



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search  
<http://ageconsearch.umn.edu>  
[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

# DISKUSSIONSSCHRIFTEN

Parcellation of Agricultural Production Cooperatives in Peru

– Solution to a Principal-agent Problem –

by

Thilo Hatzius

Februar 1993

Nr. 31

GIANNINI FOUNDATION OF  
AGRICULTURAL ECONOMICS  
LIBRARY

WITHDRAWN  
WIAR - 1 1111

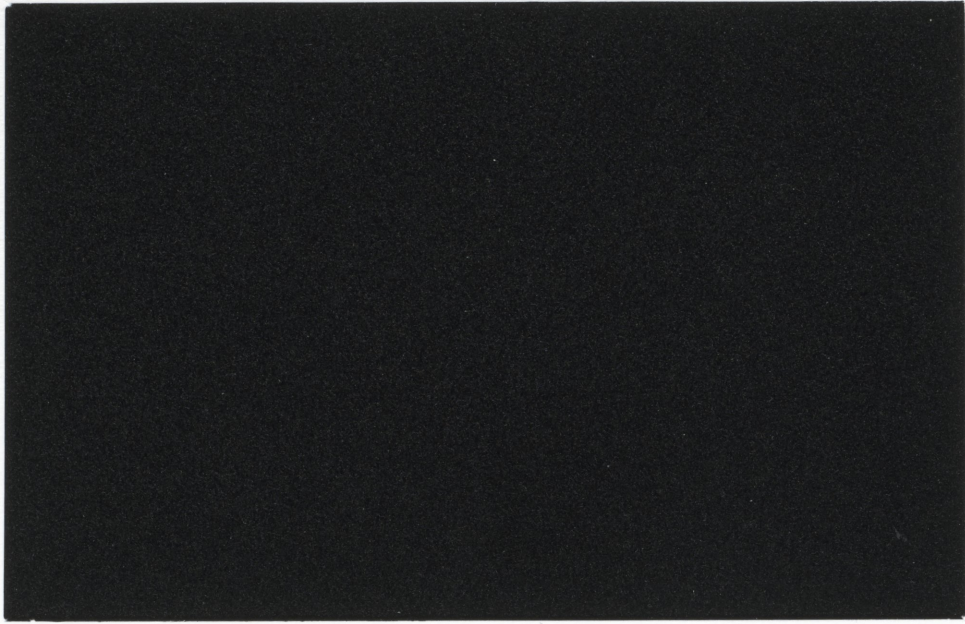


*Research centre for international agrarian development/exchange*

FORSCHUNGSSTELLE FÜR INTERNATIONALE AGRARENTWICKLUNG E.V.

HEIDELBERG

LEHRSTUHL FÜR INTERNATIONALE ENTWICKLUNGS- UND AGRARPOLITIK  
UNIVERSITÄT HEIDELBERG



**Parcellation of Agricultural Production Cooperatives in Peru**

**– Solution to a Principal-agent Problem –**

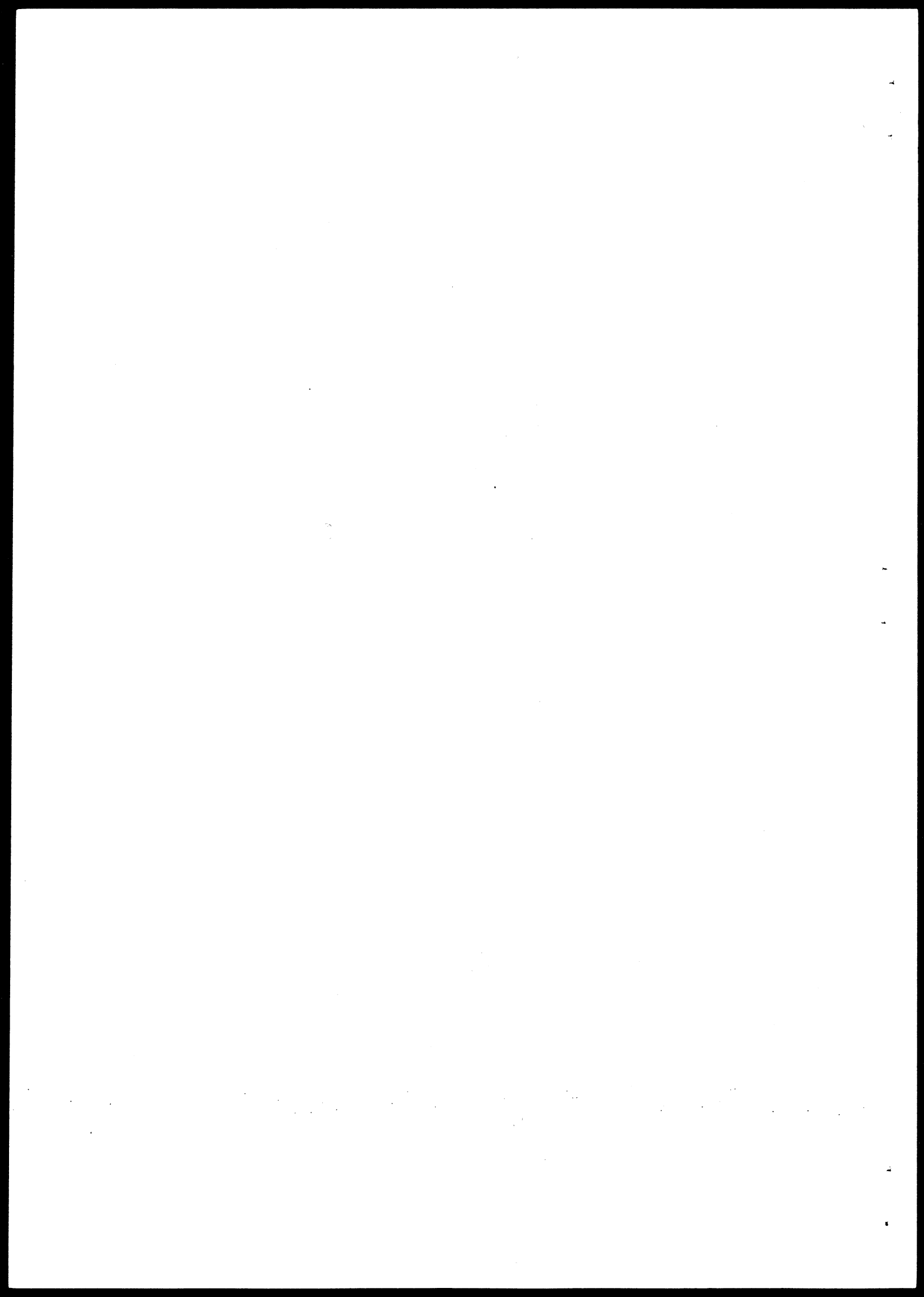
**by**

**Thilo Hatzius**

**Februar 1993**

**Nr. 31**

**Forschungsstelle für internationale Agrar- und Wirtschaftsentwicklung e.V.,  
Ringstr. 19, 6900 Heidelberg**

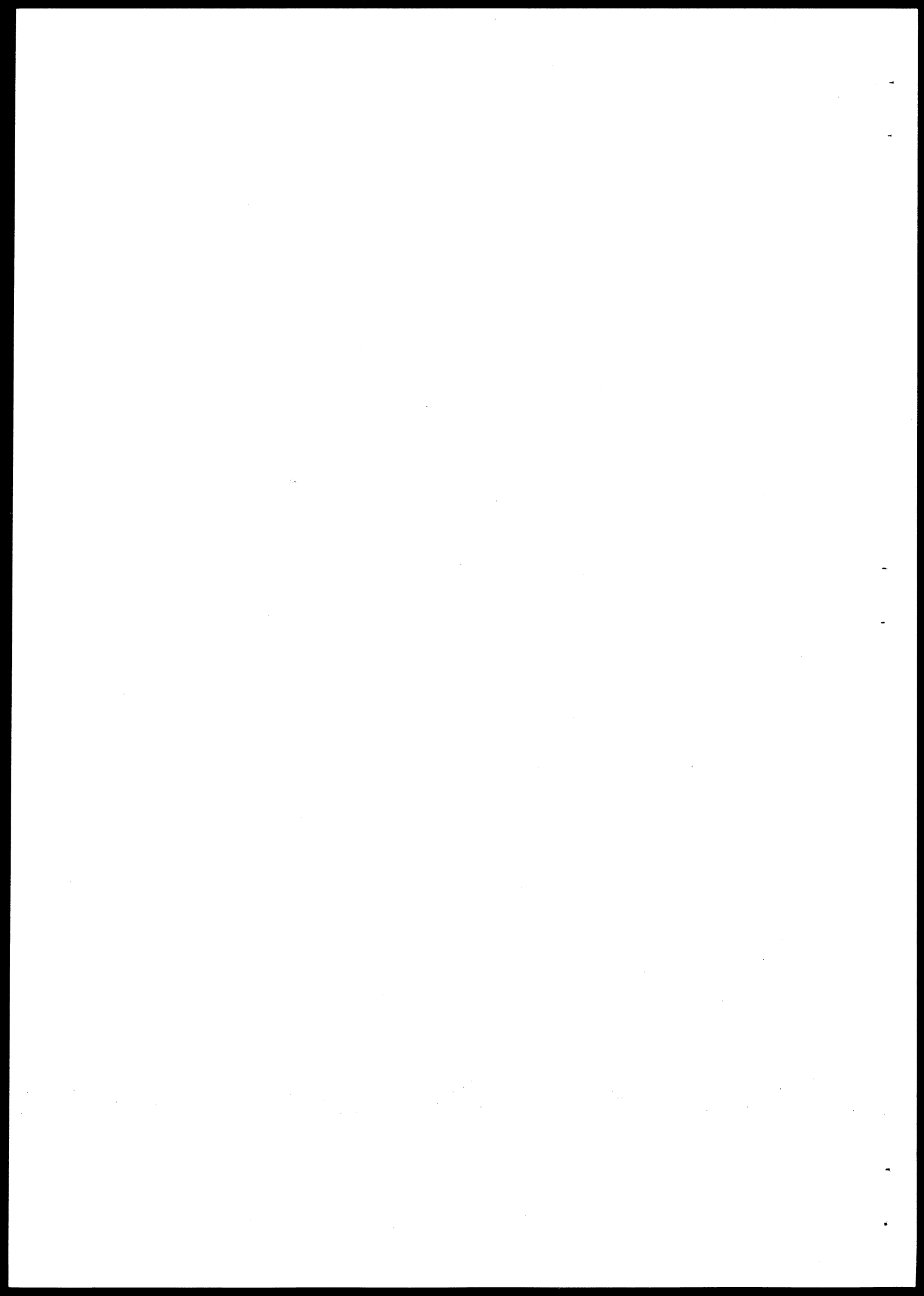


## Contents\*

<b>Abstract</b>	1
<b>Zusammenfassung</b>	2
<b>1. Introduction</b>	3
<b>2. Agrarian Reforms since 1963</b>	5
2.1 Development Model, Objectives and Achievements	5
2.2 Agricultural Production Co-operatives in Lambayeque	8
<b>3. Reconsidering the Peruvian Experience in the Light of New Political and Institutional Economic Theory</b>	14
<b>4. Some Conclusions and Policy Suggestions</b>	18
<b>References</b>	21

---

\* Observations and suggestions as to the improvement of the paper are welcome.



## Abstract

More than twenty years have passed since the 1969 agrarian reform of the military government under president Velasco in Peru. Agricultural Production Cooperatives (APC), characterized by collective ownership of the means of production, as well as its cooperative organisation, were imposed upon the beneficiaries of the reforms in order to secure the goals of economic efficiency and income distribution after land had been taken away from the powerful landed oligarchy. While, from a 'new' political economy point of view, the elimination of this strong political interest group and the redistribution of land rights must be considered a major achievement of the reforms, the imposition of a cooperative form of production organisation, however, was a major flaw as performance of APCs has been disappointing; therefore, subsequent governments left it up to cooperative members to decide either to parcel the land and work on individual plots or to keep on muddling through as APCs. In the Departamento Lambayeque, on the northern coast, only a few APCs, mainly the four large agro-industrial sugar producing former haciendas, still subsist, plagued, however, with severe financial and productivity problems.

Theorists of the institutional economics have analysed APCs' intrinsic problems, which stem mainly from free-rider behaviour of cooperative members and the high transaction costs related to securing the quantity and quality of labour input and to decision-making as the result of an almost insoluble 'principal-agent problem'. These costs counteract the advantages with respect to technical economies of large scale production, risk-sharing and market access. Institutional arrangements have to be found and are suggested for overcoming the problems of both, the still subsisting APCs and the 'parcelero' family farm enterprises, which have been suggested to be sub-optimal corner solutions of the general problem of production organization.



## Zusammenfassung

Mehr als zwanzig Jahre sind seit der peruanischen Agrarreform von 1969 unter dem Militärregime von Präsident Velasco vergangen. Landwirtschaftliche Produktionsgenossenschaften, gekennzeichnet durch kollektives Eigentum an Produktionsmitteln und eine genossenschaftliche Produktionsorganisation, wurden den Begünstigten der Reform aufgezwungen, um die Ziele wirtschaftlicher Effizienz und Einkommensverteilung sicherzustellen, nachdem der Boden der mächtigen Landoligarchie enteignet worden war. Während die Eliminierung dieser starken politischen Interessengruppe und die Umverteilung von Boden aus Sicht der neuen politischen Ökonomie als bedeutender Erfolg gewertet werden muß, war die Zwangseinführung der genossenschaftlichen Form der Produktionsorganisation ein entscheidender Fehler, da die Ergebnisse der Produktionsgenossenschaften enttäuschend blieben; die folgenden Regierungen stellten es daher den Genossenschaftsmitgliedern frei, den Boden aufzuteilen und individuell zu bewirtschaften oder als Produktionsgenossenschaften 'weiterzuvorsteln'. Im Departamento Lambayeque an der Nordküste Perus blieben nur wenige Produktionsgenossenschaften übrig, insbesondere die vier großen zuckerproduzierenden ehemaligen Haciendas, die trotz erheblicher finanzieller und Produktivitätsprobleme recht und schlecht weiterexistieren.

Theoretiker der neuen Institutionenökonomie haben die dem Typ der Produktionsgenossenschaft eigenen Probleme analysiert, die insbesondere vom Trittbrettfahrerverhalten der Genossenschaftsmitglieder und von hohen Transaktionskosten zur Sicherstellung von Quantität und Qualität der Arbeitsleistung herrühren bzw. von 'principal-agent'-Entscheidungsproblemen, die im Falle von Produktionsgenossenschaften als kaum lösbar erscheinen und den Skalenvorteilen im technischen Bereich, bei der Risikoverteilung und beim Marktzugang entgegenwirken. Institutionelle Lösungen sind gefragt und werden diskutiert, um die Probleme sowohl der noch bestehenden Produktionsgenossenschaften, als auch der 'parcelero'-Familienbetriebe zu lösen. Beide wurden auch als Ecklösungen des allgemeinen Problems der Produktionsorganisation bezeichnet.

## 1. Introduction

The agrarian reform of Velasco Alvarado's military government in Peru, although introduced over two decades ago, can still be called an example of a radical reform on a wide scale and a fundamental base for the development of Peru in the future<sup>1</sup>. The price paid for the considerable achievements, however, seems to be higher than expected, as the performance of the agricultural production cooperatives<sup>2</sup>, seen as the main instrument towards the goals of the reform, has been disappointing. The deterioration of the productive capacity of the large sugar cooperatives of the coast, comprising the most profitable and capital intensive sections of Peruvian agriculture and especially the ones which traditionally have been an important source of foreign exchange earnings, has been a critical problem within the agricultural sector for the last two decades, handed on from one government to the next with no satisfactory, generally acceptable solution in sight.

After the military government gave up power in 1980, the democratically elected civilian government of Fernando Belaúnde<sup>3</sup> was not very keen on preserving cooperatives which in most cases had been imposed from above and in which the state had been overengaged. Concerning his more liberal model of an economy, in which productive forces were to be unleashed by giving private initiative space to act freely, expropriations came to an end, more diverse forms of land ownership and agricultural enterprises within the "reformed sector" were allowed and land was mainly allotted to the small farm sector (MEJIA, 1990, pp. 41-68).

For the agricultural cooperatives, particularly the smaller ones of the coast, it meant an acceleration of the process of parcellation i.e. dividing up common land and working it individually. During the late seventies<sup>4</sup>, such fragmentation of land had already been done illegally, but tolerated by the government. The existence of privately worked plots on collectively owned land, analogous to arrangements in the pre-reform haciendas, has been stated as a source of conflict among cooperative members and a reason for a reduced contribution of members to common crops as well as for private appropriation of common resources, thus, negatively affecting the economic success of cooperatives (HATZIUS, 1981, p. 333; TORRE VILLAFANE, 1985, p. 217).

The process of parcellation has continued throughout the successive governments of García and Fujimori and has been called a "reform of the reform" or "neoreforma" (MEJIA, 1990). However, it seems that this "new" reform still lacks a generally accepted and agreed upon concept with respect to an institutional framework and to macro- and agricultural policies allowing the agricultural

---

<sup>1</sup> See my earlier writing, HATZIUS, 1981, p. 327.

<sup>2</sup> The terms agricultural production and producer cooperatives (APC spanish: CAP) as well as production society can be used interchangeably. As in most cases, in Peru this type of cooperative comprises *collective ownership* of land and other non-labour means of production, as well as *cooperative organisation of production*. The intrinsic problems of ACPs have been shown not to stem from collective ownership but from cooperative organisation with an output or net-revenue-sharing arrangement; see PUTTERMAN (1989). SCHILLER (1969) p. 14 points out the importance of keeping in mind that "the form of land use, and not the form of land rights" are "the essential mark of distinction", while using the terms "collective agricultural production" and "group" or "cooperative farming" alternatively.

<sup>3</sup> 1963 democratically elected, president Belaúnde Terry had been deposed in 1968 by a military coup. His land reform of 1964, in which voluntary formation of cooperatives as well as family-type farming were promoted, had been considered half-hearted by his military successors because the oligarchic power of big landowners had not been touched.

<sup>4</sup> After President Velasco Alvarado had been deposed by the more moderate Morales Bermudez in 1975.

sector and the people working within to freely develop their productive forces to their own benefit and that of their country.

Coping with an ever changing natural environment has always been a particular skill of farmers all over the world. Even small subsistence farmers in developing countries are now generally considered "rational, that is, they act in a (reasonably) consistent manner, one which adapts to changes in circumstances" (STIGLITZ, 1986, p. 257). Peru had its share of natural disasters during the last twenty years which certainly had a negative influence on agricultural sector's performance. The man-made disasters with respect to the ever changing institutional and continuously deteriorating political and economic environment that farmers had to cope with, however, seem to be at the root of the poor performance of which the agricultural sector showed during most of the last two decades, excepting for a short boom-period caused by an irresponsible and short-sighted economic policy, figuratively called "economic surrealism" or "macroeconomic populism" which resulted in a dramatic economic crisis, said to be the worst in Peru's history<sup>5</sup>.

The new government which assumed power in July 1990, in addition to its stabilization program with measures to eliminate the fiscal deficit, to remove various sources of money creation, and correct the balance of payments deficit and relative prices (see KONG, 1991), needs a consistent policy oriented towards the agricultural sector, particularly with respect to institutional arrangements for the organization of production and distribution. The government has already reduced its role and retreated not only from marketing inputs and products but also intends to leave other services, such as research and extension and even social services to the private sector. This is reflected in a number of legal provisions, which exist either in the form of decrees not yet confirmed by parliament or as a proposition for a new agricultural law<sup>6</sup>. The documents cover a wide range of topics and go down to the last detail, reflecting the diversity of forms and the multiplicity of interests within Peruvian agriculture.

The objective of the present paper is to reconsider the achievements of the agrarian reform of 1969 in the light of the parcellation of agricultural production cooperatives, taking into consideration some notions of new political and institutional economics. This will lead us to draw some conclusions with respect to future policies for the (former) "reformed sector". The focus will mainly be on northern coastal agriculture, particularly on the Departamento Lambayeque, a region where the agrarian reform of 1969 was first implemented, parcellation of smaller cooperatives first started and four large agro-industrial agricultural production cooperatives still subsist.

---

<sup>5</sup> See, e.g., NORTON (1988), PAREDES (1989), DORNBUSCH and EDWARDS (1990), . Growth rates were: -8%, -11% and -5% in 1988, 1989 and 1990, respectively, RICHTER (1991).

<sup>6</sup> Decreto Legislativo No.653 "Ley de promoción de las inversiones en el sector agrario" of July 30th, 1991 and the corresponding "Reglamento" of October 30th, 1991. "Proyecto de Ley General Agraria" by the agricultural commission of the house of representatives of August 3rd, 1991. As parliament has been dissolved in the coup d'etat of April 1992, it has to be seen how this will affect the implementation of the respective policies.

## 2. Agrarian Reforms since 1963

### 2.1 Development Model, Objectives and Achievements

The achievements of the reforms since 1963 in terms of area granted and beneficiaries are presented in Table 1. This table includes both the results of the limited reform of the first Belaúnde government<sup>7</sup> as well as those of the military government in 1969, on which we will mainly concentrate. As can be seen from the table, since 1979, when the military prepared itself to cede power, area granted increased by a mere 12% and beneficiaries by 14%, with the bulk going to the small farmers sector<sup>8</sup>. The overall numbers, however, indicate a strong bias towards collective ownership of land, which during the first years of the military government was particularly accentuated.

Table 1: Achievement of Land Reform in Peru 1963 - 1990

		Coverage of the reform				
		Units (No.)	Area Granted (ha) (%)		Beneficiaries (No.) (%)	
- Cooperatives	(1)	619	1,739,210	17.9	93,471	21.7
- SAIS	(2)	49	2,008,976	20.7	39,656	9.2
- EPS	(3)	12	156,713	1.6	2,631	0.6
- Peasant Groups		782	1,207,287	12.5	36,981	8.6
- Peasant Communities		1,427	3,134,531	32.4	169,689	39.5
- Individuals			1,425,300	14.7	88,080	20.5
TOTAL	(4)	2,889	9,672,017	100.0	429,384	100.0

- 1) Includes Agro-industrial, production, service, parcel integrations and central cooperatives.
- 2) Sociedades Agrícolas de Interés Social. Originally land was granted to 61 SAIS, but 12 have been liquidated.
- 3) Empresas Rurales de Propiedad Social. The number of beneficiaries given by the DGRA has been adjusted based on information by the "Fondo de Propiedad Social".
- 4) According to HARDING (1975) p. 220, the goal had been the transfer of 11 million 340,000 hectares to families until 1976.

Source: Dirección General de Reforma Agraria (DGRA), elaborated by MEJIA (1990, p. 22).

The figures give an idea of the tremendous task performed by the reform administration within the Ministry of Agriculture. Given the weakness of public administrations in developing countries on the one hand and the scarcity of skills and material means available on the other, the results are quite impressive. Compared to other Latin American countries, Peru, with 39.3% of total forest and agricultural land affected by the agrarian reform, benefitting 30.4% of farming families, ranges third behind Bolivia (83.4% and 74.5% respectively) and Mexico (43.4% and 42.9%) (THIESENHUSEN, 1989, p. 10).

<sup>7</sup> Until June 1969, only 320,000 ha or 3.3% of the total area in Table 1 had been granted, benefitting 13,657 families, LÜPERTZ (1979) p. 247. The goals set in 1975 were the redistribution of approximately 9 million hectares to 340,000 beneficiaries, 80% of the land was to go to cooperatives and SAIS, HORTON (1977) p. 219.

<sup>8</sup> Between August 1980 and June 1985, of the 698,154 ha distributed to 41,659 farmers, 98.7% went to the small farmers sector ("economía campesina"), only 14 new cooperatives were formed and one SAIS received some more land; see MEJIA (1990) p. 56.

The figures presented in the table, however, do not say anything about the success or failure of the reforms with respect to the stated goals such as the increase in production and productivity, more rational use of natural and human resources, elimination of an unjust income distribution in the agricultural sector, accumulation of capital within the agricultural sector and capital transfers to other sectors (see HATZIUS, 1981). The goals were part of the military government's structuralist, import-substitution development strategy which favoured industrialization to the detriment of the agricultural sector, much like the one of the deposed first Belaúnde government, but pursued with more rigor and considerably increased engagement of the state within the economy (SCOTT, 1990, p. 118).

With respect to agrarian reform, the military also imposed much more radical measures of redistributing property rights, which favoured a collective model of land ownership and production. Belaúnde's reforms, in which also agricultural cooperatives were to be promoted<sup>9</sup>, had been stripped of its original content in the process of getting it through parliament against the strong influence of the powerful landholding class. The expropriation in 1969 of even the most profitable and capital intensive agricultural enterprises of the coast, thus, has to be seen not only as an effort to redistribute land as the major source of income and economic rent, and to redirect resources to industry, but also as an attack on the influence of the landed oligarchy within the society.

The development model of the military government rejected the orthodox "liberal" view of the limited state which had prevailed during most of Peru's past ("Nachtwächterstaat") and which gradually changed during the time of the first Belaúnde government. Belaúnde's ideal had been a "service state" with the functions of economic planning, implementation of "distributive justice", national integration, and the promotion of a "social concept of property" (JAQUETTE, 1975, p. 419), but leaving most of the productive activities to the private sector. The military government instead recognized the weakness of the "national bourgeoisie" (domestic private enterprise sector) and saw the necessity for a more direct involvement of the state in investive and productive activities. The professed goal was an economy somewhere between capitalism and socialism or, as it was also called, a "fully participatory social democracy"<sup>10</sup>.

Even though the formation of APCs has been interpreted as being part of the general concept of a social property and workers' selfmanagement sector, collective ownership initially had not been given exclusive preference. Much room had been left for privately (e.g. among relatives) dividing up haciendas (a process called 'parcellation' then) and for private ownership. Only after social unrest and political pressure from permanent hacienda workers, who often lost their jobs when haciendas were parcelled, this option was abolished. Collective ownership and cooperative organisation, however, were preferred from the beginning as far as larger haciendas were concerned (e.g. sugar cane and cotton producing haciendas of the coast), as well as in the case of forced expropriation through land take-overs (HARDING, 1975, p. 239). By way of collectively owned and operated

---

<sup>9</sup> TORRES (1967) p. 68 gives a summary of the basic principles laid down in the first cooperative law of Peru passed during the Belaúnde government, which was also the first to introduce "cooperativa" as a type of firm in the civil code.

<sup>10</sup> KNIGHT (1975) p. 350. The "Peruvian model" of reforms had been - among others - inspired by Jaroslav VANEK, who in 1970/71 made three visits to Peru as a consultant. For a discussion of the theoretical background of his ideas of a market economy composed of worker-managed firms see pp. 353-355.

larger units, economies of scale, as well as positive income distribution effects, were thought to be optimally realized. In the case of the large sugar haciendas of the coast, this reasoning had been widely acknowledged as sound (see, e.g., HORTON, 1977, p. 238).

The permanent workers of the sugar haciendas were, at least until they found out how the government kept intervening in their affairs, not opposed to the cooperative model. In case of the smaller ones, however, or in the case where various haciendas were to be joined to form larger units and where advantages from large scale production and cooperative organisation of production were less obvious, often strong opposition has emerged. The reluctance to join cooperatives has also been experienced with other forms of cooperative organisations such as CAS (Agrarian Service Cooperatives), CAIP (Agrarian Parcel Integration Cooperatives), and even in the case of secondary cooperatives, the regional "Centrales de Cooperativas". The latter were to reduce socio-economic differences between members of different APCs resulting from unequal access to productive resources (KAY, 1983, p. 210/11). Plans to regroup smallholders and to restructure peasant groups and communities along the lines of the cooperative model, however, were vigorously resisted.

Looking at the overall achievements of the reforms, there seems to be general agreement among political scientists, sociologists as well as economists, that the agrarian reform of 1969 – by way of dismantling the old order in the countryside and curtailing the political influence of the landed oligarchy by redistributing property rights in land – has been a bold step and a necessary precondition for a more dynamic and equitable development of the country – even though, to date, neither the military nor any subsequent civilian government has been successful in this respect. On the other hand, imposing the cooperative model of production and giving preference to the so-called "reformed" sector in the allocation of credits, inputs and extension services (technical assistance to smallholders e.g. had been discontinued, (HORTON, 1977, p. 221)) has been a source of conflict and brought economic losses to the country. The disintegration of agricultural production cooperatives and the parcellation into private plots, choosing other – in the best case – genuine forms of cooperation proves the failure of the producer cooperative model as imposed by the military government. KAY (1983, p. 235) concludes: "In retrospect, it would seem that this failure to rally the peasants and workers around its central goals has proved to be one of the basic weaknesses of the whole reform programme".

With respect to productivity, employment and income distribution, the objectives of the reforms set by the military government have been far from realized. Considerable transfers from the agricultural, and particularly from the export sector – to which most of the cooperatives on the coast belong – to the urban industrialized sector have been stated, resulting from government intervention in pricing and marketing, which dramatically increased during the 1969–1980 period (see CARTER et al., 1989, p. 168/169). These interventions partly contributed to the low growth rates in agricultural production, stagnating at the level of the 1960s, with no significant changes in production patterns. Effects on employment and income distribution within the agricultural sector were found to be limited and there was no significant alleviation of rural poverty, as the traditionally poor majority was left unaffected by the reforms (KAY, 1983, p. 230–232).

This situation did not change during the time of the subsequent civilian governments since these basically continued macroeconomic policies with respect to taxes, food pricing, marketing and imports as well as overvalued exchange rates, which were unfavourable to the agricultural sector and which particularly affected the export and urban food oriented agriculture of the coast. They were not successful either in actively restructuring the cooperative sector by creating (or enforcing) new laws and institutional set-ups in order to unleash the productive forces of the resources wastefully blocked within this sector. As a result, agricultural production during the last two decades has only grown at an annual rate of 1.2%, well below population growth of 2.6% (KONG, 1991).

## 2.2 *Agricultural Production Cooperatives in Lambayeque*

The Departamento Lambayeque, now integrated as Subregion II into the newly formed North-Marañon Region, is one of the most important rice and sugar-cane producing areas on the Peruvian coast. Agricultural production, exclusively based on irrigation, is highly productive as natural conditions are exceptionally well suited for high technology year round crop production. In case of the Chancay river valley, irrigation can be regulated by means of the Tinajones Reservoir, the other three valleys being exclusively dependent on seasonally irregular water flows from the river or on groundwater. Since agricultural production is only possible through irrigation, statistics on land reform and cooperatives, depicted in Tables 2 and 3, consider both total and irrigated land. Land not irrigated for the time being still has some agricultural potential, thus representing an asset, as further investment in trans-andine tunnel and canal infrastructure to transfer more water to the coast is being discussed (Olmos, Tinajones II). Also economizing water by introducing more water saving irrigation techniques might allow for a further extension of irrigated area.

Table 2: Land Reform in the Departamento Lambayeque

T Y P E	Land affected		No. CAPS	Land assigned		Beneficiaries '000 pers.	Irrigated land ass. per person
	total '000 ha.	Irrig. '000 ha.		total '000 ha.	irrig. '000 ha.		
Sugar co-op.			4	57.2	36.5	13.9	2.6
Other co-op.			38	74.2	26.9	3.8	7.1
Camp. groups			15	43.1	9.2	1.5	6.1
Individuals				16.8	15.2	1.6	9.5
TOTAL	365.7	159.2	42	191.3	87.8	20.8	4.2

Source: TORRE VILLAFANE, 1985, p. 224

As can be noted from Table 2, land reform in the Departamento Lambayeque has been highly biased towards collective ownership of land. Only 17% of irrigated land was assigned to individuals, mainly former tenants of hacienda land, the rest going to cooperatives or farmer groups ('grupos campesinos'). Agro-industrial sugar cooperatives received almost 42% of the irrigated land redistributed. When the second Belaúnde government took over from the military in 1980 agricultural production cooperatives controlled about 40% of total irrigated land. In the meantime this

proportion has been reduced, as no more cooperatives have been founded and existing ones have started to divide up their land.

Among the 42 cooperatives of the Departamento Lambayeque two main groups have to be distinguished (see Table 3): the large agro-industrial sugar cooperatives (Cooperativas Agrarias Azucareras, CAA, formerly CAP) growing mainly the permanent sugar cane crop, and the 38 smaller and medium-sized cooperatives (Cooperativas Agrarias de Trabajadores, CAT, formerly also CAP), growing mainly annual crops, i.e. rice, cotton, corn and pulses. Since the cooperatives are quite different with respect to origin, size, production organization, as well as problems and present status, we have to treat them separately<sup>11</sup>.

Table 3: Agricultural Production Cooperatives of LAMBAYEQUE, PERU

Valleys	No. Co-op.	Land (ha) assigned	Irrigated Land (ha)	Members
CHANCAY	25	72,469	47,631	14,013
sugar	3	49,844	30,300	11,464
others	22	22,625	17,331	2,549
LA LECHE	4	42,636	3,252	361
sugar	-			
others	4	42,636(**)	3,252	361
MOTUPE-OLMOS	9	2,768	1,719	261
sugar	-			
others	9	2,776	1,719	261
ZANA	4	13,503	10,768	3,122
sugar	1	7,327	6,196	2,461
others	3	6,176	4,572	661
TOTAL	42(*)	31,384	63,370	17,7571
SUMMARY				
Sugar cooperatives	4	57,171	36,496	13,925
Other cooperatives	38	74,213	26,874	3,832

(\*) The CAPs which are part of Cajamarca have been excluded: Carniche, Firruñaf, Udima, Montesecco and Espinal.

(\*\*) At first, the cooperative "La Viña" was given 41,747 hectares but in February 1981, 35,544 hectares were returned to the state, so that the cooperative was left with 6,203 hectares. This problem has not yet been solved.

Source: TORRE VILLAFANE, 1985, p. 222

The first group of APCs comprises four (three in Chancay valley) large agroindustrial cooperatives, each owning between 7000 and 11000 ha of land. The ownership of land and infrastructure is still being held collectively by the former permanent workers of the respective haciendas, which had been expropriated 48 hours after the proclamation of the land reform law of

<sup>11</sup> For details on the natural and socio-economic conditions, land reform procedures, cooperative organisation, problems encountered and the situation after ten years of existence, see HATZIUS (1981); here, reference is made only to the Chancay valley. This valley benefitted during the last 25 years from German development aid (Tinajones project). Even though HATZIUS (1981) concentrated on cooperatives of the Chancay-valley, basic information



1969<sup>12</sup>. The quick intervention of state authority at the time prevented any decapitalization by the former private owners. A completely intact infrastructure with respect to highly productive sugar cane fields, irrigation canals and wells, agricultural machinery and processing plants could thus be passed on to the new owners which were charged with a corresponding "agrarian debt" to be gradually paid to the former owners via the government<sup>13</sup>.

The hierarchical organisational structure of the former haciendas, with three main divisions – field operations, factory and administration – had been maintained with the self-governing bodies formally assuming overall responsibility for coordination and decision-making. Management was partly hired and changes were frequent in case of disagreements on decisions affecting member interests. In addition to wages, member workers received a proportion of net-revenue at the end of each year depending on the number of days worked. The proportion to be distributed, however, was regulated by law. In order to secure productivity levels and payment of the agrarian debt as well as taxes, the government kept a high profile: by reserving the right to appoint managers, by having its representatives on the cooperative assembly<sup>14</sup> and administrative council (justified as representation of the capital of the agrarian debt yet to be paid), by controlling the allocation of net-revenue, by imposing promotion organisations<sup>15</sup>, and finally by direct military intervention in case of strikes. These strikes, frequently organized by worker unions to push through demands for wage increases or maintenance of fringe benefits (free electricity, subsidized food etc.) and free cost-intensive social services (education, health, housing), were the immediate evidence of the intrinsic contradictions of the cooperative model.

Whereas the military government never made a real effort to revise its cooperative model, the ever more evident internal problems of cooperatives forced the subsequent civilian governments to contemplate alternatives which even included the option of giving the land and assets back to their former owners. Besides internal studies, there were missions from abroad by aid-organisations (in 1982 e.g. "Misión Reagan" under the former US agricultural secretary Clayton Yeutter) and by financial institutions in various instances. A plan of the Belaúnde Government to privatize the sugar cooperatives (Programa de Rehabilitación de la Industria Azucarera, PRIA<sup>16</sup>) was resisted by the organized cooperative sector<sup>17</sup>. The subsequent APRA government under president García promised non intervention, remission of part of the debt, augmentation of sugar prices, and imple-

---

with respect to general conditions of agricultural production and conclusions concerning the performance and problems of APCs basically apply also to the rest of the Departamento Lambayeque.

12 Lambayeque was one of the first regions to be declared "reform zone", which was the precondition for expropriations to take place.

13 For details see von URFF (1975) p. 339. The agrarian debt was forgiven with the new constitution of 1979 and CAPs received internal autonomy, see CARTER & ALVAREZ (1989) p. 159.

14 In CAPs with more than 500 members, delegates were elected by members. During the first phase, however, the government did appoint up to 98 out of 120 delegates (Tumán in 1970), see ZALDIVAR (1974) p. 34.

15 Particularly ONDECOOP (Oficina Nacional de Desarrollo Cooperativo), SINAMOS (Sistema Nacional de Apoyo a la Movilización Social), SAFCAP (Sistema de Asesoramiento y Fiscalización), and CENCIRA (Centro Nacional de Capacitación e Investigación para la Reforma Agraria).

16 PRIA had been based on a 31-volume study financed jointly by the World Bank and the sugar industry. See OROZA (1990) 219–241.

17 The major cooperative unions founded the "Frente Unitario de Defensa del Agro Nacional" (FUNDAN) to demand changes to the plan and to the new agricultural law ("Ley de promoción y desarrollo agrario, D.L. 2"). In 1984 corresponding demands were made to the presidential candidates for the 1985 elections. MEJIA (1990) p. 51.

mentation of another plan (Programa de Rehabilitación y Financiamiento de la Industria Azucarera, CONAPRO) which included the creation of an autonomous organism (Autoridad Autónoma del Azúcar) for its implementation. Investments were to be financed from an import tax on sugar<sup>18</sup>. None of the measures, however, has been implemented (OROZA, 1990, p. 215/220; MEJIA, 1990, p. 79/80).

Presently, the situation is one of 'muddling through', with each cooperative trying to cope with its particular problems, marketing its own sugar, and maintaining liaison offices in Lima which formerly had been taken care of by a secondary cooperative. Different interest groups within the cooperatives, mostly along political party lines, fight each other, so that sometimes even different governing bodies are in conflict with each other. This in turn, leads to the frequent exchange of managers, preventing radical changes and paralyzing any progress. Cooperatives and their members only seem to be united in the contempt to reorganization or privatization.

At the time when Belaúnde took office, the second group of cooperatives in Lambayeque comprised 38, of which 22 belonged to the Chancay-valley. In 1988 only 9 of them had not been divided up with the prospect of only one to be ultimately left (TORRE VILLAFANE, 1990, p. 175). As can be seen from Table 4 overall irrigated land per person remained about the same, with parcelled cooperatives having a slightly more favourable land/man ratio than the remaining ones. The structural effect of the reform has been negative, as the 38 cooperatives originally had been formed by joining up more than 150 small and medium-sized haciendas. The parcelled 29 cooperatives resulted in 1,809 individual 'parcelero' plots<sup>19</sup>. Thus, the average size of farms now is much smaller than in pre-reform times. It should, however, be stated that, historically, there had been quite a different agrarian structure and only since colonial and post-colonial times had a gradual process of elimination of small-scale agriculture been taking place. By expelling share croppers and by absorbing the smaller independent haciendas, the larger sugar haciendas gained more and more control over land and water rights as well as influence on government policies (BURGA, 1976; GOMEZ CUMPA et al. 1989).

---

18 Between 1980 and 1989 an average of about 150,000 tons of sugar had to be imported, except for 1982 and 1985, CES (1989), p. 64.

19 The effect on productivity will be discussed later.

Table 4: Evolution of Cooperatives in the Departamento Lambayeque

T Y P E	1980				1988			
	No. CAPS	Irrigated land '000 ha.	Bene-ficiaries '000 pers	Irrigated land per pers.	Irrigated land '000 ha.	Bene-ficiaries '000 per.	Irrigated land per pers.	No. CAPS
Sugar co-op.	4	36.5	13.3	2.7	36.5	15.0	2.4	4
Other co-op. Parcelled co-op.	38	26.0	3.5	7.4	10.7 (12.0) <sup>1)</sup>	1.9 (1.8)	5.6 (6.7)	9
Individuals		96.7 <sup>2)</sup>	37.1	2.6	112.0	38.8	2.9	
TOTAL	42	159.2	53.9	3.0	159.2	55.7 <sup>3)</sup>	2.9	13

1) Numbers in parenthesis are comprised in "individuals", the difference in land went to third persons, see footnote Table 3 in source.

2) "Individuals" in 1980 and 1988 comprises all other groups.

3) Source gives 60.1 thousands instead of 55.7 thousand beneficiaries in Table 3, which is more detailed.

Source: TORRE VILLAFANE (1990), Tables 2 and 3, pp. 175 and 176.

The initial situation in Table 4 practically refers to the end of the military government's agrarian reform. Since March 1981, 90 days after Belaúnde's new agricultural law had been passed (D.L.2), no more land was affected, agricultural production cooperatives ceased to be the preferred form of production organization and land was preferably assigned to individuals (MEJIA, 1990, p. 51/52). The parcellation process gained momentum in Lambayeque as the reformed sector ceased to obtain special treatment from government agencies. The general adverse economic and natural conditions seem to have affected the reformed sector more than the individuals (MELMED-SANJAK et al. 1991, p. 114). One way of ACPs to cope with the difficult situation was to give private plots to member families for temporary usufruct as compensation for outstanding services or salaries (MARTINEZ et al., 1989).

De-facto parcellation of cooperatives in Peru supposedly began in Chancay-Lambayeque in 1978 by the CAP "Casimiro Chumán", after wages had not been paid for months and work discipline deteriorated. A first step had been to start working in groups, each group being led by a foreman. Net-revenue-sharing was transferred from cooperative to group level. The result supposedly were higher yields, better control of plan execution and personnel (TORRE VILLAFANE, 1985, p. 227). After the legal basis for parcellation had been created with the new D.L.2, the next step was to divide up 348 of a total of 398 ha and leaving only 50 ha of sugar cane to be collectively worked.

Leaving a certain part of total land in collective ownership has been the option chosen temporarily by various ACPs, in particular when the formation of service cooperatives (cooperativa agraria de usuarios, CAU) became a precondition for parcellation at the end of 1984. As an economic basis of CAUs, a parcel of land between 50 and 100 ha had to be held in collective ownership. Each member then had to work one day per week on this land. Most of the CAU, however, collapsed soon, as basically the same intrinsic problems observed with ACPs continued. The objective of this provision, to preserve some advantages of large scale production while eliminating the disadvanta-

ges of APCs, could therefore not be realized (see CARTER et al., 1989, p. 174 and CARTER, 1990, p. 75 and sources therein).

With respect to the performance of 'parceleros' as compared to the former ACPs, information is scant and not conclusive with respect to trends in yields, factor utilization or productivity. Apparently the most ambitious statistical analysis on the subject has been done by MELMED-SANJAK and CARTER estimating stochastic frontier production functions based on data collected in Chancay-Lambayeque (see MELMED-SANJAK, 1991). The results suggest that technical efficiency *actually realized* by 'parceleros' is superior to the one of ACPs while *potential* efficiency of ACPs exceeds that of the 'parceleros'. The authors leave it open if APCs financial crisis leading to parcellation reflects 'intrinsic' problems or has been due to difficult macroeconomic circumstances and suggest a combination of the two. They consider the capitalist family farm sector resulting from parcellation as 'experimental' and are sceptical about its longer term structural stability, suggesting that there still might be the possibility of a "well-functioning system of cooperatives" (p. 205). Referring to the results of this study CARTER (1990, p. 86) concludes, that both cases represent 'corner solutions', with neither of them being an optimal institutional arrangement and he suggests a second-best solution in the form of mixed institutions which avoid market failures as well as intrinsic factors inhibiting APCs' productivity and economic stability.

With respect to the single most important crop of parcelled cooperatives TORRE VILLAFANE (1990) presents some data showing the deterioration of rice yields over the last five years (1975 - 1979) of their existence, falling well below the departmental average during the last two years. MELMED-SANJAK and CARTER (1990) confirm this trend with own data and show increasing rice yields since parcellation has started. Another study by TORRE VILLAFANE based on a sample of eighty 'parceleros' interviewed on the results of the 1987/88 rice crop found an increase in yields of 18% in relation to the base period (1975-80). He points out the fact that the year in consideration has been a particularly good one and that there also might have been a bias towards reaffirmation of the parcellation decision on the side of the 'parceleros'. In his general conclusions - not quite based on empirical evidence - he suggests an increase in production and productivity as well as an increase in the use of family labour during a first phase of parcellation followed by an increase in the use of temporary labour later on. A tendency to secure food consumption by growing a wider variety of crops and by retaining more rice for home consumption as well as a better utilization of agricultural resources within the domestic economy is also reported (p. 197). All studies point out the importance for the 'parceleros' to find institutional and organisational arrangements which in an environment of risk and imperfect, respectively interlinked markets allow for cost-efficient transactions as regards marketing, agro-industrial investment, provision of extension, credit, inputs and other agricultural services in order to retain some of the advantages given up by parcellation.

By 1988, of the 29 parcelled cooperatives registered as CAU, only five had retained some form of collective organization of production. In 1989 three of a sample of nine former ACPs were still organized as CAU, in all the nine CAUs 'comités de maquinaria' had been formed by three to five members each, considered as "efficient and starting to assume a role as entrepreneurs" (TORRE VILLAFANE, 1990, p. 179). Managing the machinery of the former APCs, they served not only former ACP members but also other individual farmers. Additional collective activities of the

sample of nine former cooperatives comprised supply of inputs and other services (5) as well as credit (2), and marketing of products (2). A particularly positive example is reported from the Olmos valley, where 19 'parceleros' organised as CAU managed to considerably increase their income by individually working plots but collective activities in marketing, administration, machinery, water distribution and maintenance of tube wells (ibid. p. 187). TORRE VILLAFANE also underlines an increasing engagement of 'parceleros' within the rice farmer and irrigation associations, another form of securing input supply.

It is still too early to see how the liberal policies reflected in the new legislation with respect to property in land and organisation of production and distribution will affect the viability of a 'capitalist family farm sector' and in which direction structural change will occur in the longer term, particularly with respect to differentiation among parcelleros and reconcentration of land so feared by opponents to the parcellation process. Until 1989, 'parceleros' of the 29 former APCs had sold 335 hectares to non-members (TORRE VILLAFANE 1990, p. 189). Even though the upper limits on individual property rights in land, established in the agrarian reform legislation, were retained, already at the end of 1981 land claims were made by former owners to get their land back. At the end of 1981 there were claims for a total of more than 7,000 ha in the Departamento Lambayeque (MEJIA, 1990, p. 54). The majority of individual claims were beyond the limits established by the land reform and went up to 1,600 ha. The claims were mainly speculating on rents to be gained by Government programs (tubular wells, transandine tunnels for irrigation etc.) in the future. How much land really went to influential private farmers – which had partly been affected by the land reform – is not known. Private investment, which could be a justification for tolerating such a reconcentration of land, however, hardly takes place, partly because of difficulties to get a definite legal title on the land but mainly because there has been little evidence of upcoming public investment. This, again, has been a function of the strained relations with the international financial community, as debts have been only partially served during the García government.

### 3. Reconsidering the Peruvian Experience in the Light of New Political and Institutional Economic Theory

Before drawing some conclusions we will reconsider the Peruvian experience in the light of some new concepts of political and institutional economics, which seem to give quite a good understanding of the principal issues<sup>20</sup>. Concerning the agrarian reform of 1969 we have stated that in pre-reform times the landed oligarchy represented a major impediment to development and that its elimination can be considered a major achievement. What is the basis for such a statement besides the fact that it is referred to in many interpretations of the Peruvian experience? Firstly, there is some general empirical evidence for the argument. MORRIS and ADELMAN (1988) e.g. conclude: "With rare exceptions, economic growth and its benefits did not diffuse far where

---

<sup>20</sup> See WILLIAMSON (1985) for a general introduction, BARDHAN (1989) p. 3-15 on economic theory of agrarian institutions, STANILAND (1985) on theories of political economy, BELL (1990) on property rights in land, PUTTERMAN (1989) on the theory of APCs. For publications in the German language and in the context of developed countries see BONUS (1986) and SCHMITT (1991) and (1992).

domestic landed elites aligning with foreign export interests dominated the political process"<sup>21</sup>. Secondly, theories of political economy show how economic and political factors are interrelated and how decision making of governments analyzed in terms of neoclassical economic theory ('new political economy') give insights into mechanisms preventing government policies, which are against the interests of the ruling elites, from being implemented. Some arguments used in the literature on the Peruvian experience implicitly follow these general lines (see e.g. ZALDIVAR, 1974; LOWENTHAL, 1975; THIESENHUSEN, 1989).

Theories of political economy seem to be potentially useful to understand the forces at work when a landed oligarchy uses its economic power to influence government policy in their favour (considered as "rent-seeking", KRUEGER, 1974) and to the detriment of general development. Thus political action ("revolution from above" in Peru as reaction to social unrest) aiming at the reform of property rights as sources of political power might be justified by reasoning other than in the terms of orthodox economics, such as productivity, growth and income distribution (see e.g. GOLDSWORTHY, 1988). As BELL (1990) e.g. points out, reforms precipitated by social upheaval have been much more important in the past than those occurring in "normal" times. He refers to various examples in order to demonstrate how the latter face formidable obstacles. But he also emphasizes that tenancy arrangements (like sharecropping) generally considered as reflecting undesirable market imperfections and thus to be eliminated by land reform might be socially beneficial. He points out (p. 143) that "tenancy...is commonly a socially useful market response, which provides opportunities for the fuller employment of family resources and, over the long run, for individual mobility". Agrarian reform – or any agricultural structural policy for that matter – might therefore go one step too far when it intervenes too strongly in existing institutional arrangements within rural economies which are not well understood. BELL particularly emphasizes the dynamic role tenancy can play by serving "as a vehicle for the accumulation of assets and skills by those who start out with little of either. In principle, therefore, tenancy provides opportunities for individual mobility" (p. 161).

Looking at institutional phenomena within an economy – as in this case of property rights in land or tenancy arrangements – and analyzing, in terms of neo-classical economic theory, how they are being shaped by economic forces or how they in turn affect resource allocation is the domain of new institutional economists. Mainstream (neo-classical) economists generally refer to 'distorted markets' or 'institutional factors' when justifying shadow pricing in policy analysis or they assume profit maximization when analyzing the optimal size of firms as a function of production costs. In many theoretical treatments perfect information and unrestricted markets are assumed, allowing for the coordination of decisions via prices which signal values (scarcities) or incentives to economic agents. Relaxing some of these assumptions as well as considering distributional and institutional aspects or ethics or patterns of behaviour of individuals or organisations, is generally left to researchers of other fields, such as political scientists, sociologists or anthropologists.

New institutional economists, in turn, will go a step further and look at particular institutions like property rights, traditional tenancy arrangements, markets for land, labour and credit in rural

---

<sup>21</sup> MORRIS and ADELMAN (1988) quoted in RUTTAN (1991) p. 269.

economies or organisations<sup>22</sup> such as rural households, cooperatives or other types of firms and will analyse them on the basis of neoclassical economics<sup>23</sup>. They partly give up assumptions made by orthodox economists: information (e.g. on prices, qualities, or markets in general) is costly, 'law and order' to guarantee fulfilment of contracts is inexistent or weak, markets for coordinating decisions or conveying incentives (e.g. within a firm or outside) are absent. Coordination by negotiating contracts is costly, and so is monitoring, supervising and enforcing them. In the case of an agricultural enterprise these costs – the so called 'transaction costs' – might counteract technical economies of scale, which are reflected by production costs. These costs are very specific to a particular situation and their quantification generally is difficult, a reason why empirical studies are rare and the concept for practical application sometimes not convincing. The approach, nonetheless, as an analytical exercise seems to give insights beyond mere description of phenomena related to institutions and organisations. As the latter are considered to be weak in developing countries and one reason for stagnation as opposed to development, the approach deserves particular consideration by development practitioners.

Looking at Peru's experience with agricultural production cooperatives two closely related and sometimes confused issues are of particular interest: one concerning property rights in land and the other concerning the organization of agricultural production i.e. the question of land ownership and how land is being used, with both questions having implications for the definition of property rights. BELL (1990) points out three features of property rights in land which are to be considered when discussing issues of land reform: exclusiveness (who can use the asset and how much of the output can be claimed), transferability (whether such uses and claims can be transferred, temporarily or permanently), and alienability (if transfers are permitted in principle, whether there are restrictions on how or to whom they may be made). He discusses the complexity of these features and points out that purely individual and purely collective *forms of property rights* are polar cases. Whereas CARTER (1990) and PUTTERMAN (1989) have asserted that "corner" solutions of purely collective or purely individual production are sub-optimal *forms of organization of agricultural production*, BELL – relating to examples from China, Tanzania and the Soviet Union – notes that "the current tide seems to be running strongly in favor of the polar case of individual rights", (ibid. p. 155).

In Peru – as in many other countries – redistribution of land has mainly been justified from a distributional point of view, since the reallocation of rights in land means redistributing sources of rent or incomes, respectively – besides curtailing political power and rent-seeking, as has already been discussed. In the case of export-oriented coastal agriculture, with a comparatively high level of productivity where technical economies of large scale production can be assumed, negative effects of the redistribution of land on output were meant to be minimized by imposing *collective ownership of land* as well as *collective organisation of production* in the form of APCs, in order to maintain the traditional large-scale plantation type organisation of the former haciendas. By way of legal

<sup>22</sup> For treatment of the terms 'institution' and 'organisation' in the German language see SCHMITT (1992), based on NORTH (1991); for a discussion of rural financial markets as a particular institution see ARMBRUSTER (1990).

<sup>23</sup> See particularly STIGLITZ (1986), DE JANVRY et al. (1989), and BARDHAN (1989). In his theory of rural organisations STIGLITZ e.g. treats subjects like risk-aversion, cost-sharing arrangements (share cropping), incentives, control and monitoring of contracts, interlinkage of markets and adoption of innovations in the search for a new theory of rural organisation under the 'imperfect information paradigm'.

provisions and government intervention, however, most of the principal features of property rights to land cited above were practically eliminated.<sup>24</sup>

The resulting internal problems of APCs summarized in HATZIUS (1981) under the headings "decision-making" and "member participation" can be interpreted using the concepts of new institutional economics. The former haciendas by its authority and hierarchical structure of decision-making as well as rigorous forms of worker treatment were able to minimize 'transaction costs', particularly costs of securing the provision of inputs and outlets for production, costs of internal coordination and of securing labour input quantity as well as quality. Together with the advantages of technical economies of large scale production this plantation type agriculture has been highly profitable. In the case of APCs, however, transaction costs, particularly due to the problem of free-rider behaviour of APC members, augmented, and more than outweighed the positive effects economies of scale had on production costs<sup>25</sup>. The 'principal-agent problem' pointed out by institutional economists with respect to the difference in interests between employer and employee is difficult to be solved in APCs, as members are principal (owner and employer) and agent (worker) at the same time<sup>26</sup>. It seems that ACP-members never felt as entrepreneurs or 'principals', which comes as no surprise, taking into account what has been said about strong government involvement. With net surplus being subject to outside regulations and permanently in danger of being negative, a consciousness of 'worker' or 'agent' is apparent. Apart from being at the root of the 'labour-effort problem', this paradox also led to the deterioration in APCs' productive capacity. By ceding members the right to vote over wage increases or productivity enhancing investments – in the beginning partly restricted by government intervention – there has been a permanent bias in the allocation of financial resources against investment. The deterioration of the productive infrastructure of ACPs with a corresponding negative impact on productivity was finally enhanced by the reduction in the use of variable inputs, caused by financial problems when the government and private banks restricted production credit as a result of accumulating debts (see MELMED-SANJAK, 1991; TORRE VILLAFANE, 1990; OROZA, 1990).

There seems to be enough evidence from the Peruvian experience to conclude that by giving preference to collective ownership and by restricting important features of property rights on land as well as trying to completely eliminate traditional forms of tenancy and cost-sharing arrangements, economically and socially desirable institutions have been eliminated or prevented from evolving. Only after the new constitution of 1979 forgave the agrarian debt and legal provisions by the second Belaúnde government allowed – by majority vote of their members – to divide up CAPs in order to use assets as collateral for loans and to sell agrarian reform land as repayment for debts, have important features of property rights in land been reinstated. Unfortunately, the chance for reallocating factors of production has been missed, as the subsequent process of parcellation of

24 The restriction on rights in land holds even true for individually owned enterprises, as lower and upper limits for the size of land holdings were established and the right for buying, selling or renting land restricted.

25 It could be debated if the additional costs for outside labour hired because of the labour-effort problem called 'production costs' by CARTER and ALVAREZ 1989 p. 173, should not rather be termed 'transaction costs' considering the general difficulties of quantifying transaction costs.

26 In HATZIUS (1981) several sources are given, where the situation of APC-members has been called a 'contradiction'. For a recent detailed treatment of the 'principal-agent problem' in German see SCHMITT (1991) and (1992).



APCs suffered by ever changing rules with respect to particular features of property rights and by the inability of national and local governments to assist this process by legalizing and guaranteeing the rights as well as through agricultural services, research and extension. Positive allocative effects through new alternative institutional arrangements within the small-scale capitalist farming sector where therefore inhibited.

Within the sugar cooperatives, the internal problems described continue. In spite of reduced productivity levels and accumulating debts, wages are still being increased independently of productivity considerations and members are still extremely privileged compared to other groups of society<sup>27</sup>. Instead of a "low-effort, low-income equilibrium" (CARTER, 1989, p. 179) from which the non-sugar cooperatives escaped through parcellation, in the case of the CAA one should rather speak of the paradox of a "low-effort, high-(relative)-income (dis-)equilibrium". Managers trying to cope with the described intrinsic problems are fired e.g. when trying to introduce a more rigorous system of control and compensation of labour input or when opposing fraudulent practices of member representatives<sup>28</sup>. As members still live comparatively well, a viable solution would not only have to be proposed but also imposed by the government, or at least made very attractive. With the sugar cooperative sector still representing a strong political pressure group being able to influence policies in their favour and with political institutions in crisis, changes are not very likely to occur soon.

#### 4. Some Conclusions and Policy Suggestions

It is difficult to draw any final conclusions and give suggestions with respect to future policies for a country which is staggering from one crisis to the next, where government authority is fading away, where basic rights are no more guaranteed and where the ability to design and execute consistent policies with respect to institutional arrangements for the organization of production and distribution has shown to be weak. One conclusion to be drawn concerns the importance of analytical approaches going beyond simplifying assumptions on how human beings behave and how organizations and institutions function when analyzing the economics of agricultural production and distribution in developing countries. Issues of political power, rent-seeking, imperfect (interlinked) markets, imperfect information, risk aversion etc. cannot be ignored if transactions among individuals and organisations are to be well understood. The Peruvian agrarian reform, by eliminating markets for land and basic features of property rights in land, by giving preference to collective property rights and by imposing cooperative forms of production organisation, is an example of how costly the neglect of these issues in policy design may be. The imposition of the APCs purely with reference to technical economies of scale in production obviously ignored diseconomies, which new institutional economists explain in terms of transaction costs and imperfect information.

---

<sup>27</sup> In December 1990 a teacher's salary in Lambayeque was the equivalent of 60 US\$ per month, at the same time members of CAA Pucalá helped themselves to a monthly pay increase of 200 \$, and this in addition to a Christmas gratification of 600 \$. Without knowing the value of base salary and fringe benefits, this personal information of reliable sources gives an impression on how cooperative members are still privileged and take special helpings not justified by the financial situation of their enterprise.

<sup>28</sup> Personal communication by a former and present manager in two different CAAs.

The large sugar cooperatives still subsist and it can only be a matter of time and of a more stable political situation for a basic reform to be initiated. This reform will certainly have to take into consideration the fact that technical economies of large scale sugar-cane production and processing are existent, even though cane production on small individual plots has always been pursued and seems to be competitive with other crops. Healthy competition between CAAs processing plants for cane produced by individuals and non agro-industrial cooperatives can be observed, particularly since CAA cane production has been declining due to irrigation water scarcity and lower productivity levels. From a transaction cost point of view there seem to be advantages for processing plants being completely separated from production units. Plants could be either privately or collectively owned and run as independent, profit-oriented enterprises, thus being able to realize technical economies of large scale processing, while steering clear of APC-intrinsic problems. Idiosyncratic knowledge in cane production, coordination in field work as well as the stimulation and monitoring of quality and quantity of labour input could be much more efficiently realized within smaller cane producing units. The form of organization and size of smaller units would be determined by CAA members themselves, similar to the way smaller APCs have found their particular forms of organization, i.e. working in groups or on an individual basis.

Coordination between cane-producing and cane-processing enterprises, i.e. regulating quantity, quality, timeliness and payments, would be done in form of contracts. A variety of arrangements for interlinking product delivery with supply of credit, machinery, and productivity enhancing inputs and services are conceivable and could go a long way towards improving production technology and enhancing productivity. As an alternative and with the objective of gaining bargaining power, cane-producing enterprises would have to find forms of organisation similar to service cooperatives, now experienced by parcelled small- and medium-sized non-sugar cooperatives, for coordination in the cane supply to processing plants as well as organization of credit and input supply.

There seems to be no necessity for processing plants to secure delivery of cane through their own production units, nor for cane producers to secure an outlet for cane through cooperative processing enterprises or share holdings in a processing plant. With four competing processing plants in the area and transportation technology allowing for access to most plants from most locations of production at reasonable cost, the market solution of coordinating demand and supply seems to be the one minimizing transaction costs.

There are various issues related to sugar cane production which go beyond the scope of this paper, such as government policy with respect to self-sufficiency or the importation of sugar and the formation of internal prices, as well as the issue of substituting the permanent and highly water-intensive sugar cane crop for other crops. A certain substitution would increase the flexibility within each enterprise with respect to the generation of income and to seasonal labour use. It would also allow for a more flexible organization of irrigation planning within the irrigation district, a topic of particular relevance in case of the Chancay-valley.

The small- and medium-sized cooperatives, in their majority having been parcelled over the past 10 years, show a certain dynamism with respect to mixed individual-cooperative organisation. As in the case of CAA, however, there is no significant positive change to be expected as long as government authority is limited and insecurity with respect to legal institutions, to the guarantee of

contractual arrangements, titles to land etc. subsist. As long as the precarious political and economic situation paralyzes general development, by reducing business and employment alternatives in other sectors, there will be no relief from surplus agricultural labour. In this situation, family farms with an affiliation to larger farms or to farmer associations or CAUs with individual organisation of production but cooperative arrangements in marketing, irrigation, supply of input and services etc., seem to be forms of organisation minimizing transaction costs.

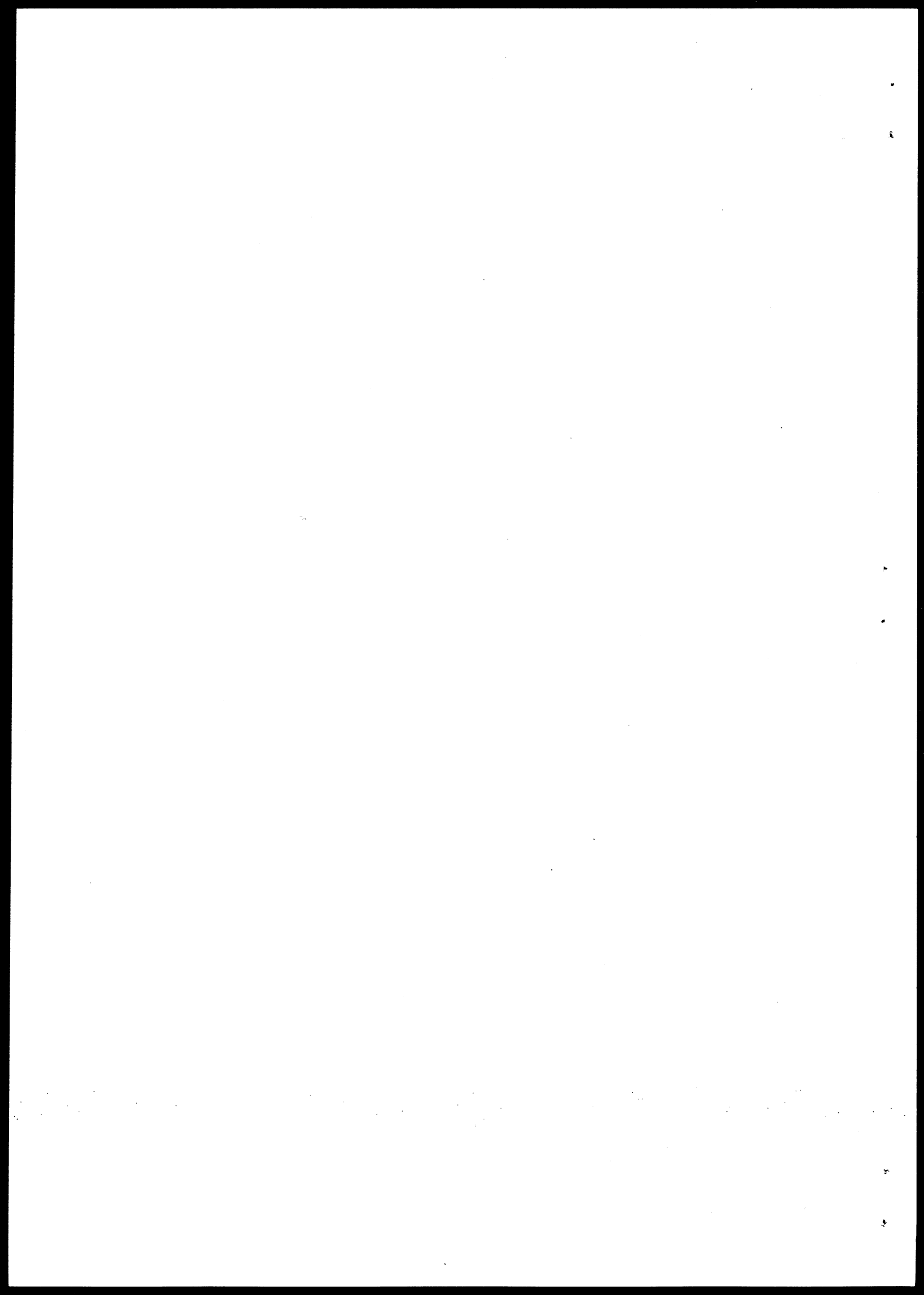
The optimal size and form of organizing agricultural production, considering production and transaction costs simultaneously, cannot be determined in a general manner. The government is therefore well-advised to leave it to the people concerned to find those forms of organization, which optimally suit their particular situation and needs. Except for the protection of traditional peasant communities, there is no necessity for giving preference to collective property rights. The market for agricultural land would gain importance and the allocation of land would improve if the registration of land titles and changes in rights was quicker and more transparent. This applies also to the registration of agricultural enterprises, which should be required to comply with legal provisions concerning equity capital, liability, labour contracts, size of land holding etc. in order to prevent losing the achievements of the agrarian reform e.g. in form of exploitative labour contracts or a reconcentration of land. Retaining lower and upper limits for both individual and corporate land holdings will be necessary to curtail the 'minifundio' problem and to prevent an extreme reconcentration of land. Upper limits on the size of land holdings might induce investment in land- and water-augmenting technical innovations by enterprises with access to capital. Allowing for tenancy contracts will give more flexibility in choosing the optimal size of an operation as well as in changing production organisation. Thus, dynamic individuals or organisations will be able to optimize the use of land and other factors at their disposition by finding arrangements which minimize production and transaction costs and improve overall factor allocation and income.

## References

- ARMBRUSTER, P.G. (1990): *Finanzielle Infrastruktur und organische Entwicklung durch Genossenschaften in ländlichen Räumen der Dritten Welt*. Organisation und Kooperation in Entwicklungsländern Bd. 24.
- BARDHAN, P. (Ed.) (1989): *The Economic Theory of Agrarian Institutions*.
- BELL, C. (1990): "Reforming property rights in land and tenancy". *World Bank Research Observer* (1990) 5 (2) 143-166.
- BONUS, H. (1986): "The Cooperative Association as a Business Enterprise: A Study in the Economics of Transactions". *Journal of Institutional and Theoretical Economics* 142, 310-339.
- BURGA, M. (1976): *De la encomienda a la hacienda capitalista. El valle Jequetepeque del siglo XVI al XX*. Instituto de Estudios Peruanos.
- CARTER, M.R., and E. ALVAREZ (1989): "Changing Paths: The Decollectivization of Agrarian Reform Agriculture in Coastal Peru". In: THIESENHUSEN, W.C. (Ed.): *Searching for Agrarian Reform in Latin America*.
- CARTER, M.R.: "Una crónica microeconómica de la evolución de la reforma agraria en el Perú". In: FERNANDEZ, A. Y A. GONZALES (eds.) (1990): *La reforma Agraria Peruana, 20 años despues*.
- CENTRO DE ESTUDIOS SOCIALES SOLIDARIDAD (1989): *La industria azucarera: 1980-88 (Informe Especial)*.
- DORNBUSCH, R. and S. EDWARDS (1990): "Macroeconomic Populism", *Journal of Development Economics* 32, p. 247-277.
- FIGUEROA, L. (1988): "Economic Adjustment and Development in Peru: Towards an Alternative Policy". In: CORNIA, G.A, R. JOLLY, and F. STEWART (Eds.) (1988): *Adjustment with a Human Face*, Vol. II Country Case Studies, p. 156-183.
- GOLDSWORTHY, D. (1988): "Thinking politically about development". *Development and Change*, 19/3, 505-530.
- GOMEZ CUMPA, J. und I. BAZAN ALFARO (1989): *Capitalismo y Formación Regional - Chiclayo entre los siglos XIX y XX*.
- GONZALES, A. (1990): "El agro asociativo en el Perú, veinte años después". FERNANDEZ, A. y A. GONZALES (1990): *La reforma agraria Peruana, 20 años despues*, Centro de Estudios Sociales Solidaridad.
- HARDING, C. (1975): "Land Reform and Social Conflict in Peru". In: LOWENTHAL, A.F. (Ed.): *The Peruvian Experiment - Continuity and Change under Military Rule*.
- HATZIUS, Th. (1981): "Ten years of Agricultural Production Cooperatives in Northern Peru", *Quarterly Journal of International Agriculture*, Vol. 20, 327-344.
- HORTON, D. (1977): "Land Reform and Group Farming in Peru". In: DORNER, P. (1977): *Cooperative & Commune, Group Farming in the Economic Development of Agriculture*, 213-238.
- JANVRY, A. de and E. SADOULET (1988): "Land-labor Interlinkages in a Latin American Context", *UC Berkeley Department of Agricultural and Resource Economics*, Working Paper No. 461.

- JANVRY, A. de, E. SADOULET and M. FAFCHAMPS (1989): "Agrarian Structure, Technological Innovations, and the State". In: BARDHAN, P. (Ed.) (1989): *The Economic Theory of Agrarian Institutions*, 356-382.
- JAQUETTE, J.S. (1975): "Belaúnde and Velasco: On the Limits of Ideological Politics". In: LOWENTHAL, A.F. (Ed.): *The Peruvian Experiment - Continuity and Change under Military Rule*.
- KAY, C. (1983): "The Agrarian Reform in Peru: An assessment". In: GHOSE, A. Kumar (1983): *Agrarian Reform in Contemporary Developing Countries*.
- KNIGHT, P.T. (1975): "New Forms of Economic Organization in Peru: Toward Workers' Self-Management". In: LOWENTHAL, A.F. (Ed.): *The Peruvian Experiment - Continuity and Change under Military Rule*.
- KONG, V. (1991): *Peru: Agricultural Sector Assessment 1990*, US-AID.
- KRUEGER, A.O. (1974): "The Political Economy of the Rent-seeking Society". *American Economic Review* 64/3, 291-303.
- LEHMANN, D. (Ed.) (1974): *Agrarian Reform & Agrarian Reformism. Studies of Peru, Chile, China, and India*.
- LOWENTHAL, A.F. (Ed.) (1975): *The Peruvian Experiment - Continuity and Change under Military Rule*.
- LÜPERTZ, V. (1978): "Entwicklungen und Reformen in der peruanischen Landwirtschaft 1969-1976", *Schriften zu Regional- und Verkehrsproblemen in Industrie- und Entwicklungsländern* Bd. 24.
- MARTINEZ, D.; M. MORON, J. RUITON, C. VILDOSO (1989): *El agro costeño: Empresas Asociativas, Realidad y Desafíos*, CEDEP, Serie: Desarrollo Rural.
- MEJIA, J.M. (1990): *La neoreforma agraria - Cambios en la propiedad de la tierra 1980-1990*.
- MELMED-SANJAK, J.S. and M.R. CARTER (1991): "The Economic Viability and Stability of 'Capitalised Family Farming': An Analysis of Agricultural Decollectivisation in Peru", *The Journal of Development Studies*, Vol. 27, No.2, 190-210.
- NORTON, R.D. (1988): "La política agropecuaria peruana en la conyuntura económica actual". En: EGUREN, HOPKINS, KERVYN, MONTOYA (Eds.): *Peru: El problema agrario en debate*, SEPIA II.
- OROZA, J. (1990): "Los problemas de gestión de las cooperativas azucareras y sus planteamientos de solución". In: FERNANDEZ, A. y A. GONZALES (Eds.) (1990): *La reforma Agraria Peruana, 20 años despues*.
- PAREDES, C.E. (1989): "From Macroeconomic Surrealism to Economic Chaos: Peru 1985-1990". In: World Bank (1989): *Developing Economies in Transition*, Vol. II, Country Studies.
- PUTTERMAN, L. (1989): "Agricultural Producer Cooperatives". In: BARDHAN, P. (1989) (Ed.): *The Economic Theory of Agrarian Institutions*, 319-339.
- RICHTER, P. (1991): "El Ajuste Económico en el Perú - La Estabilización entre el Terrorismo y la Droga", *D+C* 4/91.
- ROCA, S. (1975): *Las cooperativas azucareras del Perú, esan*.
- RUTTAN, V.W. (1991): "What happened to Political Development?" *Economic Development and Cultural Change*, Vol. 39/2.
- SCHILLER, O. (1969): *Cooperation and Integration in Agricultural Production. Concepts and Practical Application. An international Synopsis*.

- SCHMITT, G. (1991): "Landwirtschaftliche Produktivgenossenschaften in Theorie und Praxis. Kritisches zu drei Abhandlungen in Heft 1/1991 der ZfgG", *Zeitschrift für das gesamte Genossenschaftswesen*, Bd. 41, H. 4 279-297.
- SCHMITT, G. (1992): "Institutionen, Rationalität und Landwirtschaft: Der Erinnerung an Friedrich Aereboe (1865-1942) anlässlich seines Todes vor fünfzig Jahren gewidmet". *Ber. Ldw.* 70, 1-29.
- SCOTT, C.D. (1990): "Cycles, Crises and Classes: The State and Capital Accumulation in Peru, 1963-1984", in: C. AGLADE and C. FORTIN (Eds.): *The State and Capital Accumulation in Latin America*.
- STANILAND, M. (1985): *What Is Political Economy? A Study of Social Theory and Underdevelopment*.
- STIGLITZ, J. (1986): "The New Development Economics". *World Development*, Vol. 14, 257-265.
- THIESENHUSEN, W.C. (1989): *Introduction: Searching for Agrarian Reform in Latin America*. 1-41.
- TORRE VILLAFANE, G. (1985): "La Parcelación y Alternativas Organizativas en las Cooperativas Agrarias de la Costa". In: SOLIDARIDAD (1985): *Las Parcelaciones de las Cooperativas Agrarias del Perú*.
- TORRE VILLAFANE, G. (1990): "Impacto del proceso de parcelación: El caso de Lambayeque". FERNANDEZ, A. y A. GONZALES (Eds.): *La reforma agraria peruana, 20 años después*, Centro de Estudios Sociales Solidaridad.
- TORRES Y T.L., C. (1967): *La cooperativa como persona jurídica, principios y limitaciones*, Instituto Nacional de Cooperativas (INCOOP).
- URFF, W. von (1975): "Die peruanische Agrarreform". *Z. f. Ausländische Landwirtschaft*, Jg. 14, 331-350.
- WILLIAMSON, O.E. (1985): *The Economic Institutions of Capitalism*.
- ZALDIVAR, R. (1974): "Agrarian Reform and Military Reformism in Peru". In: LEHMANN, D. (Ed.) (1974): *Agrarian Reform & Agrarian Reformism. Studies of Peru, Chile, China and India*.



## Research Centre for International Agrarian & Economic Development

D-6900 Heidelberg, Ringstrasse 19

Director: Prof. Dr. Oskar GANS

Executive Secretary: Dr. Otfried C. KIRSCH

---

The Research Centre for International Agrarian & Economic Development is a non-profit organization incorporated as a registered society and sponsored by the government of Baden-Wuerttemberg. In collaboration with the Department for Agricultural and Applied Economics of the South Asia Institute and the Faculty of Economics of the University of Heidelberg, the Research Centre pursues application oriented research in the fields of economic and agrarian policy analysis in developing countries.

### Research Fields

- 1 Quantitative analysis of economic and agrarian systems
- 2 Socio-economic analysis of institutions (self-help organizations)
- 3 Planning methods

The Research Centre's principal task is to develop and implement **multi-disciplinary approaches**. This responds both to the need for more research and to the urgent requirements at the practical planning level. A vital requirement of this work is that the quantitative economic and socio-economic approaches be supplemented by giving consideration to **production techniques** and **biological and ecological factors**. This holds especially for questions dealing with food supply and facets of agricultural production which result in destruction of natural resources (deforestation, soil degradation) or serve to replace them (energy, regenerable resources). In this connection, the main analytical approaches are derived from agricultural economics, the economics of natural resources and environmental economics.



Publications of the Research Centre for International  
Agrarian Development, Heidelberg

(ISSN 0302-8704)

- 
- 1 BODENSTEDT, A. Andreas (ed.): Agrarian Structures in a Changing World. 1972. 163 p. ISBN 3-88156-014-9. (German edition: Agrarstrukturen im weltweiten Wandel. 1973. 176 Seiten. ISBN 3-88156-019-X).
  - 2 TREYDTE, Klaus-Peter, Wolfgang ULE, (eds.): Organizational Patterns and Socio-Economic Development. 1973. Bonn: Verlag Neue Gesellschaft. ISBN 3-87831-163-3.
  - 3 TSCHIERSCHE, Joachim E.: Cooperation in Agricultural Production. A Selective Bibliography. 1974. 188 p. ISBN 3-88156-029-7.
  - 4 BERGMANN, Herbert, Nasser KHADEMADAM: The Impacts of Largescale Farms on Development in Iran. A Case Study of Certain Aspects of the Iranian Agrarian Reform. 1975. 204 p. ISBN 3-88156-037-8.
  - 5 KIRSCH, Otfried C.: Vertical Cooperation among Agricultural Producers in Western Europe and in Developing Countries. 1976. 129 p. ISBN 3-88156-056-4.
  - 6 BODENSTEDT, A. Andreas (ed.): Self-Help: Instrument or Objective in Rural Development. 1976. 120 p. ISBN 3-88156-057-2. (English edition of: A. Andreas BODENSTEDT (Hrsg.): Selbsthilfe: Instrument oder Ziel ländlicher Entwicklung. SSIP-Schriften Heft 24. Saarbrücken: Verl. Breitenbach 1975. 106 S. ISBN 3-88156-041-6.)
  - 7 BODENSTEDT, A. Andreas, Wulf Dieter BRITSCH, Harald TSCHAKERT, Joachim E. TSCHIERSCHE: Agricultural Mechanization and Employment. Report Prepared at the Request of the International Labour Office Under its World Employment Programme. 1977. 151 p. ISBN 3-88156-081-5.
  - 8 TSCHIERSCHE, Joachim E.: Appropriate Mechanization for Small Farmers in Developing Countries. 1978. 106 p. ISBN 3-88156-112-9.
  - 9 KLEMPIN, Arno: Contribution of State-Directed Land Settlement to Agricultural Development. A Comprehensive Case Study of the Land Settlement and Thai-German Agricultural Development Project Saraburi. 1979. 169 p. ISBN 3-88156-121-8.
  - 10 GÖRICKE, Fred V.: Social and Political Factors Influencing the Application of Land Reform Measures in Ethiopia. 1979. XVIII, 301 p., 6 maps. ISBN 3-88156-141-2.
  - 11 KIRSCH, Otfried C., Albert BENJACOV, Léon SCHUJMANN: The Role of Self-Help Groups in Rural Development Projects. A Project Report on Documentation Research prepared for the International Labour Office with the financial support of the United Nations Development Programme. 1980. XIII. 232 p. ISBN 3-88156-157-9.
  - 12 KIRSCH, Otfried C.: Agricultural Cooperation in Thailand. Its Diversified Organisational Structure and Future Development. 1981. 118 p. ISBN 3-88156-160-9.

---

Verlag der **SSIP**-Schriften Breitenbach, Saarbrücken

## **Studies in Applied Economics and Rural Institutions,**

Publications of the Research Centre for International  
Agrarian Development, Heidelberg

(ISSN 0177-0160)

Editor: Prof. Dr. Oskar GANS

Executive editor: Dr. Otfried C. KIRSCH

- 
- 13 KIRSCH, Otfried C., Paul G. ARMBRUSTER, Gudrun KOCHENDOERFER-LUCIUS: Self-help Institutions in Developing Countries – Cooperation Involving Autonomous Primary Groups. 1984. XV, 224 p. ISBN 3-88156-283-4.
  - 14 KIRSCH, Otfried C., Johannes G.F. WÖRZ: Cooperative Promotion of Production in Egypt: The Failure of Unified Crop Rotation within Agrarian Reform Programmes for Old Lands. 1984. XIV, 87 p. ISBN 3-88156-295-8.
  - 15 MARGGRAF, Rainer: Microeconomic Analysis of Agroeconomic Systems in Developing Countries. 1986. I, 163 p. ISBN 3-88156-347-4.
  - 16 OBERLÄNDER, Lothar: A Cost-Benefit Approach to Agricultural Price Policy: The Case of Thailand. 1986. II, 120 p. ISBN 3-88156-348-2.
  - 17 GANS, Oskar (ed.): Appropriate Techniques for Development Planning. 1986. VI, 117 p. ISBN 3-88156-351-2.
  - 18 FUHS, F.W., in cooperation with J.P. BHATI, P.N. CHAUDHARY, T.N. KHUSHU: Agrarian Economy of Sunari: Stability and Change. 1988. IV, 141 p. ISBN 3-88156-417-9.
  - 19 GANS, Oskar (ed.): Environmental and Institutional Development: Aspects of Economic and Agricultural Policies in Developing Countries. 1989. VI, 82 p. ISBN 3-88156-447-0.
  - 20 WENZEL, Heinz-Dieter, Ralf WIEDENMANN: Tanzania's Economic Performance in the Eighties. 1989. IV, 102 p. ISBN 3-88156-448-9.
  - 21 KIRSCH, Otfried C., Fred V. GÖRICKE, Johannes G.F. WÖRZ: Agricultural Revolution and Peasant Emancipation in Ethiopia. A Missed Opportunity. 1989. XI, 189 p. ISBN 3-88156-457-8.
  - 22 KRAMER, Markus: Effective Protection of Agricultural Products. The Philippine Coconut Industry as an Example of an Industrial Import Substitution Policy. 1989. XIII, 105 p. ISBN 3-88156-458-6.
  - 23 KIRSCH, Otfried C., Hans-H. JAHN, Wilma PFEIFFER: Producer-owned Organizations and Quality Management in Turkey: Marketing Concepts in Agribusiness. 1993 (forthcoming).
  - 24 GANS, Oskar (ed.): Policy Reform and Structural Adjustment: The Cases of Hungary, Malaysia, China and Peru. 1993 (forthcoming).

---

Verlag **breitenbach** Publishers

Memeler Straße 50, 6600 Saarbrücken, Germany

P.O.B. 16243 Fort Lauderdale, Fla. 33318-6243, USA

## Diskussionsschriften

- Nr. 1 GANS, Oskar: Dualistische Wirtschaftsentwicklung und neoklassische Theorie, März 1982.
- Nr. 2 GANS, Oskar: Bestimmungsfaktoren sektoralen Strukturwandels, Januar 1983.
- Nr. 3 MARGGRAF, Rainer: Zur Struktur berechenbarer allgemeiner Gleichgewichtsmodelle für Entwicklungsländer, Mai 1985.
- Nr. 4 GANS, Oskar: Das Konzept der effektiven Protektion als Analyse- und Planungsinstrument, Mai 1985.
- Nr. 5 WIEBELT, Manfred: Zur quantitativen Analyse des Angebotsverhaltens landwirtschaftlicher Einprodukt- und Mehrproduktunternehmen auf der Basis des Gewinnfunktions-Ansatzes, Mai 1985.
- Nr. 6 LANG, Helmut und Rainer MARGGRAF: Zur quantitativen Analyse dynamischer sozialwissenschaftlicher und ökologischer Modelle, Januar 1987.
- Nr. 7 HATZIUS, Thilo: Konventionelle ökonomische Analyse alternativer Landwirtschaft, Februar 1987.
- Nr. 8 MARGGRAF, Rainer: Wie können Normen begründet werden? Ein Plädoyer für die Wiederaufnahme der Normendiskussionen der Ökonomie, Oktober 1988.
- Nr. 9 WIEBELT, Manfred: Zur Identifizierung förderungswürdiger Wirtschaftsbereiche, Oktober 1988.
- Nr. 10 KIRSCH, Ottfried C.: Erzeugereigene Organisationen und Qualitätsmanagement in Entwicklungsländern – das Beispiel Türkei, Januar 1989.
- Nr. 11 TSCHERSCH, Joachim E.: Agrarpolitik und Politikversagen in Entwicklungsländern, Januar 1989.
- Nr. 12 FUHS, Friedrich W.: Die Entwicklung der Landwirtschaft in der Sowjetunion, Juni 1989.
- Nr. 13 GANS, Oskar: Zur Schätzung von Wohlfahrtseffekten protektionistischer Massnahmen – mit Beispielen aus ASEAN-Ländern, Juni 1989.
- Nr. 14 WÖRZ, Johannes G.F.: State Farms in Ethiopia, Oktober 1989.
- Nr. 15 KIRSCH, Ottfried C.: Resettlement and Relief in Ethiopia, Oktober 1989.
- Nr. 16 GÖRICKE, Fred V.: Agrarian Reform and Institution Building in Ethiopia, Oktober 1989.
- Nr. 17 HATZIUS, Thilo: Entscheidungs-Unterstützungs-Systeme – einige Begriffserklärungen und Erläuterungen, Februar 1990.
- Nr. 18 HATZIUS, Thilo: Planificación de Cultivos y Riego en Chancay-Lambayeque, Perú, Februar 1990.
- Nr. 19 GANS, Oskar: Measuring Welfare Effects on National and International Commodity Markets, September 1990.
- Nr. 20 GANS, Oskar: Reforming the Economic System of Bangladesh: Main Fields of Action, Oktober 1990.
- Nr. 21 HATZIUS, Thilo: El SFD SIPLACOM CHANLAMB, Concepto y Estructura, November 1990.
- Nr. 22 HATZIUS, Thilo: El Modelo CHANLAMB para la Planificación de Cultivos y Riego, November 1990.

- Nr. 23 HATZIUS, Thilo: Manejo e Integración Institucional del SIPLACOM CHANLAMB, Februar 1991.
- Nr. 24 KLÜMPER, Serge-A. and Rainer MARGGRAF: The Nutritional Situation in Indonesia – and How it May be Improved, Februar 1991.
- Nr. 25 FRIEDHEIM, Thomas: The Twists in the Indian Tea Policy, An Industrial Organization Approach Towards the Indian Tea Economy, Juli 1991.
- Nr. 26 FRIEDHEIM, Thomas: On the Social Benefits of Auctions, Januar 1992.
- Nr. 27 HATZIUS, Thilo: Rahmenbedingungen für Projekte der Entwicklungszusammenarbeit in Peru. Eine Betrachtung aus ordnungspolitischer Sicht, Februar 1992.
- Nr. 28 MARGGRAF, Rainer: Zur Diskussion der Anwendung des Effizienzbegriffs in der umweltökonomischen Literatur, Februar 1992.
- Nr. 29 MARGGRAF, Rainer: A Model of Agricultural Supply for Indonesia, März 1992.
- Nr. 30 FRIEDHEIM, Thomas: Price Analysis of the World Tea Market, Juni 1992.
- Nr. 31 HATZIUS, Thilo: Parcellation of Agricultural Production Cooperatives in Peru – Solution to a Principal-agent Problem, Februar 1993.
- Nr. 32 HATZIUS, Thilo: Resource Use in Andean Agriculture. Neoclassical and New Institutional Concepts for Understanding Rural Institutions, Februar 1993.

## FIA-Berichte/FIA-Reports

- 1980 GÄRTNER, Gerhard: Ökologisch-faunistische Veränderungen durch Flurbereinigungen. Dargestellt am Beispiel der Carabidenfauna von Zuckerrübenkulturen in ausgewählten Kraichgaugemeinden.
- 1980 EGGER, Kurt, Gerhard GÄRTNER, Ottfried C. KIRSCH, Gudrun KOCHENDÖRFER: Ökologische und sozio-ökonomische Bestandsaufnahme der Provinz Atlantique/Benin als Basis für die Entwicklung ökologisch angepaßter Landnutzung, Gutachten im Auftrag der GTZ.
- 1980 SCHORK, Wolfgang: Die Entwicklung marginaler Gebiete in Kenia: Das Fallbeispiel Machakos, Beiträge zum Ecodevelopment.
- 1980 NEUMANN, Irmfried: Bericht über die Projektaufenthalte vom 19.10. – 4.12.1979 und 15.3. – 1.4.1980 in Nyabisindu/Ruanda, Projektnr. PN 69.2040.9, Gutachten im Auftrag der GTZ.
- 1980 GÄRTNER, Gerhard: Landschaftsökologie als Basis für die Planung von Projektaktivitäten am Beispiel Obervolta.
- 1980 GAESE, Hartmut: Energie aus Biomasse: Möglichkeiten der regionalen Entwicklung und der Substitution von Rohölimporten in Brasilien.
- 1981 EGGER, Kurt, Gerhard GÄRTNER, Jochen PFEIFFER, Marlene RICHTER: Einführung standortgerechter Landnutzungsformen in drei Dörfern der Sudano-Sahelzone Obervoltas, Feasibility-Studie für erste Maßnahmen des deutschen Sahel-Programmes, Gutachten im Auftrag der GTZ.
- 1982 KIRSCH, Ottfried C., Elmar RÖMPCZYK, Gotthardt WEBER, Ulrike FLECHSIG: Développement intégré dans la Grand'Anse/Haïti, Gutachten im Auftrag der PROIND für den Europäischen Entwicklungsfonds (FED).
- 83/1 Solidarität mit der Dritten Welt, Vortragsveranstaltung der FIA am 18. Nov. 1982.
- 83/2 GAESE, Hartmut, Josef GOERGEN, Erich ORTMAIER, Alfred PFUHL, Oskar ULLMANN und Günter WIPPLINGER: Integrierte Nutzung des Babaçu-Waldes in Nordost-Brasilien, Gutachten im Auftrag der GTZ.
- 84/1 KIRSCH, Ottfried C.: Finanzierungsinstrumente und Selbsthilfeeinrichtungen zur Förderung ärmerer Zielgruppen – Fallbeispiele aus Nepal, Philippinen, Korea und Thailand, Gutachten im Auftrag der GTZ.
- 84/2 KIRSCH, Ottfried C., Johannes G.F. WÖRZ: Genossenschaftliche Produktionsförderung in Ägypten – das Scheitern des Flurzwanges als flankierende Maßnahme der Agrarreform.
- 84/3 KIRSCH, Ottfried C.: Einrichtung eines Fonds zur Selbsthilfeförderung in der Casamance/Senegal, Gutachten im Auftrag der GTZ.
- 84/4 MARGGRAF, Rainer: Steuerpolitik in Entwicklungsländern – Defizite der Theorie und reale Probleme in Thailand.
- 84/5 KLÜMPER, Serge-A.: Projekte und Neuanträge zum Vorhaben der Ländlichen Entwicklung im Senegal, Gutachten im Auftrag der Misereor.
- 84/6 KOCHENDÖRFER-LUCIUS, Gudrun: Förderung der Frauenselbsthilfe, Djibouti, Gutachten im Auftrag des BMZ.
- 85/1 Vortragsveranstaltung am 6. Dezember 1984 anlässlich der ordentlichen Mitgliederversammlung der Forschungsstelle für internationale Agrarentwicklung e.V.

- 85/2 KLÜMPER, Serge-A.: Maßnahmen zur Sicherung der Wasser- und Nahrungsmittelversorgung in Mali und Senegal, Gutachten im Auftrag von Misereor.
- 86/1 KIRSCH, Ottfried C.: Identifizierung und Vorbereitung eines Vorhabens zur Förderung der Genossenschaften in Ägypten, Gutachten im Auftrag der GOPA für die GTZ.
- 86/2 HATZIUS, Thilo: Zur Weiterführung der deutschen technischen Zusammenarbeit im Rahmen des Projektes "Planungsberater in Äquatorialguinea", Gutachten im Auftrag der GTZ.
- 87/1 HATZIUS, Thilo: Zu Zielgruppenbeteiligung, Beratungswesen und M&E im Projekt "Développement Rural Intégré du Lac Horo", Gutachten im Auftrag der GTZ.
- 87/2 HATZIUS, Thilo: Participation du groupe-cible, vulgarisation et système de suivi-évaluation dans le "Projet de Développement Rural Intégré du Lac Horo", Gutachten im Auftrag der GTZ.
- 87/3 HATZIUS, Thilo, Kurt G. STEINER: Biologische Schädlingsbekämpfung unter besonderer Berücksichtigung der Maniokkultur, Kamerun, Gutachten im Auftrag der GTZ.
- 87/4 KLÜMPER, Serge-A., A. WARNER: Entwicklung eines Handlungsrahmen in Burkina Faso, Gutachten im Auftrag der GTZ.
- 87/5 KIRSCH, Ottfried C., Eckehart EHRENBERG, H. Brian A. FORBES, Salma GALAL: Local Savings and Development Initiatives in Egypt, Gutachten im Auftrag der GTZ.
- 87/6 KIRSCH, Ottfried C., Michel J. WARNANT: Appui aux grandes unités cooperatives, République de Côte d'Ivoire, Gutachten im Auftrag der Weltbank.
- 87/7 KIRSCH, Ottfried C.: Small Ruminants Improvement Project/Jordan - Institutions, Gutachten im Auftrag der GTZ für IFAD.
- 87/8 KIRSCH, Ottfried C. zusammen mit Lutz KERSTEN: Förderung der Ziegenproduktion in Jordanien, Gutachten im Auftrag der GTZ.
- 87/9 HATZIUS, Thilo: The Agricultural Sector within a Development Strategy for Bolivia, Gutachten im Auftrag der GTZ.
- 88/1 GANS, Oskar: Macro-economic and Macro-econometric Analysis of the Bolivian Economy, Gutachten im Auftrag der GTZ.
- 88/2 KIRSCH, Ottfried C.: Partnerschaft LAV/TARMAKBIR in der Türkei, Gutachten im Auftrag der GTZ.
- 88/3 NABI, Kazi A.: Problems of Project Appraisal and Implementation of the Development Finance Institutions of Bangladesh.
- 88/4 KIRSCH, Ottfried C., zusammen mit Hans F. ILLY und Peter KLEIN: Développement rural de St. Raphaël/Haïti. Gutachten im Auftrag der GTZ.
- 88/5 KIRSCH, Ottfried C., Mine CINER, Harald A. HANSEN, Hans-H. JAHN, Wilma PFEIFFER: Qualitätsverbesserung ausgewählter agrarischer Exportprodukte/Türkei, Gutachten im Auftrag der GTZ.
- 89/1 GANS, Oskar, Ingo EVERS u.a.: Handbuch der volkswirtschaftlichen Beratung, erstellt im Auftrag der GTZ.
- 89/2 KLÜMPER, Serge-A.: Zielgruppenorientierte Ernährungspolitik für Entwicklungsländer. Empirische Sektoranalyse auf der Basis ökonomischer Nachfrage- und Angebotssysteme am Beispiel Indonesiens.
- 89/3 HATZIUS, Thilo: Un sistema de planificación de cultivos y riego basado en computadora SIPLACOM CHANLAMB, Primer Informe, Gutachten im Auftrag der Salzgitter Consult.

- 89/4 HATZIUS, Thilo: Un sistema de planificación de cultivos y riego basado en computadora SIPLACOM CHANLAMB, Segundo Informe, Gutachten im Auftrag der Salzgitter Consult.
- 90/1 FUHS, Friedrich W.: Aufbau und Aufgaben der indischen Agrarverwaltung.
- 90/2 KIRSCH, Ottfried C., Hans-H. JAHN, Wilma PFEIFFER: Erzeugereigene Zusammenschlüsse und Qualitätsmanagement in der Türkei – Möglichkeiten einer integrierten Marketingstrategie des Agribusiness.
- 90/3 BHATTACHARYA, Pranab K. in cooperation with Friedrich W. FUHS: Sakrali Revisited, A Report of Socio-Economic Changes in 1984-85 over 1957-58.
- 90/4 GANS, Oskar: Bangladesh: A Critical Review of Present Macroeconomic and Industrial Policy. Report for the GTZ.
- 90/5 HATZIUS, Thilo und Rolain BOREL: Möglichkeiten der Förderung einer integrierten und nachhaltigen Ressourcenbewirtschaftung, insbesondere von Wassereinzugsgebieten in Honduras, Bericht über eine Projektfindungsmission im Auftrag der GTZ.
- 90/6 HATZIUS, Thilo: Regierungsberater im Ministerium für ländliche Entwicklung, Zentralafrikanische Republik, Bericht über die Projektfortschrittskontrolle im Auftrag der GTZ.
- 91/1 HATZIUS, Thilo, Arno PERISUTTI, Klaus URBAN: Bewässerung im Andenhochland, Peru, Bericht über die Projektfortschrittskontrolle im Auftrag der GTZ.
- 91/2 HATZIUS, Thilo: Un sistema de planificación de cultivos y riego basado en computadora SIPLACOM CHANLAMB, Informe Final. Gutachten im Auftrag der Salzgitter Consult.
- 92/1 KIRSCH, Ottfried C., Kowit KANGSANAN: The Thai-EC Joint Secretariat Office (JSO) for the Support and Coordination of the EC-Funded Projects under Tapioca Agreement in Thailand. Report for Agroprogress.
- 92/2 KIRSCH, Ottfried C.: Voraussetzungen und Empfehlungen zur Gründung einer Zentralgenossenschaft (Union) für Milchsammelstellen/Tierzuchtgenossenschaften in der Provinz Samsun/Türkei. Bericht im Auftrag der AFC.
- 92/3 HATZIUS, Thilo, Arno PERISUTTI, Klaus URBAN: Kleinbewässerungsmaßnahme Oruro, Bolivien. Bericht über die Projektprüfung im Auftrag der GTZ.
- 92/4 GANS, Oskar: Concept for an Advisory Group to the Policy Analysis Division (PAD)/Ghanaian Ministry of Finance & Economic Planning (MFEP), Accra. Report for the GTZ.
- 92/5 FUHS, Friedrich W.: Agrarpolitik in Indien.

