
1977	12	141	42	26,224
	1	38	11	2,185
1978	12	138	24	40,422
	1	153	27	3,368

^a Prepared by Valdivia with assistance from Domingo Martinez C. with amounts paid to seasonal workers and number of workers hired monthly from SAIS Ramon Castilla. Data of all categories from 1 to 12 months of work have been found and the income generated according to number of months worked per year and needs per month.

Appendix Table 7. SAIS Ramon Castilla: Number (#) and percentage (%) of seasonal additional workers hired per number of months worked per year, 1975 through 1979.^a

Level of income	# of months worked	1975		1976		1977		1978		1979	
		#	%	#	%	#	%	#	%	#	%
1	12	180	30.5	83	14.19	141	42.85	138	24.25	157	34.0
2	11	0	--	48	8.15	4	1.22	33	5.8	12	2.63
3	10	10	1.67	7	1.19	19	5.77	49	8.61	33	7.22
4	9	33	5.53	1	.17	11	3.34	3	.53	19	4.16
5	8	25	4.19	16	2.72	--	--	2	.35	6	1.31
6	7	11	1.84	24	4.07	13	3.95	5	.89	12	2.63
7	6	46	7.71	46	7.81	7	2.13	2	.35	2	.44
8	5	74	12.39	25	4.24	3	.91	13	2.28	3	.66
9	4	26	4.36	60	10.18	9	2.74	4	.7	24	5.25
10	3	88	14.7	1	.17	75	22.79	50	8.79	2	.44
11	2	-2	--	33	5.60	9	2.74	117	20.5	32	7.0
12	1	106	17.7	245	41.59	38	11.8	153	26.88	155	33.9
Total		597		589		329		569		457	

^a Prepared by Valdivia with the help of Domingo Martinez. SAIS's data on wages and labor hired were collected and summarized for this table.