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AGRIBUSINESS CONTROL IN PHILIPPINE CONTRACT FARMING: FROM FORMALITY TO INTERVENTION*

Sietze Vellema

Wageningen Agricultural University

The most southern island of the Philippines, Mindanao, is known for the presence of agri-based transnational corporations and national agribusinesses. Pineapples and bananas have been the main commodities produced and marketed by companies with multinational marketing tie-ups to firms like the Del Monte group and the Dole Food Company. In the late 1980s, the New Product department of Dole Philippines ventured into the production of a package of other high-value crops mainly exported to the Japanese market. At a later stage, the newly established TropiFresh division became responsible for this diversification program. This company's most important operation was the production and marketing of asparagus. In 1995, TropiFresh was the second largest supplier of fresh asparagus to Japan. The company also eyed the commercialization of anthuriums and other cut flowers, and of *gobo*, a vegetable highly favored by the Japanese.

For sourcing this variety of products, Dole Philippines used a combination of plantation agriculture and several forms of contractual arrangements with a diverse group of landowners. This was the result of the company's changing access to land, which depended on government policy, management decisions and social tensions. Since the implementation of Aquino's land reform program in 1988, the company leased land from the pineapple workers cooperative, who had become the collective owner of the pineapple plantation. The expansion of pineapple production was realized through management contracts with, usually, large landowners. In the banana plantations, former workers were turned into contract growers, although most of the work was still organized by the company. The company was also engaged in marketing arrangements with locally owned banana plantations. For the asparagus production scheme, the company relied on contract growing with established farms.

By signing a contract, asparagus growers became institutionally captured by the company, but the dynamics of contract farming are not defined by a single piece of paper. In contract farming schemes, the company's main objective is to control and coordinate a whole range of agricultural activities. The practice of control, however, is not a fixed feature. This article describes how the company's control in this

* Direct correspondence to Sietze Vellema, Technology and Agrarian Development, Wageningen University, Nieuwe Kanaal 11, 6709 PA Wageningen, The Netherlands, E-mail: <sietze.vellema@tao.tct.wau.nl>. The research project is funded by Wageningen University; additional funding has been received from Netherlands Organization for Scientific Research (NWO) and LEB foundation. I thank two anonymous reviewers for their helpful comments.

Philippine contract farming scheme shifted away from hands-off management to a more interventionist hands-on style of management. It also shows the different dimensions of the company's control over agricultural production: technical, organizational, and socio-economic and political (for a similar discussion on water control see Mollinga 1998:25-30).

The main purpose of this case-study of asparagus farming is to contribute to a more precise understanding of the interaction between agribusiness and growers. Its emphasis is on the socially constructed nature of contract farming. The case-study highlights the social and technical shaping of control and reveals the negotiated nature of farming practices. I use the example of weeding, which involves both the management of farm labor and the application of certain technologies, to illustrate the evolution of control in contract farming. It indicates that this particular contract-farming scheme was not designed originally to command farming and labor practices. The main purpose of the scheme was to link small-scale farms to the operations of a company whose main strategic activity lay in marketing and processing of agricultural commodities. Along the way, the company was forced to reshape its involvement in the actual farming operations. In the beginning of the contract farming scheme, the company mainly focused on commercialization, quality control, and credit flows. These are aspects of agricultural production located at higher levels in the production chain. Later, the company decided to intervene in labor management practices and to introduce new technologies in an effort to sustain the profitability of this production scheme.

To understand the actual design of this specific growing-scheme, I will first describe the corporate and institutional context in which asparagus farming has been introduced. Secondly, the design of control over the production process will be discussed, and, finally, the practice and effectiveness of this set of control mechanisms will be analyzed.

RESEARCH APPROACH

The general approach used in this research included an ethnography of contract farming through participant observation, semi-structured interviews, situational analyses, and life and farm histories. This approach involved the use of qualitative methods to examine both the farming practices and the labor processes of contract growers, as well as the institutional dynamics and the politics of production

Interviews with growers, laborers, and technicians were crucial for understanding the actual practice of contract farming. Since contract farming is such an innovative process, many interviewees were eager to share their experience or to explain to me what they were doing and why. I tried to discover how growers adapted themselves to the prescribed farming systems and how they organized their workforce. Likewise, I discussed with technicians how they intervened in the fieldwork or in the application of certain agricultural technologies. I also observed the interactions between growers, technicians and superintendents in the field, at the office of the association, or during one of the meetings I attended.

The combined focus on both technology and society allowed me to understand the different dimensions of farming practices and managerial control. To understand this rather fluid reality, I had to understand the agricultural knowledge prevalent in the company, the learning processes of company researchers and technicians, and

the specific but diverse farming practices in the field. In the study of asparagus farming, a combination of detailed case studies of five producers and a survey among farm workers generated the main body of data about technology adaptation, organization of work, natural and technical conditions of production, and the company's control over farming practices. Life histories of these producers were documented, and included the history of land ownership, business ventures, work experience, and political careers.

CONTRACT FARMING AND CORPORATE STRATEGIES

Dole Philippines is one of the biggest transnational corporations active in Philippine agriculture. Its operations are mainly concentrated in Mindanao and involve the production of pineapples and bananas, and, recently, a diverse package of high value crops largely marketed in Japan. In 1963, the company arrived in Mindanao where it started to operate a large-scale pineapple plantation. At the end of the 1980s, the company tried to diversify the commodities it offered to global markets. The profitability of the company's main crops, pineapples and bananas, was stagnating. Dole's banana and pineapple divisions experimented with several crops, especially vegetables and cut flowers. Asparagus appeared to be one of the promising crops for production in southern Mindanao. Since 1989, the production of asparagus has been contracted out to six to eight hundred farmers. In the beginning, the banana division was responsible for introducing and marketing this new crop. Some years later, a new division of Dole Asia, TropiFresh, was created to market and produce new, high-value crops.

The asparagus venture was started at the end of the 1980s in the vicinity of the pineapple plantation, which occupies around 16,000 hectares and is operated by Dole Philippines in a municipality where almost two-thirds of the area was planted with pineapples (Table 1). The expansion program benefitted from the existing distribution system and Dole's shipping facilities. Due to the proximity of the Japanese market, asparagus could be transported by vessel, which meant huge savings for the company. Furthermore, the natural conditions of this volcanic region were suitable for asparagus production: rain is evenly spread over the year, typhoons do not pass by the region, and the sandy loam soil is loose and has good drainage.

No vacant land was available for the asparagus venture. Therefore, the company had to introduce the new and high-value crop on established farms that were planted mainly with corn and coconut. Starting in 1989, the company contracted with several groups of corn and coconut farmers (Table 2). The company offered farmers a ten-year contract. The duration of the contract reflected the expected life span of the perennial crop. In the beginning, company officials had to make a huge effort to convince local leaders and farmers of the potential benefits of a contractual arrangement. Later, the increasing incomes of neighboring farmers was enough evidence for many suspicious farmers to sign a contract. As a result of their efforts, the company was able to integrate a diverse group of small and medium farmers, and some absentee landowners, into their agribusiness operations.

Table 1. Distribution of Agricultural Land by Crops Planted in the Municipality in 1995

Crops	Percent of Total Planted Area (23,200 hectares)
Pineapple	64
Corn (yellow and white)	18
Asparagus	7
Other commercial crops	7
Other food crops	3
Coconut	1

Source: Municipal Department of Agriculture

Table 2. Expansion of the Asparagus Program

Batch	Year	Size of Expansion (ha)	Total Production Area (ha)
1	1989	195	195
2	1991	52	247
3	1991	200	447
4	1993	140	587
5	1994	183	770
6	1994	550	1320
-7	1997	-189	1131
(abandonment)			

Source: Dole-TropiFresh.

This development in Mindanao is associated with a general shift in the corporate strategy and in the international operations of Dole Food, the Los Angeles-based mother company. In 1989, the American mother-company was, according to Villarejo (1992:3), “the first company to market a full line of fresh vegetables under a brand name.” The main focus of the company became distribution and marketing. Notably, one single company, Dole Food, combined large-scale farming of a wide range of high-value crops with vertically integrated services, which included labeling, marketing, shipping, and, in some cases, financing for growers under contract. Worldwide, most of the company’s produce is grown on land belonging to independent growers or on leased land. “This could be understood in terms of the desire of a firm to keep its capital commitments as low as possible in a highly competitive and high-risk business [...] Leaseholds on land provide a way to maintain access to land but at the same time avoid the kind of investments that would otherwise be needed” (Villarejo 1992:4-5). Thus, contract farming of asparagus fitted into a global marketing scheme and was, for the contracting firm, a convenient way to secure a steady supply of high-quality commodities.

However, the institutional and organizational configurations of contract farming are varied. A wide range of production and marketing arrangements can be

combined in a single company. The asparagus production scheme in Mindanao was distinct from projects meant to complement or partially replace plantation agriculture. In general terms, contracting out of asparagus led to further social and technical integration of independent growers into complex production and marketing schemes adopted by an internationally operating agribusiness firm. Managers believed that the company's strength was found in marketing and transport, and the corporate strategy was designed accordingly. Major efforts were made to establish a strong position in the Japanese vegetable market. This required a method to guarantee a sufficient and stable supply of quality asparagus spears. Contract farming supposedly contained enough control mechanisms to reach this objective. Furthermore, research and experiments were expected to guarantee productivity and quality, as long as growers would follow advice given to them by company technicians. Apparently, the company found no need to invest directly in agricultural production, but opted for 'control at a distance'. In the following section I will describe how company management had originally designed its control over growers and their farming practices. Later, I will analyze why this form of control proved to be insufficient.

THE MAKING OF CONTROL

At the start of the asparagus project, the institutional contours of asparagus farming were in shape: the company held a firm grip on financial aspects of production, the research department had designed a farming system for asparagus farming in the tropics, and technicians were assigned to monitor farming practices in growers' fields. In the scheme's original design, the company's capability to exert control over farming practices in the field was based on:

- (1) The company's authority to handle the financial aspects of production, which included purchasing and providing inputs, a form of material credit, and giving cash advances for labor costs.
- (2) The company's knowledge about how to grow asparagus, a crop unknown to growers, in the tropics.
- (3) The daily presence of technicians in asparagus fields.

The contract for asparagus production left control over day-to-day activities to growers. Growers were, however, obliged to follow instructions given by the company and they had to use inputs provided by the company. The contract also specified quality and prices of different classes of asparagus.

This suggests that the contractual arrangement is an essential mechanism for control. However, a close examination of the company's and growers' behavior in asparagus production reveals that control cannot be reduced to one single mechanism, namely a formal say over production and marketing based on financial power. On the contrary, control has different forms, and is related to institutionalized divisions of labor inside a company (e.g. accounting and technical supervision). Table 3 (adapted from Mollinga 1998) summarizes the three interrelated dimensions of control in contract farming.

The actual design of a contract-farming scheme, which includes both material and social elements, determines what a company is capable of controlling. As will

Table 3. Three Dimensions of Control in Contract Farming, with Special Reference to Weeding

Dimension	Meaning and Practice
Technical control	Regulating-guiding-manipulating biological processes Managing natural conditions Designing technical methods to control weeds Engineering farming practices
Organizational or managerial control	Commanding-managing-administering people's behavior Organizing farm workers and recruiting labor Monitoring financial flows and production costs Changing the areas of responsibility Advising and supervising growers by technicians
Socio-economic and political control	Regulating social processes Creating consensus Dominating people's work Directing people's decisions Differentiating between growers

be made clear below, the management of the company balanced between leaving a certain autonomy to growers and exercising direct control. My argument is that managerial control over growers can best be understood as a continuum of practices (cf. Thompson 1983), which reflects management's endeavor to direct the supply of high-quality asparagus. In the following, I will focus on the company's capacity to steer farming practices.

FINANCIAL TROUBLE

For realizing the contract farming scheme, a third party became involved. The Development Bank of the Philippines (DBP) offered growers' associations the opportunity to enroll in a social lending program. Individual growers, as members of the associations, could acquire loans for planting and producing asparagus without any collateral. The bank found the reputation of the company enough assurance that debt obligations would be fulfilled. It was the bank's idea that the contract itself would act as a kind of collateral. Moreover, loans were guaranteed for 85 percent by the government owned Guarantee Fund for Small and Medium Enterprises. The company agreed to carry 15 percent of the risk.

Initially, this seemed to be a profitable arrangement for the company. Unlike before, Dole's management was no longer prepared to invest directly in agriculture. A company lawyer described the situation, "In bananas we financed ourselves, when there was still enough money. Nowadays there is no money available for direct investments, hence we sought for a new arrangement in asparagus. But we should have had better financial monitoring." Through the financial arrangements with the DBP, the company was able to finance its diversification program without high production investments.

Formally, the growers borrowed money from the Development Bank of the Philippines. The growers had a term loan of eight years to finance the initial phase of land conversion and planting, and they had a line loan to finance regular

production costs, which had to be renewed on a yearly basis. The practical arrangement, however, was that the credit flows passed through the company, whose financial department handled the accounting. The company took care of input delivery, credit in a material form, weekly labor advances based on forecasting by a technician, and cash advances, as part of the harvest proceeds.

Monitoring the financial viability of every individual grower proved to be a difficult task and this task done was done with little accuracy in the early years. Labor costs formed a substantial part of total production costs; ranging from 56 percent to 75 percent on a number of farms I investigated. Asparagus is a very labor intensive crop. Three main tasks were performed in the field: harvesting (daily for six months a year), field maintenance and weeding (continuous, less intensive during the rest period), and spraying (weekly). The application of fertilizer and manure was done a couple of times every year. On average, a grower employed three workers per hectare. Company technicians made a weekly budget for labor needs; the grower received cash advances for labor at the bank. It was common practice for growers to negotiate higher labor budgets with their technician.

By advancing labor costs and delivering inputs, the company set the financial conditions for the production process, and consequently, determined the amount spent in production. The research departments and agricultural managers gave directions to technicians on how to perform technical tasks or what inputs to use. These prescriptions were relayed to growers by the technicians, either during field visits or during one of the regular group meetings.

Technicians discussed with growers what work had to be done the coming week and what inputs were needed. One of their important tasks, aside from technical supervision, was to fill in all the necessary forms and to fulfill other bureaucratic requirements. This was supposed to facilitate the monitoring and administering of production costs by the financial department. However, interviews with employees of the financial department revealed that they had no idea what was happening in individual fields or what inputs and labor were really needed to guarantee good quality and productivity. Technicians were the ones most knowledgeable about problems and events in asparagus fields. Their confined communication with the financial department, mostly restricted to forms and requests, hampered a close monitoring of the performance of individual growers.

With the arrival of a new manager, the financial figures of growers began to play a more prominent role in the management of the scheme. After six years, the views inside the company on the financial viability of the scheme altered, and the actual control over the production process on growers' farms became a major concern for the managers. One company manager explained his understanding of the company's control:

Control is essential, we need to control to avoid stress of plants. Control refers to nature; the crop must be in good condition. An additional aspect of control refers to growers themselves. They show great inconsistency, which can easily cause stress in addition to the natural constraints. In fact, the company only has convincing power. We are a recommendation agency. We have no control. I would like to change the system. I want to go to a system in which we decide when and where to do something. I would like to control fertilization, pests, diseases, cutback and the preparation for harvest. This leaves weeding, harvesting, cultivation and maintenance to the grower.

An important reason for the shift in management policy was the increasing number of growers heavily indebted to the company. In many cases the production costs exceeded the bank's loan. While the company continued to provide inputs and cash advances for labor, a large number of growers' proceeds were no longer sufficient to support the production costs. Consequently, people inside the company began to feel the need to increase their control over what was happening in the growers' fields, especially because it was felt that the company was subsidizing the production of an increasing number of growers.

In sum, the combination of poor financial monitoring, decreasing production and quality levels, and production costs exceeding loans, endangered the company's profitability. As a result, a series of interventions started. These interventions targeted both the reduction of production costs and the improvement of yield and quality. To realize this, the company had to change its control over what happened in the fields, and thus reshape the contours of the contract farming scheme. I will use the changes in the practice of weed control to demonstrate how the company redesigned control mechanisms in contract farming.

WEED CONTROL

In 1996, company managers realized that on a number of farms yield and quality were no longer balanced with production costs. As a response to the problems in individual farms, management implemented a general change in their financial policy; it revised the financial conditions of production. As a start, the company started to reduce the number of man-days budgeted for weeding and removed field maintenance from the budget entirely. The reduced labor budgets would only be provided under the condition of 'work done'; technicians had to monitor actual work done on farms. Growers expressed their concerns about the reduction in labor budgets; they expected not to be able to keep their fields clean of weeds, especially during rainy days when weeds grow faster and growers have to hire additional labor to control the weeds.

In spite of the complaints, the shift in financial policy was enforced rather strictly. The agricultural manager consistently sought the explanation for decreasing profitability in a lack of control over labor budgets:

Production costs rose, especially due to an increase in the use of labor. Growers started to demand more and more; average yearly labor budgets rose from 25,000 to 30,000 up to 40,000 pesos. This could happen because our staff was never in the field, they were not able to judge whether the budgets allocated by technicians were really necessary. Technicians gave growers the budgets they asked for. Many of the growers did not pay their workers on time or the right amount. Growers put the money in their own pockets. That is why we want to go back to the family farm: it must be members of the family who work on the farm, then they will be paid for their efforts on the farm. We took over management of some farms, the main problems appeared to be labor management. Our technicians paid on time and supervised performance of laborers, and our experience showed that yields doubled within two months. We try to reduce costs in weeding by turning to chemical weeding in between the rows, between the plants we have to continue doing it by hand because otherwise the plants will die.

This explanation indicates that the company arrived at the conclusion to take a more interventionist approach. Changing the financial conditions, which the company had

substantial control over, proved to be insufficient to handle the problems in asparagus growing. Costs pressures and decisions by higher management forced the Agricultural Department to make an effort towards re-organizing the labor process and improving profitability. Budget cuts were one way to handle this. Another way was to 'drive' growers back to their farms. Family members had to participate in asparagus farming again. For the company, however, it was difficult to direct how growers managed their workforce. Management worked on two solutions: (1) a change in the practice of labor management and farm supervision, and (2) the introduction of labor saving technology. I will now elaborate on these issues.

Interventions in Labor Management

The designers of the asparagus scheme, the company and the bank, shared one basic assumption with many writers on contract farming; the basic production unit was a family farm. It was expected that the farmer's family would do most of the work, as one company official expressed it,

In the beginning we used a small grower concept, because many farmers here are agrarian reform beneficiaries. Only if you are wealthy will you have 15-20 hectares left after land reform. We wanted to bring these farmers together, to farm in business. It was supposed to be a 'ma-pa' operation. The parents were expected to use their family labor on the farm. All they needed was to have a land title, to be clear of debts, and to provide the labor. The company would give technical assistance, provide inputs, and arrange plowing.

All labor payments, advanced by the company, should go to the farmer's family, as well as the weekly cash advances for harvest deliveries, and the excess payment at the end of the year, from which production and labor costs were deducted. It was expected that growers would be able to finance asparagus production themselves after approximately eight years. This was based on the assumption that the family provided most of the labor, and that no additional labor costs were incurred. In order to give the project a 'developmental' label, the contract farming scheme had been promoted as a 'family affair' by both company and bank.

Reality confronted the company with a different set of labor relations. In asparagus contract farming, the majority of farm work was done by hired labor. Only supervision, and sometimes classification of spears, was done by the growers themselves. This confirms the observation made by White for contract growers in Java, that in many cases, 'small holdings' in contract farming schemes are not actually 'family farms' (family-labor based production units), but small or medium-scale enterprises based mainly on wage labor (White 1997:106).

Although the company seemed to work with the concept of a family farm, it was also obvious that management had anticipated that through contract farming the company could stay away from any farm labor problems. Through the contracts with individual growers, the company could also evade minimum wages and other regulations concerning plantation workers. Formally speaking, the grower was the employer, not the company. The company was able to shift all labor management and recruitment problems to the grower. But after a couple of years, this had a reverse effect; poor labor management resulted in lowering productivity and higher production costs.

Unintended Consequences for Productivity

Tatay was one of the dignitaries of the settler village. He was one of the old settlers

and owned a big area. Most of the land was divided among his children, but Tatay insisted to be in control of daily management. He belonged to the first batch of growers, but his farm did not yield well. One of his daily problems was to find enough workers. He recruited workers from an area near his cattle farm, but they were an unreliable workforce. Sometimes workers did not show up. Only one old woman, who had worked for this family for a long time, was always present.

His supervisor was the wife of his mechanic; Tatay also owned a truck and several tractors he rented out. The supervisor complained that the temporary workers did not perform well; they did not clean the hills, worked much too fast, and damaged the plants. She did not like the piece rate system, which Tatay preferred to use. Tatay always tried to save on labor. From the start he used a plow to do the weeding between the asparagus hills: this saved labor and was cheaper. His mechanic had invented a small cultivator, which could ride between the rows, which was also used for weeding.

The way weeding was handled by Tatay had unintended consequences for productivity and quality. Most of his asparagus fields showed very high hills due to plowing. By plowing, soil is transferred from the inter-row to the top of the hills. The result was that the crown had less volume of soil available for retrieving water and nutrients. In addition, the high beds eroded quickly after rains, especially because high beds entailed a mobile soil. The asparagus crowns floated in the high beds, which exposed the roots, and the crown had little contact with the topsoil. The reduced volume of soil available for the crown was easily heated, and the hot temperatures resulted in thin spears.

Another problem was that Tatay often delayed weed control; the weeds stood high on his fields and developed an extended root system. Removing these weeds also reduced the soil available for the plant because topsoil is removed together with the extended root system of the weeds.

Both plowing and delayed weeding resulted in an exposure of the crown, which has an immediate negative impact on plant productivity. The exposed crowns reduced the quality of spears and limited the growth of the plant. The spears harvested in Tatay's fields were short or thin, had open tips, or, even worse, were malformed. Tatay's harvests were of low quality, and, consequently, his proceeds from asparagus production decreased substantially.

Still, Tatay continued to practice plowing and using a cultivator on his farm. One of his main problems was labor. Laborers on his farm complained that Tatay never paid on time, and he paid less than other growers. He had to employ children, but they appeared to be an unreliable workforce. The company technicians had observed this situation for a long time; they gave advice, but Tatay was reluctant to change his practices. The technicians continued to complain about the state of his fields. According to the company technicians, they observed these practices in the fields of growers who did not spend their entire budget for weeding. But Tatay complained that the budget provided by the company was insufficient to meet his labor requirements.

Labor Recruitment

Recruitment of workers became a major problem for the growers after the

expansion of 550 hectares in 1994. This expansion was strongly motivated by the arrival of a competing company, Marsman Drysdale. Marsman also ventured into the production and marketing of asparagus and surveyed the area for suitable farms to plant asparagus. Dole TropiFresh was afraid to lose control over the area and decided to offer new contracts. This resulted in a substantial increase in the area planted with asparagus; from 770 hectares to 1320 hectares (Table 2). Generally speaking, this expansion demanded an additional 1650 new workers. As a consequence, an increasing number of growers faced difficulties in finding workers.

The problem increased when, two years after the expansion, the company decided to reduce significantly budgets for labor. They decreased the budget for weeding by 25 percent fewer man-days per hectare per year. Field maintenance was removed from the budget, and budgets for other tasks were reduced too. Growers strongly complained about the sudden change in budgets:

The company changed the wages for our maintainers abruptly. But we have to continue paying our workers, we have to treat them as family, otherwise they will look for other employment. We have difficulties in keeping workers at our farm, they return to their hometowns, or move to the cities, to look for work.

I observed that the experienced workers became more selective and many of them decided to transfer to other farms, for example the ones paying better and on time. In addition, wages in asparagus remained at a very low level and farm workers started to look for employment opportunities elsewhere. Since the beginning of the 1990s, the province and especially the city close to the scheme had generated an increase in economic activity and investments. Hence, poorly paid farm workers applied for better paying jobs in the city.

Particularly in weeding, problems occurred because of the labor scarcity. This situation forced growers to introduce new labor arrangements. A majority of the growers (74 percent) began to use some kind of a piece-rate-system for weeding, which, in some villages, resulted in a fierce competition between growers for labor. Unlike previously, weeding was considered as an additional job, paid per row, and was no longer included in the daily wages. Some growers relied almost entirely on so-called 'strikers' for weeding: workers who complemented their daily wages by taking up additional, temporary jobs. Other growers only hired temporary workers if their permanent labor could no longer cope up with weeds. Sometimes children were hired to do the weeding. The amount paid to the weeders depended on the height of the weeds, so high labor costs resulted from a grower's decision to delay weeding, e.g. to reduce his spending of cash advances.

Growers had difficulties finding enough workers for weeding and relied strongly on flexible workers. For these reasons, growers had a hard time to maintain their fields and to keep their farms free from weeds, which had an impact on yield and quality.

The Farm Management Seminar

The mode of labor use and labor management in asparagus farming which was partly responsive to the financial policy implemented by the management, increasingly became a concern for the company. Due to its impact on yield and quality, it was one of the factors leading to a reduction in the whole operation's profitability. During this period, the company decided to organize a farm

management seminar to discuss problems in asparagus farming: low productivity, low quality, and high production costs. But many growers disagreed with the problem as defined by the company. Like many other contract farming schemes, the growers distrusted both the company's accounting procedures and the asparagus grading qualifications at the packing plant. Growers insisted on discussing these matters during the seminar. Nevertheless, the company pursued its original plan and made farm management the key issue; all financial problems would be discussed at another occasion.

The company's goal for this seminar was to discuss problems with regards to labor management on the asparagus farms; growers did not pay their workers on time, or paid too little; growers were hardly present on their farm to supervise the work; growers did not give benefits to their workers, for example snacks, to stimulate their effort. Formally, the company had no say in these 'internal' affairs, although technicians advised growers about how to coordinate tasks at the farm, or about how to pay their workers. The company wanted to turn growers into "better" farm managers, but as one company manager observed, "Established growers have their own ideas and concepts, these are difficult to change."

During their assessment of asparagus production problems, company officials started to differentiate between losing, break-even, and gaining farmers. Some growers were busy with other ventures and new opportunities became available to them thanks to capital accumulated in asparagus. Others were de-motivated because rising production costs led to a drainage in their incomes. Some even ran into debts with the company and bank. According to the company, many growers did not pay enough attention to their asparagus farms, and during the seminar several managers tried to restore the growers' interest in asparagus farming. Later, at regular meetings, company employees tried to convince growers of the importance of labor management and of the fact that asparagus still remained the base for their newly gained wealth. They thought that the solution to low productivity and to high costs was a simple one; be present at your farm and supervise farm operations closely, otherwise asparagus farming is a losing business.

In its approach towards the problems in asparagus, the company tried to build a consensus around how to manage farms efficiently. Together with growers, the company tried to construct a workplace for growing asparagus. In this approach the growers were considered as business partners. In a parallel approach, however, the company tried to reduce the number of tasks coordinated by growers and introduced a labor saving technology. This technology may significantly reduce the numbers of tasks performed by a grower, and transform him from a manager of the farm to a worker on his own farm. Due to the ambiguity of the company, there seemed to exist two contradictory, but coexisting, approaches to handling the problems of profitability, rising production costs and financial monitoring. I will now discuss the second approach; the introduction of new technologies.

NEW TECHNOLOGIES: CHEMICAL WEED CONTROL

Until recently the company did not use herbicides in asparagus production, because the Japanese market has strict regulations concerning chemical residues. Any herbicide residues on asparagus carrying the company's brand name would certainly

undermine its carefully established position in the market. Nonetheless, the problems with labor use made the company settle for spraying the inner-rows with a herbicide widely used in the production of bananas. This technical intervention was approved after an internal investigation which showed that chemical weed control would substantially lower production costs (Table 4). Spraying of herbicides was introduced gradually and did not yet cover the whole 'plantation'. Weeding between the plants continued to be done manually.

The adoption of chemical weeding as a solution to labor problems in weeding removed a basic task from the grower's supervision. Sprayers of herbicides were hired by the company and paid according to minimum wage standards. Their work was supervised by specially assigned technicians. Thus, growers' responsibilities were narrowed to harvesting, some weeding, and field maintenance. This externalization of tasks would give company management effective control over an increasing number of activities in the production process. This might have been an implicit consideration for the company. Table 4 shows that mechanical weeding would also reduce labor costs. A locally-manufactured hand plow, invented by one of the growers, proved to be very effective, but mechanical weeding would leave more control in the hands of growers.

In sum, together with efforts to turn growers into better managers, the company introduced a labor-saving technology, chemical weed control, which would confine the responsibility of growers to some basic activities in the asparagus fields. In addition, the company tried to command fertilization and application of fungicides and pesticides more directly. This alteration might radically reshape production relations in asparagus farming and represents a tendency towards homogenization of farming practices. Management may opt for a direction in which the production process is standardized in an effort to cope with increasing cost pressures. This reflects the company's belief in its managerial and technological capacities. However, asparagus farming is difficult to standardize, and growers are best able to tackle specific field problems. I did not observe a definitive impact of the company's interventions. The growers were reluctant to comply with the possible changes in the social relations in contract farming. Furthermore, it was the company's main concern to restore their control over the supply and quality of asparagus, and to reduce production costs. It was not their explicit objective to transform social relations with growers. This explains why the company also tried to improve the growers' management capabilities.

DISCUSSION

This article discusses the capacity of a division of the Dole company to direct farming practices, labor management, and production costs in contract farming in the Philippines. The contract farming scheme suited the company's new global corporate strategy towards diversification. This contract farming scheme originated at a time when the transnational food corporation began to focus much of their resources on distributing and marketing their products on a world-wide basis. Asparagus were discovered to be a highly profitable niche in the Japanese market.

Table 4. Monthly Costs for Weeding (pesos per hectare; estimated by company)

Costs	Manual Weeding	Mechanical/Manual Weeding	Chemical Weeding (hills not included)
Labor	P 1800 (30 man-day/ha)	P 1080 (18 man-day)	P 234 (2man-day/minimum wage)
Material	none	P 120 (2 man-day/hand plow)	P 380 (herbicide)
Total	P 1800	P 1200	P 614
Savings (compared to manual weeding)	-	P 600	P 1186

Source: Dole-TropiFresh.

The company's attention shifted away from farming, and it became engaged in global sourcing, for which a steady supply of high-quality commodities is needed. The asparagus production scheme originated in this corporate context, but the specific terms of the scheme were formulated by the company's local division and reflected the existing land tenure situation. One major concern in the company's expansion program was to get access to suitable land, which is scarce in southern Mindanao.

Offering contracts to small and medium farmers provided the solution. Contract farming facilitated the introduction of asparagus production on established farms and the company's diversification program could proceed. The pre-existing land tenure situation resulted in a diverse population of 6,800 contract growers. In the beginning, the company believed that financial control, prescriptive farming practices, and agronomic research would be sufficient to guarantee a stable supply of asparagus and, at the same time, maintain the profitability of the contract farming scheme. However, along the way management encountered difficulties to sufficiently control and coordinate production tasks and related activities. It was a complicated task to manage the diversity of farming practices and labor practices on the farms. This diversity was related to farm size, labor management by the grower, sharing of farm income with workers, and technical skills of grower and laborers. The formal arrangement could control field activities and financial flows only to a limited extent. When the company became aware of rising production costs, lowering productivity and decreasing profitability, management decided to take a more interventionist approach.

In this article, the practice of weed control has been examined to illustrate how the company intervened in the production process in growers' fields and how it re-designed its control mechanisms. This examination suggests that contract farming can best be understood as an evolving and complex institutional arrangement which engineers both the regulation of various natural conditions as well as the management of labor on dissimilar landholdings. Contracting out of asparagus production obviously led to 'distinctive work routines, new on-farm technologies, and labor processes' (Watts 1994:34), but farming practices, field productivity, and quality

of asparagus spears were extremely varied; an exclusive technological dominance of the company did not exist in asparagus production. In this article I argue that this variation is a cause and effect of the way the company tries to materialize its control over the labor process of contract growers.

The study found that the company exercised varying forms of control, and varying degrees of coercion, over the production process. In the case of the contractual production of asparagus, control balanced between the implementation of a formal institutional arrangement and the direct supervision over specific tasks. The reconstruction of the practice of weed control showed that, initially, contract farming allowed the company to reduce risks, to cut fixed costs and investment, to enlarge flexibility, and to shift the responsibility for labor discipline to growers, while at the same time it could retain effective control over the production and marketing processes. However, due to unforeseen increases in labor costs, company managers decided to alter their relationship with growers, although their actions revealed an ambiguity about how to approach the growers. The company's approach to engineering social and technical control over asparagus production contained two contradicting but coexisting tendencies.

On the one hand, growers were trained to become better managers; that is, to be independent farmers who organize and coordinate the production process. This was part of an effort to re-establish the family as the basic production unit in which it is the grower's responsibility to manage labor and productivity. The company realized that they needed a motivated grower who would take good care of the sensitive plants, make difficult agricultural decisions, and supervise field maintainers and harvesters. In this sense, contract farming is confined to linking independent small holders to a larger agribusiness which requires specific forms of control.

On the other hand, the company tried to externalize and to alter the practice of weed control by introducing herbicides into the farming system. The company took over certain aspects of production in an effort to regain control over what actually happened in the field. An increasing number of tasks became directly supervised by company personnel, which restricted the grower's involvement to only a few aspects of primary production. In this sense, contract farming moves closer to a plantation-like production form, in which labor and production are coordinated centrally and in which the grower's responsibility is limited to basic farm work. Whether the growers will confirm these changes remains to be seen.

In my view, asparagus growers will not easily be turned into workers on their own land. Entering the growing scheme transformed farmers into managers of a complex farming system. Many of these growers became successful commercial producers who relied heavily on hired labor. The article shows that asparagus farming required a large number of hired laborers, a number the grower's family could not provide. Most likely, cheap labor will continue to be available for growers due to unemployment and landlessness in the villages, and due to the continuing marginalization of farmers in the nearby provinces. This is the reason why we have to combine an analysis of contract growers with an 'awareness of tendencies to differentiation and wage labor within contract-farming communities' (White 1997:104).

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