Biological Agriculture and Horticulture, 2000, Vol. 17, pp. 247–278
0144-8765/00 $10

Printed in Great Britain

Labour, Livelihoods and the Quality of Life in Organic Agriculture in Europe

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ABSTRACT

One argument for supporting organic farming has been that it requires more labour and leads to higher rural employment. On the other hand, the high labour costs may constrain the development of the organic sector. This paper reviews the current knowledge about labour use changes in the conversion to organic farming in Western Europe. It discusses how key concepts derived from feminist literature on rural women and agriculture can enlarge the existing knowledge of labour in organic farming which is mainly a product of farm management approaches.

INTRODUCTION

This paper addresses how the development of organic farming determines the use of, and is influenced by, a central human resource, labour. Organic farming differs from conventional farming because of the absence of synthetically compounded fertilizers, pesticides, growth regulators and livestock feed additives. The recycling of plant nutrients, biological nitrogen fixation, hand weeding, and husbandry methods to control pests may imply changes in labour requirements (Dubgaard, 1994). Changes in labour requirements may also result from new types of crop rotation, fallow management and livestock-crop interactions as well as from other ways of marketing products. Many farmers market their products in special niches where they obtain premium prices. The question emerges if and how conversion to organic farming leads to changes in labour requirements and its effects on labour organization.

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This question is relevant as higher labour requirements may impose constraints for the competitiveness and growth of the organic sector. On the other hand, higher labour requirements are sometimes perceived as one of the merits of organic agriculture when this means higher rural employment. Comparative research in different European countries reveals that, under present economic and political conditions, lower costs (lower expenditures on inputs) and premium prices for organic produce compensate to a large extent for lower returns that result from possible lower yields, lower-value crops in rotations, and higher labour costs (Lampkin, 1994a, 1994c; Howard-Borjas, 1996). The reduction in yields varies according to crop and region; the dependency on premium prices is not the same for different products. For example, in Denmark, in 1989, organic crop yields were about 40% below the conventional average and milk production per cow was 15% lower; in the same year, farmers obtained 75–100% price premiums on organic grain and vegetables, 200% on potatoes, and 25% on milk (Dubgaard, 1994). However, premium prices are not guaranteed over the long term because of rising supply, which makes it uncertain that higher labour costs will always be compensated in the future (e.g. Padel & Zerger 1994; Leeuwen *et al.*, 1998). This may generate a crisis in the organic agriculture sector.

A higher demand for labour would also imply new concerns about possible sources of supply of this labour. Most agricultural production in Europe is carried out on family farms. Changes in labour use may increase the demand for family labour and/or for hired labour and will probably affect the balance between them. It can be expected that this will also affect internal labour organization, based on gender and age, within the farm household.

This article addresses these various questions with an exploratory review of existing literature. The first part deals with the differences between organic and conventional farming with regard to labour requirements, remuneration of labour, and sources of labour. The second part deals with qualitative changes in labour which result from conversion to organic agriculture. It emphasizes the importance of exploring how managers of different types of farms, family-members with conflicting interests, and employed workers perceive and value changes in the content of work and working conditions differently. These different perceptions are shaped by, and in turn determine, processes of conversion to organic farming. The central argument is that current studies of labour in organic agriculture rely too heavily on a narrow definition of labour as applied by farm economic approaches while a broader concept of labour would open up new crucial domains for investigation. The second part of this article explores the nature of these domains.

CONCEPTS OF LABOUR IN AGRICULTURE

This paper reviews the literature on labour in organic farming and observes that most studies use a narrow concept of labour. Women and gender studies have, since the late 1960s, initiated a theoretical renewal of labour studies and developed a broader and more inclusive concept of labour. It depends on the definition of labour what is being measured. Studies that are concerned about women's economic activity (Dixon-Mueller & Anker, 1988; Howard-Borjas, 1996) have observed that conventional approaches restrict themselves to measuring remunerated labour or, in any case, labour efforts oriented toward the market which include the labour to produce a product that is sold on the market. Other definitions of labour are possible which capture a far greater range of work. These include all production of goods that are destined for home consumption, barter, or sale for money, and labour that contributes to satisfying essential needs of families with respect to goods and services. In this latter broad concept of labour it is equally important to measure the labour required to wash clothing, harvest crops, prepare coffee for sales representatives, or to work in the home garden.

The concept of 'livelihood' has become important to understand the different forms of labour. Livelihood refers to the resources people use to obtain food, shelter and so on. The concept has been developed in literature dealing with rural development issues in the Third World. Livelihoods are composed of a portfolio of activities and strategies based on a wide range of 'resources', all of which are the subject of gender analysis (Jackson, 1994). This includes domestic work, work in the agricultural unit, non-agricultural work in the farm enterprise and off-farm work. Influenced by third-world studies, students of work on European farm enterprises have revised the concept of domestic political economy in order to give full attention to the diversity of livelihood strategies and work practices (e.g. Whatmore, 1991). This approach captures the interdependence of family and enterprise, organized around the social relations of kinship and household. These social relations still define, to a large extent, organic agricultural production in Europe.

Friedmann (1980, 1986) argued that the internal structure of the household and its reproduction of the household, shaped by family ideology, are essential elements for understanding how broader economic processes such as commoditization are translated at the farm level. Commoditization is the process whereby goods (use values) become commodities (exchange values) and where the production, distribution, and consumption of these goods is increasingly incorporated into global capitalist economies and shaped by commodity values and relations. In an effort to characterize the labour spheres in the family farm household, Whatmore (1991) distinguishes four 'labour circuits': (i) agricultural labour which is directly related to the cultivation or husbandry of plants and animals and which can be manual or administrative, (ii) domestic household

labour including childcare, food provision, housework, laundry and shopping, (iii) non-agricultural farm labour, for example running farm shops and camp sites, (iv) off-farm wage labour consisting of off-farm paid employment, which generates money-income for the household/farm budget. These labour circuits are theoretical concepts; in practice these circuits are inextricably intertwined. The analysis of labour relations on family farms should therefore pay attention to all labour circuits and not separate or reduce them as the literature on farming does: although it pays attention to labour, it reduces the discussion to parts of organic agricultural labour only. The gender division of labour on farms is shaped by both changes in the farm economy during the process of modernization, which Whatmore further specifies as a process of commoditization, and the shaping of specific relations of power between sexes through the kinship ties of marriage, the household ties of economic dependence and familial gender ideologies within which the construction of women as 'wives' takes place.

A main contribution of the livelihood literature is that it goes beyond the measuring of labour tasks as this tends to reduce gender differences and struggles to a description of women's roles. In addition to gender divisions of labour and responsibilities, emphasis is given to gender divisions in access to and control over incomes, both cash and in kind, since men and women vary in both the acquisition and disposal of incomes (Jackson, 1994). This requires an analytical framework that conceptualizes labour employed in direct production not differently from labour used in, for example, the home garden, off-farm-employment, or non-agricultural farm activities. It looks at (i) timing and availability of family labour for farm activities, (ii) trade-offs in use of household resources, and (iii) interrelations and interdependencies between spheres, such as cooking for farm hands and farm family, composting and garbage disposal. As discussed below, however, current bookkeeping databases which are used for national accounting tend to focus primarily on labour used for cultivation and husbandry tasks. Case studies in farm economics also tend to restrict themselves to replicate these biases, undercounting contributions made by family members to the organic farm and the conventional farms as well.

Apart from contributing to new approaches to measure labour in its various manifestations, gender studies has also made a strong contribution to the study of various aspects of the quality of labour. The 'quality of labour' involves questions about (i) the content of work, e.g. the possibilities of defining tasks, or developing and applying knowledge, (ii) labour relations, e.g. gender differences in controlling the type and amount of work, (iii) working conditions, e.g. the intensity and physical work load or the experience of health and safety, and (iv) the terms of employment, e.g. remuneration, social security, insurance, and child care (Van Ruysseveldt, 1989; Mok, 1990). It involves, furthermore, an exploration of the meanings and values of labour, and how people identify themselves with specific labour positions in the labour organization.

A third important concept which locates the issue of labour and labour

organization in its context is 'social differentiation'. Social differentiation refers to the question of who can participate in specific economic development processes, either conventional or organic production, and who cannot and is socially excluded. The analysis of social differentiation entails an exploration of the conditions under which specific farms convert or do not convert to organic farming, enter agricultural production or got out of business. Besides these relations between farms, social differentiation also implies a study of gender and ethnic differences within the workforce and the relations between farm manager and workers, as well as gender differences within the farming household.

LABOUR REQUIREMENTS IN ORGANIC AGRICULTURE

Several studies observe changes in labour requirements in organic farming in Europe. Most of these studies use a narrow definition of labour. The literature provides evidence that labour use tends to be higher in organic farming. Rapp's study (1998a, 1998b) shows an increase in labour use in a sample of 448 farms in Germany that have converted to organic farming. Rapp found that the labour force nearly doubled as a result of the conversion to organic farming (Table 1).

Other sources support these findings. The Dutch government noticed that labour use is 20% higher in organic livestock breeding and 50% higher in organic arable farming and horticulture (Bukman, 1992). Padel & Zerger (1994) compared the performance of organic and conventional farms in western Germany in 1992/93. The data they present suggest that there is a potential for organic farming to support higher employment: the total labour force per farm was 12% higher, and per hectare the labour force was also 12% higher, whereas organic yields were 30–40% lower. Bondt *et al.* (1997) calculated the increase in rural employment if 10% of the current area in the Netherlands that is under arable farming, vegetable cropping and dairy farming were to be converted to organic production. In arable farming, 2615 FTE (full time labour equivalents)

TABLE 1

Changes in total labour force on 448 German farms which converted to organic farming. Calculated from Rapp (1998a).

	Labour force (full time equivalents)				Relative share (%)	
Labour force in	Before conversion	After conversion	Increase %	Absolute increase	Before conversion	After conversion
Production	549	868	58	319	91	71
Processing	21	85	309	64	3	7
Marketing	36	262	627	226	6	22
Total labour force	606	1215	101	609	100	100

would be created, but most of the labour would be concentrated in the summer months. In vegetable cropping, 170 extra jobs would be created, while in dairy farming they estimated an increase in labour requirements of 5%. These studies compared existing conventional farms with existing organic farms, or models of farms, only by taking a snapshot in time, while Rapp looked at changes over time, on farms that converted to organic farming.

Comparisons between conventional and organic farms tend to be very difficult to interpret (Lampkin, 1994b; Marino *et al.*, 1997). One of the reasons is that it is difficult to define what are comparable farms, for example whether these should be grouped according to size, amount of capital, crops/farm activities or other variables. Several studies which compare conventional and organic farms nevertheless raise important questions regarding the various factors that influence larger or smaller differences in labour use.

One factor is the type of farm activity. Padel & Zerger (1994) cite Schlüter who found that wage costs are 20–200% higher on bio-dynamic farms in Baden-Württemberg (Germany) as a consequence of an increase in the cultivation of root crops and vegetables. It was also found, however, that there was little difference in the labour requirements for cereal and livestock enterprises between conventional and bio-dynamic farms. Dubgaard (1994) found that organic farms in Denmark use about twice as much labour per hectare as conventional farms. This difference is partly explained by a larger share of labour-intensive crops such as vegetables and of labour-intensive dairy production in organic farming. "If these structural differences were eliminated, labour requirements of organic farming would probably exceed conventional averages by about one-third only" (Dubgaard 1994).

Another factor is the time of measurement. In their analysis of the data from the German Agrarbericht between 1981/82 and 1991/92, Padel & Zerger (1994) found an initial increase in the workforce on organic farms. In the second half of the 1980s, a decline in the number of FTE workers occurred. By 1991/92, the FTE use per 100 ha was only about 10% higher than on conventional farms.

A third factor that can be derived from the same study is farm size. Padel & Zerger (1994) discuss a study of 250 farms in Baden-Württemberg carried out in the mid-1980s that found that the differences in labour inputs are much higher on small organic farms (160% more FTE ha^{-1} than conventional farms on farms under 10 ha) than on larger organic farms (44% more FTE ha^{-1} on farms over 50 ha). A more differentiated representation of how labour use may differ across farms of different sizes is shown in Table 2. Larger farms employ much less labour per hectare. No information is given about the production activities that were carried out on the different farms while it makes a lot of difference if it is dairy farming or horticulture. Again, data about the relation between production activity, farm size, and labour use are lacking. Most studies only provide aggregated data even though farm size and production activities define labour requirements.

TABLE 2

Labour use on organic farms by farm size, Germany, 1988/89–1991/92.

Farm size (ha)	Labour use (FTE* 100 ha^{-1})	Number of farms
<20	13.5	2
20–30	7.4	13
30–40	5.6	11
40–60	4.1	10
60–80	2.7	12
80–100	2.9	4
>100	2.2	6
Total	4.9	58

*Full-time equivalents (2200 h $year^{-1}$). Source: Padel & Zerger (1994).

If we consider the available information as evidence that organic farming tends to require substantially more labour than conventional farming, at least in various production sectors and countries, the question arises as to what the consequences of the increased use of labour and higher labour costs are for farm incomes and for the remuneration of labour. Padel & Zerger (1994) found a higher profit rate for organic farms since 1986/87, but only when organic farms were compared with a comparison group. In 1992/93, profits per hectare and per farm were 8% higher on the organic farms. However, when they compared organic farms with all conventional farms, the profit levels on organic farms were lower. Returns to family labour (profit per FTE) were 15% higher for organic farms than for the more carefully matched comparison group, and also higher than on all conventional farms. Returns to total labour (family and employed labour) were 9% higher on organic farms than on the comparable conventional farms, but 10% lower than on all conventional farms. Padel & Zerger (1994) conclude that organic farming has the potential to support both higher employment and higher returns to the family and hired labour employed.

Dubgaard (1994) arrived at a similar conclusion for Denmark in 1988: "compared with conventional farms of similar size (acreage) and enterprise structure the remuneration of labour was significantly better in the organic sample". However, such situations depend on conditions which may change rapidly. Padel & Zerger's study (1994) refers to a period when organic wheat and rye prices were 1000 DM t^{-1}, but these dropped in the 1990s to 600 DM t^{-1} because of oversupply, itself a consequence of schemes subsidizing the conversion to organic farming. This price drop probably resulted in much lower returns to labour. Furthermore, Dubgaard (1994) compared organic farms with full-time farmer heads with conventional farms with part-time farmer heads, which happened to be the most comparable farms for other reasons. When he compared organic farms with full-time conventional farms, the latter's remuneration of labour per hour was 40% higher than the organic average.

It can be concluded that several data sources confirm the view that conversion to organic farming increases labour requirements in various European countries. This increase, however, is not general, and variations for different farm activities will be discussed below. At certain moments and in specific places, receipts in organic farming have been high enough to support not only higher labour use, but also better incomes. This observation is supported by a wider range of literature that does not directly investigate labour requirements but that makes short statements that higher labour requirements exist in organic farming (e.g. Vereijken, 1992; Mansvelt, 1993; Vartdal and Loes, 1994; Vereijken *et al.*, 1998). Crucial questions with regard to labour, however, remain unanswered by the literature; especially on what type of farms, with what kind of activities, labour requirements increase. The data that are used by the cited studies do not provide clear and coherent information to answer this question fully. They only suggest that we may expect a substantial variation in labour requirements, which is a result of, among other factors, farm size, type of activity and full-time or part-time farming.

In situations different from those in European countries, with a different history of mechanization and land value-labour cost ratios, this increase in labour requirements has not been observed in this way. In a study of Wisconsin U.S.A. dairy farms, Anderson (1994) found that "labour (milking, cleaning the barn, and feeding livestock) was greater for the conventional-chemical farmers", and she continues: "the net return per hour of labour was higher as well". Chiappe & Flora (1998) interviewed farming women in the U.S.A. who argued that sustainable practices decrease labour time and increase free time. Wynen's (1994) data on Australian cereal-livestock farmers may suggest lower labour costs per hectare on organic farms, although the difference with conventional farms was not statistically significant.

LABOUR REQUIRED FOR DIFFERENT ON-FARM ACTIVITIES

Researchers differ in their points of reference since some only consider primary production activities while others refer to labour changes at the farm level. Table 1 makes clear that processing and direct marketing become much more important after conversion, at least in Germany. Seventy-nine percent of the organic farms were involved in direct sales to consumers. Of these farms, only 29% practised direct marketing before conversion (Rapp, 1998a), so that a higher relative share of the entire labour force on these farms is used for direct marketing. The absolute increase in labour requirements is highest for primary production, but processing and marketing entail, in general, new activities which can further change the farm structure which will have important implications for the entire organization of labour on the farm.

Several sources confirm the increase in labour at the level of production. The

literature, however, contains several ambiguities mainly due to problems of comparison of labour use in conventional and organic farming. One of the difficulties is that many researchers investigate single crops and not rotations, while the latter may be more important to fully understand the characteristics of organic farming. There may be small differences in labour requirements for specific crops but, when rotation cycles are changed, labour in the entire rotation cycle should be considered and not only in specific crops. No studies have been found that have done this. Nevertheless, even at the crop level, existing data show striking differences in labour use between conventional and organic farming (Tables 3 and 4). According to Bouwman (1996), the higher demand for labour in organic cultivation is mainly caused by non-chemical weeding and a lower level of mechanization in harvesting and transporting.

From Table 3 it can be derived that labour requirements for most crops increase by 15–70%. Potato and beet are special cases as they have low labour requirements per hectare in conventional farming. The proportionately high increase given for these crops in Table 3 should be interpreted with caution.

Table 4 also shows a crop-specific increase in labour demand on organic farms. Apart from his study, Näf (1995) also looked at pilot organic farms where he found an increase in labour requirement of 6.5% compared with conventional farming. Only production activities on this mixed farm were included and no marketing activities. No extra labour time was required for dairy.

The findings of Bouwman and Näf contrast with Padel & Lampkin's (1994b) conclusion that "there is no evidence that labour requirements for *existing* enterprises increased during conversion". Padel & Lampkin report "changes in labour requirements on case-study farms ranging from an increase of 100% to a decrease of 50%. The increases in labour use were typically in the range 10–25%".

TABLE 3

Labour demand in organically and conventionally cultivated crops on experimental farms in the Netherlands, 1993/94 and 1994/95 (source Bouwman, 1996).

Crop	Labour demand (h year^{-1})		Increase (%)
	Conventional	Organic	
Potato	30	185	900
Broccoli	300	500	67
Beetroot	25	235	840
Bunched carrots	1000	1140	14
Carrots	260	350	35
Leek	1000	1150	15
Brussels sprouts	275	370	35
White cabbage	500	700	40
Green cabbage	400	600	50

TABLE 4

Labour demand in organically and conventionally cultivated crops on 26 organic farms in Switzerland (source Näf, 1995).

Activity	Labour demand (h ha^{-1})		Increase (%)
	Conventional	Extra in organic	
Pasture	19	3	16
Wheat	22	6	28
Barley	22	8	36
Green maize	30	20	67
Potato	250	85	34
Carrot	500	225	45

They see this increase not as a consequence of changes in a particular enterprise, for example changes within the cultivation of one crop, but as "associated with the introduction of more labour-intensive (but high-value) crops and/or production techniques, on-farm cleaning, grading, processing and marketing of produce, small-scale experimentation with new crops as well as increases in farm size". This means that there is an increase in total on-farm tasks rather than more labour hours for specific crop cultivation tasks.

The question can be raised whether a higher demand for labour is a long-lasting consequence of the specific technical requirements of organic farming. It could also be a more or less incidental or short-term situation related to different stages of the conversion process. Lampkin (1994b), for example, suggests that it may be possible that higher labour costs are not characteristic of organic systems but rather are a consequence of restricted capital availability which prevents adequate mechanization (e.g. when farmers are newcomers, or due to poor financial returns to organic management). Many organic farmers are 'newcomers' with few farming skills and low levels of capitalization and it may be postulated that these small farms use relatively more labour to obtain a certain level of output. Labour requirements will become similar when organic farms begin to bear more resemblance to conventional farms in terms of size, capital, and labour force skills.

Padel & Lampkin, however, do not refer to studies of changes in specific tasks as do Bouwman and Näf. In fact, Lampkin provides little evidence to show that labour organization on organic farms will soon resemble that on conventional farms. Nevertheless, the implications of his argument are that one should recognize the dynamics of organic farming and the changes in farmers' background and skills as well as the level of capitalization. Studies are required which explore the relations between different variables and which investigate labour changes at different levels in order to obtain a more complete understanding of changes in labour requirements. The existing literature offers little detailed information about complex changes in production processes, para-

agricultural activities and farm organizations that go together with conversion to organic agriculture, nor about the related implications for the labour force. But, even though the literature tends to look at single factors and not at interconnections, it helps us to draw up a list of crucial factors. The following factors may influence labour demand and labour organization and can make a difference between conventional and organic farming.

Crop choice, more labour intensive crops: Of particular importance here is the absence of synthetic fertilizers which increases the need for nitrogen-fixing crops and green manure. This may entail the labour-intensive cultivation of low-value crops. The effect may be a downward pressure on labour remuneration. Another factor may be a shift to more labour-intensive crops such as vegetables. Rapp (1998b) found that, after conversion, many farms started to cultivate horticultural crops. Before conversion, 63 out of 448 farms cultivated horticultural crops, increasing to 175 farms after conversion.

Rotation systems and mixed cropping: Prevention of pests and diseases through crop rotation is crucial for organic farming. Because of the larger variety of different crops in a rotation, labour intensity may increase. As a larger number of crops is cultivated, which increases the number of seasons before the same crop is sown on a particular field, individual parcels may be smaller. This may increase the total amount of labour needed for cultivation, although it may also lead to a more efficient cropping calendar whereby labour demand is more evenly distributed. Mixed cropping is another technique that will generally require more labour, since mechanization of cultivation tasks is more difficult in mixed cropping systems.

Non-chemical pest control, including weeding: Higher labour requirements for weed control are often mentioned as an important characteristic of organic crop production (e.g. Bouwman, 1996; Vereijken *et al.*, 1998). Although there is no need to spray herbicides, more labour time is generally required for mechanical or hand weeding.

Nutrient supply: Synthetically compound fertilizers are not used in organic farming. Therefore, organic farmers may need more labour to recycle plant nutrients and composts, and to apply animal manure.

Degree of mechanization, especially in harvesting and transport: Organic farms in the Netherlands are less mechanized in the harvest and processing-phase due to the specific farm structure that results from organic production methods and a relatively small market for labour-intensive crops (Bouwman, 1996). The situation on capital intensity seems to be rather diverse in different countries and sectors. Dubgaard (1994) finds that organic farms in Denmark are not less capital intensive than conventional farms.

Degree of specialization/number of agricultural activities: Mixed-farming is often perceived as a preferable form of production as it generates positive crop-livestock interactions, even though it may involve higher labour requirements. In the Netherlands, the 'ideal' of a mixed farming system is difficult to realize. Although the percentage of mixed farms is somewhat higher in the organic sector than in the conventional sector it is still very low. In 1996, only 13 of 554 farms substantially combined arable farming with livestock raising (CBS, 1997a). Specialization, however, may structure organic farming in ways that are not always congruent with organic farming principles.

Level of knowledge intensity: Innovation, experiments, exchange of knowledge, and adaptation of knowledge seem to require more time from the farm manager as organic farming is more knowledge-intensive. This is especially the case in the conversion period. Instead of simply following general prescriptions, the farmer has to learn about a complex eco-system and adapt general insights to the local conditions of his/her agro-ecosystem. For example, site-specific crop-weed interactions have to be observed and interpreted in order to develop optimal weed control instead of simply spraying herbicides.

Timing: The importance of preventative measures versus correction measures increases in organic farming. In weed control, for example, optimum timing becomes very important. To achieve this, more labour may be required, in the sense of managing this timing, and carrying out more small tasks instead of one larger task.

On-farm processing: On-farm processing not only provides the possibility of value adding. Like direct marketing, on-farm processing is often a condition for obtaining organic premiums, for example when no market exists for products. Cheese manufacture provides a well-known example in areas where an infra-structure to recollect organic milk does not exist.

Direct marketing: Organic farms are much more involved in direct marketing activities, for example through on-farm stores, farmers' markets, and sub-scriptions to vegetable box schemes. 356 out of the 448 organic farms in Rapp's (1998b) sample were involved in direct marketing while before conversion this number was only 130 farms. One of the reasons is that, through direct marketing, a larger share of the premium price can be obtained. It may be the only way to obtain premium prices in those situations where there is no other market outlet for organic produce.

This list of factors may not include all possible changes in labour require-ments induced by the conversion to organic farming, but it covers the main direct factors discussed in the literature. Besides these factors, indirect factors also influence labour requirements in organic farming. For example, the scale of

production influences labour demand, but in this growing sector, changes in scale are taking place rapidly. The average size of organic farms in the Netherlands was 25.9 ha, while it was 17.9 ha for conventional farms in 1996. Ten years earlier, in 1986, organic farms tended to be smaller than conventional farms, 9.8 ha and 15.0 ha respectively (CBS, 1997a). However, no detailed studies examining the relation between scale and labour use exist.

It can be concluded that the origin of the higher demand for labour in organic farming is a complex series of factors. The different factors need to be researched individually and in combination as far as possible. The contrasting information about whether labour intensity increases or not, which Marino *et al.* (1997) observe in their review of the literature, is traceable to the fact that little attention is given to the complex social changes entailed by the conversion to farming organic.

THE SUPPLY OF LABOUR

The observation that organic farming requires more labour in various countries and production activities leads to the question of the sources of that labour. Is it family labour, fixed or casual wage labour, or volunteer labour, and in what combination? Rapp's study (1998b) showed that, in Germany, the increase in labour force is drawn partially from family labour (Table 5). An increase in the amount of hired labour is crucial for the conversion to organic farming. This increase is partly in hired permanent labour and partly in seasonal or casual labour. Of the 273 farms that used this type of labour, only 74 used it before they had converted. Table 5 presents the increase in only permanent hired labour. The rise in seasonal labour is not shown but it is noteworthy that 35 farms used seasonal labour before conversion while after conversion this increased to 144 farms; 39 farms used casual labour before and 129 farms used it after conversion. No clear distinction was made between farms that were already fully converted and farms still in the process of conversion.

TABLE 5

Source of labour force on 448 German organic farms (calculated from Rapp, 1998b).

	Before conversion	After conversion	Absolute difference	Difference (%)
Labour force (without seasonal and casual labour) (FTE)	624	999	375	60
Family labour (FTE)	539	656	117	22
Permanent hired labour (FTE)	41	216	175	424
Apprenticeships	31	76	45	145
Trainee posts	13	51	38	292

Other sources confirm that more hired labour is being used on converted German farms than on comparable conventional farms even though statistical assessments of the significance of differences are generally lacking. Padel & Zerger's (1994) study in Germany (Table 6) similarly suggests that the principal increase in labour use is in hired labour. In this sample of organic farms, less family labour was being used than on conventional farms. The comparison is based on a sample of organic farm households whose main source of income is agriculture and a group of selected, comparable conventional farms. Data are taken from the annual farm business monitoring report (Agrarbericht). If the organic farms are compared with all 'main income farms' in western Germany, then the return to total labour is less favourable for organic agriculture than for conventional (31136 DM).

The German samples display very high use of family labour in conventional farming. Increases in labour demand will therefore probably easily surpass the limits of family labour and necessitate employment of hired labour. In Denmark, the relative share of hired labour is, in general, higher. The extra labour that organic farming requires is mostly covered by further increasing the use of hired labour, but there is also a remarkable increase in the use of family labour (Table 7). Nevertheless, the increase in hired labour is even more prominent. The increase in total labour per farm in organic agriculture is much higher in Denmark (0.74 labour equivalents per farm) than in Padel & Zerger's data on Germany and comes close to Rapp's data (1998b) on Germany (0.84 labour equivalents).

Dubgaard (1994) used a sample of 36 organic farms and compared their characteristics with a conventional farm sample as well as with the entire conventional sector in Denmark, which includes a substantial amount of part-time farming. The entire sector had a lower return to labour (40 DK h^{-1}) but, if organic farming were compared with only full-time farms in the conventional sector (58 DK h^{-1}), it would be less favourable.

TABLE 6

Labour use on comparable organic and conventional farms in western Germany, 1992/93 (adapted from Padel & Zerger, 1994).

	Organic	Conventional[b]	Relative (conv. = 100)
Family labour per farm (FTE)	1.38	1.47	94
Total labour per farm (FTE)	1.75	1.56	112
Hired labour (FTE)	0.37	0.09	411
Total labour per 100 ha (FTE)	4.99	4.47	112
Return to total labour (DM)[a]	30460	27928	109

[a]DM as profit plus wages per full-time equivalent family and hired labour; [b]conventional refers to comparable conventional farms.

TABLE 7

Labour use on comparable organic and conventional farms in Denmark, 1988 (adapted from Dubgaard, 1994).

	Organic	Conventional[b]	Relative (conv. = 100)
Family labour per farm (FTE)	1.08	0.77	140
Total labour per farm (FTE)	1.73	0.99	175
Hired labour per farm (FTE)	0.65	0.22	295
Return to total labour (DK h^{-1})[a]	42	34	124

[a]Manual and management work; [b]conventional refers to comparable conventional farms.

From these and other studies that compare organic and conventional farms, it appears that the supply of additional labour seems to be mainly provided by an increase in hired labour, reflected in higher wage costs, for Britain (Padel & Lampkin, 1994a), Germany (Padel & Zerger, 1994) and Switzerland (Mühlebach & Mühlebach, 1994). The data for Denmark differ to some extent as family labour seems to be higher (Table 7). No explanation for this difference can be deduced from the literature.

The Netherlands represents a situation where the share of hired labour is greater. Linden & Heezen (1998b) present data which suggests that non-family labour, especially casual labour, satisfies the higher labour demand (Table 8). Firm conclusions cannot be drawn from these data as the study only mentions the number of people and not full-time labour equivalents. We have no information about the amount of labour time per person. From the third column in Table 8 we can nevertheless learn that the demand for family labour, other than the labour of the farm manager, seems to be lower than in conventional agriculture and the share of non-family labour is higher. Boer (1987) suggests that the higher labour requirements of organic farms are partly covered by an increase in the number of hours per day that organic farmers work, but there is no data available to examine this.

The literature review shows that there is little information about the changes in labour relations that occur when farms convert to organic production. Most research into the socio-economics of organic farming employs a farm economics approach. This approach has provided interesting insights into the function of labour for the farm enterprise. However, the existing data are too incomplete and often incomparable, which makes it difficult to draw firm conclusions about the precise changes in labour requirements, the sources of labour supply, the factors that cause differences between various farms sectors and European countries, and the expected developments with regard to labour requirements. No study has been found that analyses the key factors that influence labour demand, as listed above, in terms of their interconnections, in spite of the many references to

TABLE 8

Labour on 554 organic farms in the Netherlands, 1996 (source Linden & Heezen, 1998b).

	Number of people	As a percentages of this type of labour in the entire agricultural sector[a]
Family labour	1022	0.47
Farm manager	794	0.55
Spouse (m/f)	164	0.35
Children	64	0.29
Non-family labour	1141	1.22
Fixed labourers	262	0.41
Casual labourers	880	2.98
Total	2163	0.69

[a]To interpret the third column one has to take into account that 0.5% of Dutch farms are organic, and that these farms occupy 0.7% of the total land area. The Netherlands had 554 organic farms in 1996.

farms perceived as 'systems'. The observed differences in the organization of labour, e.g. the relation between family and hired labour in European countries, remain underexplored and unexplained. More comparative research into these issues needs to be carried out.

An even greater lack of data exists with regard to questions concerning a broader analysis of labour which goes beyond the approach that reduces labour to a factor of production (Howard-Borjas, 1996). Such a broader analysis tries to understand labour, labour organization, and the effects of specific divisions of labour in organic farming by linking labour to human lives; by looking at how labour is intertwined with lifeworlds, identities and meanings of labour, and social relations. However, by making a distinction between family labour and hired labour, current approaches tend to recognize at least implicitly that labour is not just a factor of production. Different types of labour have a distinct relation to the production process in terms of social relations. However, the precise meaning of such a distinction needs further exploration before any conclusion can be drawn about impacts from the conversion to organic farming. In order to develop a tentative framework for such an exploration we need to link current literature on the socio-economics of organic farming to literature on labour and household-farm enterprise relations which is of a more theoretical nature. A central theme of this literature is how different participants in agricultural production experience, judge, and give meaning to the different types of work that are related to farming. Aspects that then become the object of study are related to debates about the quality of labour, livelihoods and social differentiation.

QUALITY OF LABOUR: LABOUR SATISFACTION—LIFESTYLE IDEOLOGY OR MATERIAL EXPERIENCE?

One argument used to support organic farming is that the increase in labour requirements leads to higher rural employment. However, this argument leaves the question open as to whether organic farming gives higher or lower labour satisfaction than conventional agriculture. Scattered across the literature one finds suggestions that organic farmers work with greater satisfaction than conventional farmers. In Rapp's study (1998b), 63.9% of the 448 farm managers questioned indicated that they were more satisfied after converting to organic farming. Only 2.9% (13 farmers) indicated that they were more satisfied before conversion; 21.8% of the farm managers experienced no difference at all in labour satisfaction. This was, however, only a single question in a postal survey and one can expect a tendency that people who have converted by their own choice will be more satisfied afterwards. It still does not prove that people active in conventional farming will experience a lower labour satisfaction than people in organic farming. A common assumption is that the choice of organic farming is part of a lifestyle; the outcome of a search for alternatives to the industrial way of modern life. Organic farming is an ideologically informed activity, while conventional farming is more about profit. Once people have realized that they can farm organically it will lead to higher labour satisfaction (e.g. Birnthaler & Hagen, 1989). In contrast to this assumption, it could also be postulated that the concrete experience of practising organic farming will be more important to explain labour satisfaction, i.e. whether one can really make a living from organic farming or whether one likes the specific tasks related to organic farming itself.

It is supposed that lifestyle perspectives influence why and how work in organic farming is being carried out and which new identities emerge in organic farming. Organic farming as an alternative lifestyle has come under pressure from two sides. From outside the movement, agribusiness is gaining influence in setting the conditions for organic production. From inside, a shift to another type of farmer is taking place.

In several countries, organic farming has become an interesting market niche and agribusiness is moving into profitable segments of production (Buck *et al.*, 1997; Tovey, 1997a; Coombes & Campbell, 1998; Slütter, 1998). This process leads to severe tensions within the farming community. On the one hand, the argument is used that conventional processing and marketing as developed by agribusiness and supermarket chains have to be used or imitated in order to allow the market for organic produce to grow. On the other hand, the argument is used that this goes against the raison d'être of organic agriculture and the central concerns of the organic farming movement: rebuilding local communities, putting people back into contact with the land, and overcoming rural-urban or food producer-food consumer divisions (Tovey, 1997b). Fierce

debates about these tensions can be expected to continue in the coming years.

The issue of lifestyle is furthermore influenced by the question of who converts and why people convert. The ideological motivations for conversion to organic farming seem to be changing. Not long ago, in the 1970s, many new organic farms were initiated by newcomers in agriculture. These people had not been farmers before but wanted to demonstrate through their own lives and work how society and the economy should be reorganized and restructured (cf. Tovey 1997a). The highly motivated search for a particular lifestyle was accompanied by the willingness to accept the relatively high risks involved in starting a new farm and farming organically. Risk in organic farming results from the prohibition of simple applications of biocides, the use of many techniques which are still experimental, lower yields, uncertain markets, uncertain price premiums and difficulties with social acceptability in the local community. More recently, the number of conventional farmers who convert already existing farms to organic agriculture is sharply increasing. Most of the new organic farms in the 1980s and 1990s have been converted from conventional farms, a tendency which has been observed in various countries (see for Britain, Lampkin, 1994c; for Denmark, Kristensen & Nielsen, 1997; for Norway, Vartdal & Loes, 1994). This may imply that both the economic and the ideological motivations in which conversion takes place are shifting. Organic farming is less of a 'back to nature' activity of urban intellectuals who perceive it as inseparable from social issues. It has now become an integral aspect of rural people's search to redefine the practice of agriculture. Recent research in the Netherlands shows that there are, nevertheless, remarkable differences in the background of organic farm managers in comparison with conventional farms (Linden & Heezen, 1998a). They are, on average, younger and have higher levels of formal education. For example, 38% of the managers on organic farms had university or polytechnic education, whereas on conventional farms this was 8%.

The decision to farm organically is thus not necessarily a result of a search for an alternative lifestyle. In many cases, it is even the only solution to continue farming in a situation where they fail to survive within conventional agriculture. Rapp (1998b) found that 29% (128 of the 448 farms) of the farm managers questioned had considered giving up farming while they still practised conventional farming, whereas they are able to continue their farm as a result of having converted. This also implies that the argument that higher labour satisfaction goes together with an alternative lifestyle should be questioned or at least put into perspective. It assumes too easily that "more skilled, healthier workers and better working conditions are characteristic of organic farming" (Marino *et al.*, 1997). Such statements first have to be demonstrated empirically, which has not been done yet. More research is needed into the shifts in physical demands that result from practising organic farming and new tasks which may or may not be carried out with greater satisfaction. The above-mentioned

increase in seasonal labour tasks of low quality and the increase in demand for family labour may point to possible labour frictions in the long term. Labour satisfaction cannot be deduced from an ideology to which farmers presumably adhere. This does not mean that the discussion of alternative lifestyles is inappropriate, only that more careful empirical research is needed as to how lifestyle and the material experience of work interact.

QUALITY OF LABOUR: WOMEN'S PARTICIPATION AND GENDER RELATIONS

One element of the 'organic farming as lifestyle' perspective is the interest in explaining the relatively high participation of women in the organic farming movement. Although it appears that, to date, no one has documented this phenomenon quantitatively, many observers agree that women's participation is remarkably higher in organic farming than in conventional farming. For example, Schmitt (1994) states that, in Germany, if women work professionally in agriculture, they prefer organic farming to a higher degree than men. Experts in the field report that they encounter disproportionately high numbers of women in meetings and training events compared with the conventional sector (personal communication N. Lampkin, University of Wales (regarding Europe, the U.S.A. and Australia), P. Scheepers (regarding the Netherlands); E. Goewie, Wageningen Agricultural University (regarding Europe); see also Organic Farmer, 1991).

For both the organic and the conventional sector it has been remarked that women play a main role in moving towards a more environmentally friendly agriculture (e.g. Meares, 1997; Chiappe & Flora, 1998). Rooij *et al.* (1995) found that, on Dutch conventional family farms, it is also often the women who propose changes into the direction of a more sustainable farm style. Many of these women told the researchers about conflicts they have had with their husbands about sustainability issues. Vereijken *et al.* (1998) suggest that women manifest a particular interest in incorporating a diverse and attractive landscape into farm development. Apparently, there are some reasons why some women show a special interest in organic farming or pushing conventional farming into a more sustainable direction.

Important parallels exist between the feminist critique of the productivist paradigm and the critique from the organic farming movement. Feminist theory has explained and criticized how 'caring activities' have been relegated by mainstream economics to the non-economic, private sphere (Jochimsen & Knobloch, 1997). Several feminist theories have, in common with some organic farming approaches, the idea that, in a sustainable economy, the satisfaction of the existing material and non-material basic needs takes priority over the production of new material goods.

One explanation for higher female participation in organic farming dominates the public discourse. It asserts that organic farming comes closer than conventional farming to the care-oriented values that women possess or strive for. It tends to see the above-mentioned critique of the productivist paradigm as inherent to women. Women are attracted to organic farming because of its care aspect. Organic Farmer (1991) asked leaders of the organic farming movement in the U.S.A., most of them women, about the role of women. The following statements express how they perceive the feminine values in organic farming:

- 'Organics encompasses more feminine values'.
- 'Women tend to be less brainwashed, more able to step outside the status quo'.
- 'Women don't seem to mind close work with their hands—men tend to want to mechanize more. Maybe that's why women are drawn to organic farming and gardening'.
- 'There's more sense of partnership in organic farm families. Once you have established a belief in that value system, it's a kinder approach not only to the land but to your spouse. What binds us is the land—organics encourages women to be full participants, not just in families, but on the land'.
- '[Organics] has helped me get away from the centralized market system and its patriarchal style of super competitiveness'.
- 'A high percentage of the people I interviewed about transitions to organic told me that a husband's decision to convert was initiated by a wife's concern about the family's health and by experimentation with eating a more healthy diet'.

Similar remarks are also present in literature which does not deal specifically with this question but nevertheless remarks on the 'special' role of women. Vartdal & Loes (1994), for example, state that "often the female farmer (...) plays an important role in the ideological sphere, characterized by caring and consideration". A key element of this position is that so-called feminine values are inherent to women and organic farming. These feminine values are: care for the family and the local community, modesty, connectedness, consideration for health issues, intuition, non-competitiveness, subsistence instead of profit, respect for all life forms and so on. This is reminiscent of eco-feminist positions such as those of Shiva (1988), Mies & Shiva (1993), and Salleh (1984, 1997) which attribute a unique agency to women with regard to the relation with nature. The destruction of nature is a result of the same masculine mentality and practices that deny women their right to their bodies and their own sexuality. The exploitation of nature and of women are intimately connected. Women are more interested in changing this exploitation than men. A first step in liberating humankind from these interconnected forms of domination is envisioning appropriate technology and communal governance based on the common-sense observations of nature as made by women (cf. Salleh 1997).

This eco-feminist position has received substantial criticism as it tends to feminize nature and to naturalize women and gender relations (Agarwal, 1992; Jackson, 1993, 1994; Meynen 1993; Braidotti *et al.*, 1994; Leach *et al.*, 1995). It is not self-evident that women are universally closer to nature (Jackson, 1994). The non-existence of the intrinsic positive synergism of women's gender interests and environmental interests is exemplified by food consumption. It is still women who do most of the shopping and who take consumer decisions about which food to buy, but a lack of consumer demand, i.e. women buying organic food, is often seen as a key constraint for the growth of organic farming. Another problem is that to posit a special relationship between women and their environment ignores multiple sources of differences between women. In the quotations above, women appear as a homogenous group and there is a failure to disaggregate the category 'women' and the complex relations between different women as well as between women and men. Without further analysis we risk the danger of falling back on static explanations which give no account of historical change and the shifting meanings of women's work and femininity.

A first step in developing a serious analysis of women's participation in organic farming is to recognize that the position of women is also changing in the conventional agricultural sector (e.g. Symes, 1991; Brandth, 1994; van der Burg & Endeveld, 1994; Bock & van der Burg, 1998). Women increasingly take up conventional farming as farm managers but do not necessarily take an environmentally-friendly attitude. Haugen & Brandth (1994) found in their research on female farmers in Norway that "Whereas older women farm more in accordance with sustainable principles, young women have entered the agricultural treadmill. Their attitude toward agriculture is that of farming as an occupation. They want the farm to become a modern workplace with similar benefits and working conditions to any other occupation. There is no visible break with the dominant principles in farming among the young women. They are similar to men also in this respect."

Rural gender studies explore the changing position of women on farms (e.g. Howard-Borjas & de Rooij, 1997; Rickson, 1997). One important finding is that the influence of farm women (not women farm managers) on decision making on farms is more complex than generally assumed and depends on the type of farm involved. Rooij *et al.* (1995) describe several situations in which women are not much involved in daily decision making about tasks but have considerable influence on the long-term decisions, for example, about investments. Those women with clearly defined tasks on the farm have much more influence than women who help with an activity when their labour is required, almost independently of the amount of time that they work. Women on smaller farms tend to have more influence than women on larger farms. If women participate more in decision making on the farm, a tendency was observed that less emphasis is given to specialization and growth, and more emphasis is placed on diversification, step-by-step patterns of growth and broadening farm activities.

Rooij *et al.*'s research suggests the existence of a complex interaction between women's roles, farm types, age, education, off-farm work, and decision making processes. This work on conventional farming makes it clear that in order to understand women's role in organic farming, the concept of 'care for nature' is overly simplistic and even obfuscating. Instead, a complex set of variables must be investigated through a series of interconnected questions.

Do conventional farms and organic farms differ in size, capital and knowledge intensity, and property relations which create different conditions for the participation of women? Are organic farmers of different age cohorts which have new values about emancipation and women's participation that influence the nature of gender relationships? Is there a link between women's historical activities on farms and their current interest in organic farming? Lampkin (1998, personal communication), for example, suggests a possible link between women's past role in the home garden to grow food for the family and their interest in organic farming. As these women only grew food for home consumption they were interested in cultivating it as safely as possible without using pesticides. They thus were accustomed to a certain type of agricultural practice and could translate it to the whole farm level. Men got more caught up in the use of pesticides in their market-oriented production.

This suggests that history as well as processes of change raise important questions. How do, for example, the process of women's emancipation and the feminist movement influence women's participation in different agricultural sectors? How are changes in inheritance practices, for example greater rights for women to their share of rural capital, and gender-differentiated constraints for obtaining credit, related to the capitalization of farms that are established by women? As women have less access to capital it may be easier for them to initiate an organic farm which requires less capital than a conventional farm. Are women more likely to be open to organic farming because their ideas of professionalism are less tied to modern farming styles, which in the past tended to marginalize them? These are examples of questions that remain unanswered for the moment and which should be further explored in order to go beyond essentialist explanations.

Instead of assuming universal characteristics of women, this alternative approach raises questions about specific and changing gender relationships on farms and in farm organizations, and how these are structured by the institutional context in which farming takes place. These relationships include struggles over resources (labour power, means of production) as well as a culturally-specific understanding of gender identities and capabilities. Its analysis goes beyond reducing women's interests to household interests and men's interests to farm business interests, and a simple interaction between these two. It implies that gender differences on farms are constituted by everyday practices and power struggles which, generally, tend to exclude women from specific activities and assert male control over the farm labour process. If

women's participation in organic farming differs from conventional farming, it can be postulated that the gender divisions in access to resources will probably be different in both sectors or that the process of gender construction differs for these two sectors. The analysis of women's participation should go beyond a so-called 'job-gender model', whereby women's strategies are examined in relation to their typical women activities (i.e. domestic activities, private sphere, psychological motivations), whereas men's strategies are explained from the typicalities of the job he is carrying out, i.e. running a farm (public sphere, economic motivations) (cf. Bruijn 1989).

LIVELIHOODS

The question of the relation between women's activities on farms and their values about organic farming points to a more general theme of relations between labour, control over labour, income and profits, and decision making in the context of family farms. Rural gender studies have developed a coherent critique of approaches which separate the study of the farm household from farm enterprise management. In fact, this is what most of the cited studies that analyse organic farming do—exclude the farm household. The rationale of labour use by farmers is only approached from the perspective of optimizing farm productivity (cf. Michelsen, 1997). However, in most European countries, family labour is very important to farms. Family members are at the same time farm managers, farm workers, para-agricultural producers, workers in the domestic sphere and, increasingly, off-farm workers. Decisions of household members and the way they value and use family labour cannot be theorized by reducing labour to a quantitative factor in farm operations, as the qualitative aspects of labour also determine who of the family does what and why. This does not mean, however, that how farmers look at labour cannot change under influence of the dominant discourse which separates the family from the farm. In the context of an ongoing process of commoditization and a tax and legal climate which favours separate bookkeeping of farm and household, perceptions about the family farm may change. People on the farm may themselves perceive an increasing distinction between household and enterprise.

Part of the farm labour is non-wage labour used for household reproduction (production of use values) and it does not appear to be possible to simply calculate an equivalent exchange value to understand the performance of this domestic labour. Instead, cultural and ideological dimensions must also be considered to achieve an understanding of the gendered division of labour and the interrelations between labour in the domestic sphere and labour on the farm (cf. Long, 1984).

From the gender studies literature discussed above, it follows that, instead of looking at differences between men and women solely in terms of feminine

values, a much more complete and coherent set of questions must be asked in order to explain difference in gender relations between organic and conventional farming. These relate to the difference in the type of labour on organic farms, or in the organic movement, to draw a parallel, and on conventional farms. It is important to know whether organic and conventional family farms have similar household structures. Birnthaler & Hagen (1989) suggest that household structures on organic farms tend to differ from those on conventional farms as the people active in organic farming tend to have other values about family relations and living together with other people.

Other relevant questions are whether organic and conventional farms differ in their linkages with external capitals in the farm household production and reproduction process; whether income and money capital circulate differently between households, direct agricultural production, para-agricultural activities and non-agricultural farm activities in conventional and organic farming; and whether the structure of the ownership of the capital and land assets on the farm differ for organic and conventional farms. These questions have not yet begun to be addressed in the literature on organic farming.

SOCIAL DIFFERENTIATION

Above it has been postulated that women on different type of farms, who are differently involved in the labour process, tend to have different views of sustainability issues and probably also of organic farming. It has also been remarked that farm size differences have their impact on labour intensity. In order to study such differences in more depth, a more theoretically informed approach is needed to the question of who controls different forms of labour and its products, and what effect this has on the perceptions of organic farming held by different people. What is needed is an understanding of how social differentiation determines labour use and relates to motivations and values in organic farming. Several phenomena that relate to processes of social differentiation have already been touched on above:

- Labour use in organic agriculture (in FTE per area) can be related to farm size (Table 2); the probable reason is that smaller farms specialize in certain activities, for example horticulture, but it may also be an effect of capitalization, scale advantages, and differences in mechanization.
- The large amount of capital that is required to start a conventional farm may make it difficult for women to set up as farmers owing to mechanisms within the family and in formal credit channels which exclude them from access to capital. Until recently, organic farms tended to be smaller in several countries, thus less capital intensive, and therefore probably more accessible to women.
- Smaller, labour intensive, farms are out-competed in the modernization of

conventional agriculture. Some of these can survive by converting to organic farming. Hence, social differentiation within conventional farming influences the type of farms that convert to organic agriculture.

- Social differentiation is about which groups gain increasing control over the means of production while others lose it. Currently, competition over land is emerging between conventional and organic agriculture in The Netherlands. This struggle is partly located in the national debate about which land should be turned into nature or low input agriculture. Will organic farming be reduced to a form of nature management on marginal lands while conventional farming is allowed to modernize on non-marginal lands? Or will organic farming get access to high quality land for establishing an optimal high production with opportunities to develop competitive productive farms?
- This relates to a problem with environmental regulations which entail a set of prohibitions of agricultural practices (i.e. prescription of means) instead of the definition of a final outcome. The required investments to realize these means may be relatively more costly for smaller than for larger farms, thus precipitating social differentiation. It is not allowed for smaller farms to find alternative ways to reach the final outcome. Similarly, such general environmental regulations often do not fit with organic agriculture as the determination of the means is based and focused on conventional agriculture. The dominance of conventional agriculture may thus endanger the survival of organic farms through this mechanism.
- Women on farms of different size tend to participate differently in work and decision making (Rooij *et al.*, 1995). For example, when farms in the Netherlands are of a smaller scale, women have a greater influence on decision making and put less emphasis than men on specialization and increasing scale. More emphasis is given to diversification, step-by-step growth, broadening of activities and a better balance between farm and household.

Up to now, no developed theory of social differentiation exists in the literature on organic farming. This is surprising since Rural Sociology and Rural Development Studies long ago demonstrated the importance of social differentiation studies for policy making. It can be concluded that further study of social differentiation, perceived as the outcome of the competition over resources and the regulation of labour process on farms, can be carried out along two lines. Firstly, there is a process of external differentiation between conventional and organic farming. Secondly, there is also internal differentiation within the organic farming sector involving latent conflicts between farms with different labour processes, for example those that focus exclusively on production and those that also carry out nature conservation or social caring activities, for example health care activities with mentally handicapped people or rehabilitation of drug addicts. Such conflicts come to the fore when regulations,

certification systems, policies on subsidies and so on are being discussed. Behind simple terms as 'ideological' or 'not real organic' which are often used to declassify farmers with another style of farming, a more complex process of social differentiation is often hidden.

POLICIES AFFECTING LABOUR AND LIVELIHOODS IN ORGANIC FARMING

Policies will have an act on labour relations, gender relations, livelihoods and processes of social differentiation. It appears that there is still no research that specifically deals with the implications of national and EU policies for labour relations on organic farms. From the general literature which deals with policies and organic farming, certain hypothesis for further research can be generated. Four types of policies appear to be relevant here: those concerned with environmental management (regulation of specific production practices), subsidies to stimulate conversion, eco-tax systems and trade policies. The first one has been discussed briefly above.

The second type of policy concerns the subsidies that stimulate farmers to convert to organic agriculture. The recent high rate of growth of organic production is not only a consequence of a growing consumer demand for organic food but also a consequence of a more favourable policy environment towards organic production. It is estimated that more than 200 million ECU is spent annually to support organic farming within the framework of EU Regulation 2078/92 (on agricultural production methods compatible with the requirement of the protection of the environment and the maintenance of the countryside): this represents 5–15% of Member State expenditure on this regulation (Lampkin, 1996; Dabbert, 1997). The Netherlands has not experienced the high rate of growth in the organic sector that took place in countries such as Austria, Denmark or Germany (Geier, 1996). Nevertheless, the farm area under organic production in 1996 was five times higher than in 1986 (CBS, 1997a). In the same period, the number of farms doubled, from 278 to 554, the organic farm area expanded more than fivefold, from 2724 to 14334 ha, and the mean farm size increased more than twice, from 9.8 to 25.9 ha. Organic farms were smaller than conventional farms in 1986 but, by 1996, the mean farm size of organic farms (25.9 ha) was much larger than the mean size of conventional farms (17.9 ha). Past policies to stimulate organic production under the 2078/92 Regulation did not work well in the Netherlands. Farmers showed little interest in the subsidies offered as long as they were not allowed, in the Dutch application of the EU scheme, to expand the area under grain because farmers wanted to compensate lower yields with more area under grain production (Scheepers, personal communication May 1998; Ham 1995). Current policies to promote organic agriculture in the Netherlands mainly focus on encouraging the

conversion to organic farming with subsidies and on improving the marketing of organic produce (Aartsen, 1996). A main objective of the latter policies is to integrate organic products into conventional marketing channels such as supermarket chains. It can be expected that the current policy environment will encourage further growth of the organic sector and that, if it succeeds, extra labour demand will be generated. The question then becomes what consequences do the specific kind of subsidies have for labour? Most studies on the remuneration of labour in organic farming are based on data that was collected before the subsidies resulting from EU Regulation 2078/92 entered the organic agriculture sector. In Germany, these subsidies generated an increasing supply without substantially increasing demand. Farmers' prices declined by nearly the same amount as the subsidy given by the government (Dabbert, 1997). Such subsidies thus run the risk of boosting supply as they stimulate conversion to organic agriculture but with negative effects on the return to labour as well as on incomes of farm families who do not receive subsidies. Currently, most subsidy systems give subsidies according to the amount of converted land related to the type of use (Lampkin, 1996). In some cases, organically-cultivated pasture is being subsidized without taking into account whether the cattle on it are being kept according to organic standards. The focus on the amount of converted land characterizes this kind of subsidy as 'productivist'; as with earlier subsidies for conventional agriculture, the production process, here one production factor, is being put central to regulate agriculture and not, for example, rural welfare which would put more emphasis on farmers' incomes in the discussions about subsidy policies.

Another policy issue that will probably have more direct effect on the labour process is the discussion about 'eco-tax' and the shift involved from taxing labour to taxing inputs. The rationale behind the so-called eco-tax is that a shift from taxes on labour to taxes on other inputs will make labour cheaper and other inputs more costly. It is also expected that environmentally unsound input use will thus be reduced. It would furthermore mean that, with lower production levels, an acceptable income could still be obtained by farmers. If the organic sector requires more labour, then a reduction of taxes on labour would strengthen the position of organic agriculture vis-à-vis conventional agriculture.

Trade liberalization causes low-wage countries to have comparative advantage in trading labour-intensive organic products. The competitiveness of EU production is partly determined by labour costs. The Dutch organic agricultural sector exports a substantial part of their production (Zimmermann & Meeusen, 1996) and may have to compete increasingly with Eastern Europe or Third World producers in these markets.

Above, it has been argued that policies will influence labour use and returns to labour in organic farming. However, more research must be carried out in this field before the specific effects of various policies will be known.

CONCLUSIONS

It can be concluded that the literature strongly suggests that organic farming requires more labour and has, potentially, a positive impact on rural employment (Boer, 1987; Dubgaard, 1994; Mühlebach & Mühlebach, 1994; Padel & Zerger, 1994; Näf, 1995; Bouwman, 1996; Leeuwen *et al.*, 1998; Rapp, 1998a), but the literature also reveals that current information is not conclusive about the generalized character of this phenomenon nor about the precise factors that cause an increase in labour demand (Lampkin, 1994b; Marino *et al.*, 1997). Higher labour requirements involve a complex and interconnected set of factors related to old and new tasks in 'agricultural production', for example crop husbandry, as well as to a changing farm structure due to new processing and marketing activities on the farm (para-agricultural activities). Most literature only aggregates the influence of these factors or highlights one or a few factors. A more disaggregated analysis which splits out the interconnections between these factors has yet to be developed. The effects of higher labour demand on the supply of labour also remains unclear. The literature contains some information about how, in organic farming, the relative importance of family labour (farm manager and other family members), hired labour and voluntary labour may shift in the conversion process. Seasonal hired labour may become important for the sustenance of organic farming. The precise consequences of such shifts for the future of family farming and for labour and household relations are not yet known and require further investigation.

A second type of conclusion concerns the approaches that have dominated the research. Most information on labour in organic farming that has been gathered until now provides insight into the function of labour in the farm enterprise, but little attention is being given to how different people on the farm perceive and valorize the type of labour they carry out and their specific control over the labour process and benefits derived. Theoretical approaches which take these crucial issues into account focus on the quality of labour, livelihoods, and gender relations. Empirical work in this field in the organic agricultural sector as in conventional agriculture has still to be done.

The second part of this paper shows that the suggestion that labour satisfaction is relatively high in organic agriculture needs further substantiation. The argument that the fulfilment of an alternative lifestyle leads to this high labour satisfaction can probably not be sustained. One reason is that the background and motivation of people who turn to organic farming is becoming different. The argument that organic farming provides a healthier working environment as no hazardous biocides are used needs to be counterweighted by the possibility that organic farming increases the amount of strenuous and backbreaking work.

Another conclusion is that labour relations in organic agriculture seem to be different, as different sources suggest that relatively many women participate in

organic agriculture. This higher participation of women cannot be explained by reference to the 'feminine' values present in organic farming. Recent theories in gender studies point to the need to explore what happens between men and women *on* the farm, i.e. whether there are differences in property, access to resources, types of households, relationships between the farm and external capital, control over labour in the various labour circuits and distribution and control over income or profits. It is postulated that the explanation of the differences in women's participation in the conventional and organic agricultural sectors has to be sought in these factors.

The notion that gender relations, including the gender division of labour, are being determined by the type of farm and that, on the other hand, gender relations have their influence on investment patterns, reveals that gender relations interact with processes of social differentiation. The literature review, however, shows that social differentiation is not being investigated with regard to organic farming and that a theoretical approach to this is missing. A similar lack of research was observed with regard to the possible effects of policies on labour use, labour satisfaction, and labour relations in organic farming.

ACKNOWLEDGEMENTS

This literature review is part of a larger research programme on 'Labour, Gender, and Livelihoods in Organic Agriculture' and builds upon earlier work carried out by Patricia Howard-Borjas (Howard-Borjas, 1996). I am grateful for her support. I thankfully acknowledge the valuable suggestions made by the reviewers.

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(*Received 17 November 1998; accepted 30 August 1999*)