

Till Westermayer

# **OUT-SOURCING OF WORK IN GERMANY'S FORESTRY**

**Rural social structure and identity  
in transformation**

**Arbeitswissenschaftlicher Forschungsbericht Nr. 3**

**Institut für Forstbenutzung und Forstliche Arbeitswissenschaft  
Albert-Ludwigs-Universität Freiburg im Breisgau**

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# Abstract

Beginning in the 1920s, work in Germany's forests was re-organized following the principles of Taylor and of modern industrial work. The main type of work since then was the employed, wage-earning forestry worker, organized in a union and hierarchically controlled. Self-employed forestry contracting and timber harvesting as part-time occupation of farmers only played a minor role. This situation changed in the 1990s with a steady increase in the out-sourcing of forestry work and the drastic reduction of wage-earning personnel in the state forests. As reasons for this development, the "neo-liberal turn", the decentralization of work and a stronger market orientation of politics (and also of the state-owned forests) as well as new technical developments all can be named. Nowadays, owners and employees of small forestry contracting enterprises account for at least a quarter of the work force in Germany's forestry. These enterprises are increasingly becoming professionalized and losing their links to agriculture and small-scale forestry, which is exemplary for a rural identity in transformation. As part of the BMBF funded project WALD (*Wald / Arbeit / Land / Dienstleistung – Forests / Work / Rural Areas / Services*), the working and living conditions in these micro-enterprises as well as the context in which they work were studied, combining in-depth qualitative interviews with statistical data. Inter alia, findings include a turn from social and regional integration of the work to a growing importance of market relations, a market position between forest owners and wood and paper industries resulting in an often exploitative situation, and, last but not least, the diffusion of sub-contracting even into small family enterprises. On the other hand, rural traditions of work still resonate with these enterprises.

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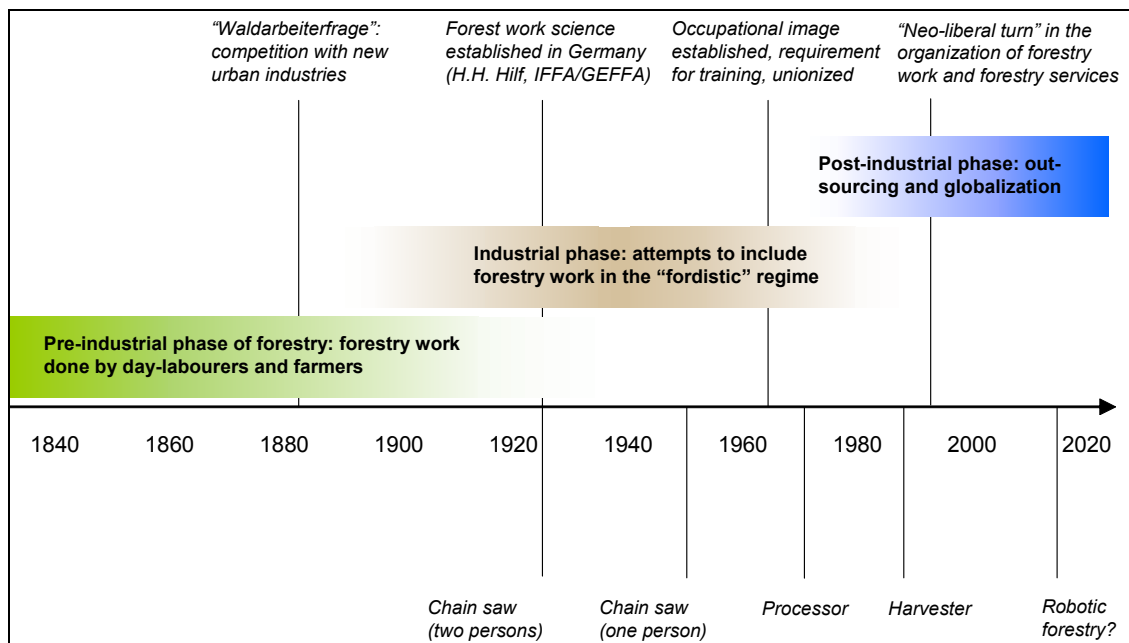
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## Introduction<sup>1</sup>

In the 1990s, the way in which forestry work was done in Germany was reorganized, leading to a massive degree of out-sourcing of work. This transformation will be discussed here from three different perspectives. The first perspective looks at the historical dimension of forestry work organization, beginning with the end of the 19<sup>th</sup> century and ending with the contemporary transformations. The second perspective focuses on the working and living conditions of forestry contractors, based on qualitative interviews. Finally, the third perspective brings together the first two to discuss them in the context of sustainable regional development.

## 1 First perspective: the historical dimension of forestry work organization

Fig. 1: Three phases of the organization of forestry work in Germany



Historically, in Germany paid work in forestry was done by day-laborers, especially by farmers who wanted to earn additional income in winter (cf. Erler 2001; 2001a; 2002;

<sup>1</sup> This article is a revised version of a paper ("The out-sourcing of work in Germany's forests. Finding and consequences in relation to the transformation of rural social structures and identities") presented at the XXI Congress of the European Society for Rural Sociology (ESRS), Keszthely, Hungary, August 22 to 27, 2005 in working group 7 ("Changing social structures and identities in the European countryside"). It is based on results of the WALD (Wald | Arbeit | Land | Dienstleistung) project, which was funded by the German Federal Ministry for Education and Research as part of the program „Sustainable Work Science“, Grant No. 01 HN 0120. A more detailed discussion (in German language) can be found in Westermayer (2006a; 2006b).

Gröger/Lewark 2002: 17ff.). This is true from the 16<sup>th</sup> century to the beginning of the 20<sup>th</sup> century. Cutting timber in the form of an occupation (“Holzhauer”) can only be found between 1600 and 1800, when charcoal was the primary source of energy for the early industries. With the exhaustion of the woods used for charcoal production and the move to mineral coal as primary source of energy, forestry work once again became the work of day-laborers and farmers.

The organization of forestry work became an issue at the end of the 19<sup>th</sup> century with forestry circles discussing the so-called “Waldarbeiterfrage”<sup>2</sup> (cf. Erler 2001; Gröger/Lewark 2002: 22ff.): Wood owners and foresters complained about the lack of skilled workers. In the competition between forestry work and work in the then new urban industries, people often decided for industrial work, which compared to forestry work seemed to be less exhausting and better paid. They moved from the countryside to the cities, or even migrated out of Germany to the American continent. Other reasons for the complaints included an increased demand for specialists that could not be met. Several actions and measures were discussed as solutions for the “Waldarbeiterfrage”, including the necessity of long-term contracts for forestry workers and a pay-raise. In the end, “forestry worker” became an occupation, including a solidified occupational image, adequate pay, the end of the day-laborer principle, and a designated training program. This solution was proposed at least since 1920. Occupational training as a requirement for the mass of forestry workers was implemented only in the 1950s (GDR) respective the 1970s (FRG) (Erler 2002: 19).

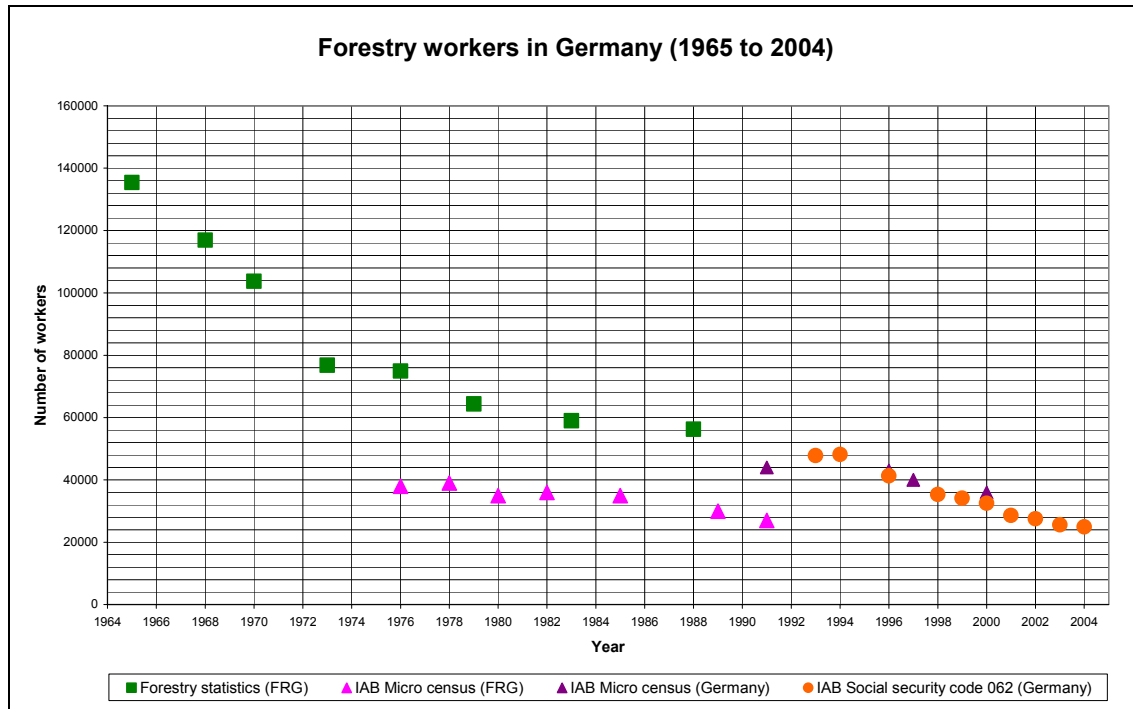
The efforts of the 1920s and the following decades can be described as an attempt to include forestry work in the “fordistic” regime of industrial work. An important figure in this time was Hubert H. Hilf, who founded the discipline of Forest Work Science. Of special importance to Hilf were the organizational ideas of F. W. Taylor. Even if a complete inclusion of forestry work in the “fordistic” regime was not possible – not at last because forests as workplace differ highly from the assembly line – the attempt was partially successful. Trade agreements secured higher pay and nearly year-round work. Also the introduction of the chain saw, beginning in the 1920s, was an important precondition for a quasi-fordistic work organization, increasing productivity and lightening the hard work (Gröger/Lewark 2002: 26ff.).

In conclusion, one may say that the “standard model” of the wood worker in the 1970s and 1980s is the unionized male wage-earner, working in a permanent full-time position all around the year,<sup>3</sup> employed by the state forest services (or, to a certain degree, in bigger municipal or private forest properties). The establishment of the new standard model also had an effect on the number of forestry workers. Since the 1960s, temporary workers and women planting trees were in effect laid off, the number of workers in forestry decreasing from circa 135 000 workers in 1965 to around 75 000 workers in 1975 (see fig. 2).

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<sup>2</sup> Literally: “The question of forestry workers”

<sup>3</sup> In contrast, before circa 1970 the typical forestry worker worked only seasonal and combined forestry work with farming.

Fig. 2: Reduction of the number of forestry workers<sup>4</sup>

In 1985, the peak of the industrial organization of forestry work was already transgressed. At that time, only about 50 000 to 60 000 forestry workers were employed in the FRG, a number continuously reduced in the following years. Even the German unification brought this move downwards only for a short time to a stop.

At least since the 1980s, one can describe three developments that lead to a decrease in the number of workers, again, and also to far-reaching changes in the organization of forestry work. These developments may be labeled “globalization of the timber market”, “neo-liberal turn” and “further mechanization of forestry work”.

- *Globalization of the timber market*: From the 1970s onward, we see the establishment of a competitive international market for timber and timber products, especially pulp and paper. This leads to competition for low prices, and to pressure on the wages paid to forestry workers.
- *“Neo-liberal turn”*: The second development encompasses a stronger market orientation of politics and the idea of decentralized and “lean” work. For the state-owned forests, economical efficiency and profit-orientation become more prominent. The idea that not only enterprises, but also the state should follow the principles of markets and “lean” organizations spreads widely. Exemplary are changes in the structures of state-owned forests in several states of Germany, transforming

<sup>4</sup> Own compilation of data from different sources: the forestry statistics for West Germany, micro census data from the Statistical Bundesamt and the occupational statistics about employees in the social security system of the Institut für Arbeitsmarkt- und Berufsforschung. Data from 1991 onwards are for unified Germany as a whole.

a civil service or a public authority into a state-owned enterprise with larger degrees of freedom concerning managerial decisions.

- *Further mechanization of forestry work:* Whereas globalization and the “neo-liberal turn” can be found in almost all fields of society, the third development is a bit more specific, even if there is a general trend of technical rationalization (cf. Hamberger 2003): Beginning with the 1980s, large machines – harvesters, forwarders – were introduced into forestry at broad scale, in Europe first in the Nordic countries and later on also in Germany.<sup>5</sup> *Harvesters* replace the manual use of the motor saw for standard ranges of timber, if the natural environment is not too steep or too wet. The productivity in timber harvesting using harvesters is at least five times the productivity reached with the motor saw. Specialized machines (*forwarders*) are introduced for transporting timber in the forest, replacing agricultural gear or less specialized machinery. Common to harvesters and forwarders is the large investment capital necessary to buy these machines. This leads to a necessity of maximizing machine utilization.

Through the combination of globalization, “neo-liberal turn” and mechanization, the out-sourcing of forestry work to contractors became interesting for big forest owners, including the state forest services. While the numbers of employed workers decreased further, a market for “mechanized” contractors was established. A turning point was heavy storms in the beginning of the 1990s, leading to the necessity of processing large amounts of timber in short time (Hamberger 2003). Instead of buying forest machines themselves, the German states and the state forest services set incentives for contractors to buy harvesters and forwarders.

Although small contracting enterprises (“forstliche Lohnunternehmer”) and farmers earning additional money in the winter season existed in parallel to the industrialized forestry work of the 1970s and 1980s, only from 1990 onwards the professional contracting enterprise (“forstliches Dienstleistungsunternehmen”) became a possibility and soon a reality for forestry in Germany. The transformation from *Lohnunternehmer* to *Dienstleistungsunternehmen* was linked to a massive out-sourcing of work and – at the same time – financial risks (especially in regard to the utilization of forestry machines)

The “new” state-owned forest enterprises follow the idea of the “lean” enterprise, reduced to core competencies. So the execution of the actual work in forestry increasingly becomes the area of professional contractors. At least a quarter of the forestry workforce in Germany is formed by contractors and their employees, in total roughly 23 000 persons, working in 7 300 enterprises (Brogt/Westermayer 2005; Westermayer/Brogt 2006).<sup>6</sup> Even the new contracting enterprises are micro-enterprises: the average contractor employs only 2.5 workers, 90 % of the enterprises employ less than ten persons. The

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<sup>5</sup> One could also include the introduction of the processor into forest operations that started in the 1960s into this discussion.

<sup>6</sup> This estimation is based on the results of a survey of local forest administrations in Germany, which were asked about the contractors they know about.

decrease in the number of workers employed in the “fordistic” regime of the big state-owned and private forest operations probably will continue, whereas the importance of contractors will continue to increase (cf. Westermayer 2004).

Despite this, the situation of contractors is often difficult. Looking at the forest-based value chain, contractors are found between the demands of forest owners on the one side and the timber trade and wood processing industries on the other side. Their small scale – as well as a low degree of organization and a low level of influence on forestry politics in most German states – leads to a generally weak market position for the contracting enterprises and to strong dependencies. With the move from the periphery of forestry to its centre, also the structure and social integration of contractors changed notably. This topic is explored further in the next chapter.

Concluding the historical perspective, the organization of forestry work seems to follow the typical model of western modernization: heralded by political, social and technical developments, the pre-industrial phase ends. With some time lag, it is attempted to include forestry in the fordistic production regime, state-owned forestry operations orientating themselves along the lines of the big standardized corporation. Following the social nexus of the 1970s, globalization, the development of ICT and new management models as well as the change in the social climate of western societies leads to a post-industrial phase, also in forestry. This model is convenient to explain the transformations in forestry work. However, there are some caveats, especially concerning the heterogeneous and asynchronous character of empirical reality. Maybe these heterogeneities are a sign of an era of transformation. Comparing the different German states, one can find quite different trajectories of the forestry services moving into the post-industrial phase. But the reduction of personnel, the out-sourcing of work and the increasing importance of economic efficiency can be found in all state forestry services. Another critical issue is the ignorance for forestry work done in small private forests by their owners – a field that is also in transformation (cf. Suda/Schaffner 1999; Hårdter 2003). However, the tendency towards a post-industrial organization of forestry work is clearly visible.

In the bigger picture, forestry work is embedded into rural areas of the society. Even if one still can find typical differences in life-style and social structure between rural and urban areas, rural areas do not stay the same. They become increasingly post-industrial, too.<sup>7</sup> Concerning the organization of work, one may even speculate about the resonances between a post-fordistic work organization brought to rural areas, emphasizing autonomy, flexibility and a lacking distinction between work and life, and pre-industrial traditions of autonomous rural work with similar characteristics.

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<sup>7</sup> For various aspects of this debate, cf. Hainz (1999), Lohkamp-Himmighofen (1990), Müller (1998), Spellerberg (2004) and Vonderach 2004.

## 2 Second perspective: forestry contractors today

Whereas the first chapter gave an overview about the transformation of forestry work organization in an historical framework, the second perspective is interested in the “now and here” of forestry work done by contractors. The first sections (2.2 and 2.3) accentuate findings on the social “meso” or middle level, whereas the last two sections (2.4 and 2.5) take a closer look on the actual working conditions and attitudes of forestry contractors.

### 2.1 Methods

In 2003, 14 focused in-depth interviews with contractors were carried out in three states of Germany (Baden-Württemberg, Hessen and Sachsen-Anhalt), selected for the different economical and forestry conditions found there. In each state, contractors were selected according to the size of their enterprises, ranging from self-employed contractors with no employees to logistics companies (“Servicegesellschaften”) owned by big private forest owners. All contractors interviewed were male.<sup>8</sup>

Topics of the interviews included the structure of the enterprise, the working conditions, the personal background of the owners and the employees as well as their view of the timber and forestry contracting market. The interviews were supplemented with additional data material, especially reports and press articles about contractors and their work in forestry magazines. All interviews were transcribed and analyzed following the principles of Grounded Theory (Strauss/Corbin 1998).

### 2.2 “Marketization” and new modes of integration for forestry contractors

**Table 1. Four types of integration**

	Social integration	Market integration
Regional integration (horizontally)	Regional social integration (traditional type)	Regional market integration (new type)
Value chain integration (vertically)	“De-facto employment” (new type)	Pure market integration (new type)

The processes described in the previous chapter can be put under the umbrella term of “marketization” (“Vermarktlichung”). This is especially true for the social relations between contractors and their regional environment. Systematically<sup>9</sup>, one can distin-

<sup>8</sup> In some of the interviews, the wife or female partner of the contractor interviewed took part. Cf. Wonneberger (2004) for a discussion of the gendered division of labor in forestry.

<sup>9</sup> I.e., differentiating between primarily market orientated and primarily social relations orientated types of integration on the one hand, and differentiating orthogonally between primarily

guish four types of integration (or embedding) of small contracting enterprises (cf. table 1, previous page). Whereas the traditional form of integration was the “regional social integration”, the processes of marketization established three new forms of integration:

Traditionally, the work of forestry contractors was confined regionally. Work relations between the contractor and the employer depended on familiarity and trust. The local forester did know the contractor and his employees. The high degree of social control as well as the network of localized rural social relations formed the foundation on which the contractor was employed. A typical example is the local farmer who extracts timber in the winter. He is known as person and trusted, sharing the collective values of the village (cf. Müller 1998). *Regional social integration* as typical mode of integration found historically does not only mean dependence on personal knowledge and trust, but also means a way of work organization that is socially thick; as contractor, the farmer seemingly becomes part of the local forest operation.

Marketization changes the form of integration. The relations between forest owner, contractor and timber processing increasingly are moderated through the market, e.g. using calls for bids. The quality assured through trust and personal knowledge becomes now institutionalized, business contacts become de-personalized. The ideal-typical counterpart of regional social integration would be *pure market integration*, i.e. an anonymous market determining the work and work organization of the forestry contractor, using instruments like calls for bids and market prizes. Whereas “regionality” was very important for the work of forestry contractors following the first type of integration, pure market integration transforms region and space into (transactional) costs. To maintain entrepreneurial agency in the mode of pure market integration, taking part in timber trade becomes necessary.

Looking at forestry contractors today, pure market integration is found only rarely. Instead, one finds what can be called *regional market integration*: Contractors are looking for contracts in a specific region, and they invest time to maintain contacts in that region. They have established long-term relations with the local foresters and forest-owners in the region. Compared with regional social integration, the regional integration is created and maintained actively, loosening ties to village values and the regional social framework. The typical contractor working in the mode of regional market integration is not a farmer, but works as forestry contractor professionally and all the year. Entrepreneurial principles become important and replace the social embedding. As it is the case with pure market integration, formalized institutions replace collectively shared values and trust related to social control. Regional market integration can be seen as a hybrid form between pure market integration and regional social integration, combining elements of both worlds.

The fourth mode of integration could be called “*de-facto employment*”. The typical example would be a sub-contractor working for a bigger contracting or logistics enterprise. The sub-contractor is not integrated socially with the local forester or forest-owner. He or she also does not display the typical attitudes of a market-oriented entre-

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regional orientation (“horizontally”) and an orientation that follows primarily the value chain (“vertically”) (Discherl 1989) on the other hand, one finds four ideal types of *integration*.

preneur. Instead of this, the sub-contractor is bound to a bigger enterprise, which decides about work methods, time and amount of work. This would be typical for employment, but in the case of the “de-facto employment” mode of integration, the sub-contractor remains self-employed. Social relations may be found between the contractor and his superior in the bigger enterprise.

Finally, there are free floating contractors that are neither integrated socially nor through the market. Here the risks are especially high, the work for varying forest operations happens on short call, planning is only possible for a few weeks beforehand. The economical situation for these contractors can be especially grave.

The four types of integration discussed here are analytical distinctions, ideal types, following Max Weber. One can see a move from the traditional regional social integration to regional market integration. Exemplary for residuals of older modes of integration is the practice that local foresters write out bills for “their” contractors, even if these are established as enterprises for decades. Even the expectation that a contractor will work “on call”, ignoring other business activities, can be seen as relict of a former mode of regional social integration. Both practices have found their way into the offices of logistics enterprises, where managers deal with their sub-contractors like local foresters dealt with their local farmers-as-contractors.

The most important factor that decides if a contractor can act freely or not is additional activity in timber trade (especially in buying “standing wood”). The leeway for contractors that have the financial and personal possibilities to engage in the – risky – timber trade is markedly bigger than for contractors working “on call” for local foresters or as sub-contractor for bigger enterprises, only. On the other hand, these dependencies – if established over a longer period of time – can also be seen as securing work, reducing risks, and hence as type of integration.

### 2.3 The diffusion of rationalization strategies

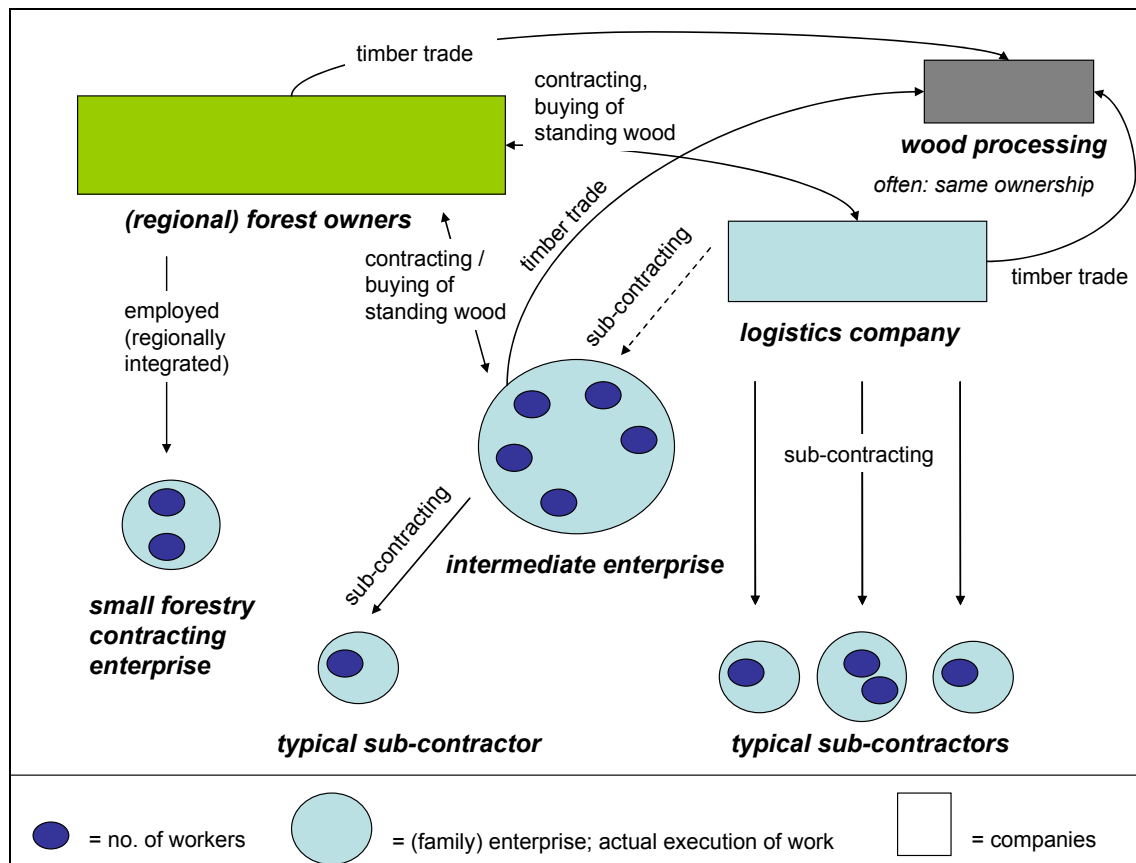
Looking at the empirical results, especially regarding the mode of integration and the role sub-contracting plays, it is possible to distinguish between four different types of contracting enterprises. The primary line of distinction here is not the size of the enterprise, but the work organization. Using an ideal-typical characterization, one can distinguish between (1) “typical sub-contractors”, (2) “small forestry contracting enterprises”, (3) “intermediate enterprises” and (4) “logistics companies” (see fig. 3, next page).

The defining attribute of the *typical sub-contractor* is the integration into the workflow of (1) intermediate enterprises or (2) logistics companies. In the first case, they are often anchored regionally; in the second case one can find a tendency for de-localization. Typical sub-contractors are very small enterprises. Risks of precarity as well as the dependence on bigger enterprises are often strong. Whereas for some kind of contractors, wood owners are market partners, for the typical sub-contractor, other contracting enterprises are the market partners. To survive, the rationalization strategy of the typical sub-contractor is self-exploitation: if it becomes harder to stay in the market, one needs to work longer. Whereas the typical sub-contractor is bound to other enterprises, thus having a certain guarantee of workload and security, there exists also the “a-

typical sub-contractor”, i.e. a small forestry contractor working as sub-contractor without any kind of integration, regulated only by market forces.

*Small forestry contracting enterprises* are comparable in size to the typical sub-contractor, but are integrated into the work-flow of regional forest-owners. Most often, they are family enterprises (or single self-employed contractors), some working only part-time as forestry contractor, earning other income as farmer or from another rural occupation. Risks of precarity for this type of forestry contractors are connected to the increasing marketization of their relations and to the dissolution of regional modes of integration. In reaction, they may use a cooperative strategy: a number of small forestry contracting enterprises with complementary fields of activity join forces to bid in calls for tender.

**Fig. 3: Types of forestry contracting enterprises and the relations between them**



Whereas typical sub-contractors and small forestry contracting enterprises primarily work as contractor for others, the *intermediate enterprise* is not only bigger, but also sub-contracts work out to others. Typically, the intermediate enterprise is a forestry contracting enterprise employing four to twelve workers, sometimes more. Structurally, most of the intermediate enterprises still are family enterprises, with some exceptions structured along the organizational framework typical for bigger companies. Their activities range from contract work for regional forest-owners to engagement in timber trade. Traditionally, competition with other intermediate enterprises is solved territorially: each enterprise works only in a specific territory in the region. Smaller enterprises

are not seen as competitors, but rather as possible sub-contractors. Some intermediate enterprises work for logistics companies; other – sometimes even the same – describe logistics companies as their biggest competitors. Sub-contracting (with long-term relations to specific contractors) is used by intermediate enterprises as rationalization strategy and to organize flexibility.

Finally, *logistics companies* (“Servicegesellschaften”) work as general contractors. Their focus is logistics: the organization of wood flows, buying wood from forest owners, using sub-contractors for timber harvesting and transport, and selling timber to the wood processing industries and the pulp and paper producers. Logistics companies are sub-contracting work regionally, on the one hand to typical sub-contractors, on the other hand to intermediate enterprises. If these themselves use sub-contracting as rationalization strategy, longer ranging chains of contracts are established. For logistics companies, it is economically efficient to sub-contract the work instead of employing workers and machines themselves. Not only work is out-sourced, but also the risks of securing machine workload and of social security. Often, logistics companies are owned by wood processing industries or by private forest owners with large estates.

Comparing these results with three scenarios for the future of forestry work that were described by Ewa Lidén and Edgar Kastenholz in 1999 (Lidén/Kastenholz 1999), two differences are significant.<sup>10</sup> One is the loss of importance of the “cheap work” scenario. Mechanization and other rationalization strategies actually are cheaper than relying on migrant workers in most cases. The other significant difference is hybridization. Even if the development in East Germany is more or less comparable to the “general contracting” scenario Lidén and Kastenholz describe, most of the actual enterprises there are hybrids. Of importance is especially the inclusion of rationalization strategies like sub-contracting and the production of market oriented flexibility into family enterprises like the intermediate enterprises discussed above. Lidén and Kastenholz described these elements as part of the “general contracting” scenario. So the sharp distinction between “bad” logistics companies on the one hand and “good” family enterprises on the other hand becomes impossible, as larger family enterprises mimic general contractors, combining the typical structure of the regionally integrated family enterprise with sub-contracting and engagement in timber trade.

This diffusion of “marketization strategies” into the realm of regional integration and family enterprises leads to flexibility and potentials for rationalization and economical efficiency on the one hand, but also leads to new problems: the market pressure is high; in the struggle for survival contractors tend to exploit their workers and themselves. Risks are out-sourced to very small enterprises which often are not capable of adequate insurance. Standards of work safety and environmental protection become more diffi-

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<sup>10</sup> The three scenarios of Lidén and Kastenholz were (1) “cheap work”, (2) “family work” and (3) “general contracting”. In the “cheap work” scenario, most of the work in forestry is done by temporary migrants from Middle and Eastern Europe. The “Family work” scenario is a future based on the model of regional integration and well-trained family enterprises. “General contracting” finally is based on the domination of logistics companies, organizing the work via sub-contracting (market integration).

cult to control when their avoidance is embedded deeply into sub-contracting chains. This is also the case in regard to ecological certification (FSC, PEFC). A certified contractor or wood owner is responsible that all contractors and sub-contractors employed follow the rules of the certifying agency. In practice, this level of control is not possible.

In conclusion, one can say that the business plans of logistics companies – and also of intermediate enterprises following their path – only can be fulfilled if there are enough small sub-contractors willing to risk precarity and self-exploitation.

## 2.4 Sub-contracting and personal trust

In discussing the different types of forestry contracting enterprises, the importance of sub-contracting relations became visible. Looking closer, one can distinguish between different types of sub-contracting relationships, especially between a *hierarchic type* and *egalitarian sub-contracting relations*. In both cases, the contracts are typically verbal contracts. Trust and personal knowledge were emphasized when interview partners were asked about the way contracting works in forestry.

The relations displayed in fig. 3 (see p. 9) are clearly of the *hierarchic type*. Larger enterprises out-source work to contractors, often prescribing the prices they will pay as well as the time frame and the methods of choice to accomplish the task contracted. Reasons for using sub-contracting have been discussed above: flexibility (especially regarding seasonal fluctuations), rationalization, and also the possibility of selling complementary or specialized services that cannot be done with the own workers and machines. From the point of view of the sub-contractors, the tie to the contracting enterprises gives them a certain amount of security. The actual way in which hierarchic sub-contracting takes place can differ amazingly, ranging from de-facto employment (but without health insurance) to real entrepreneurship, and from a feeling of “responsibility for smaller enterprises in the region,” as one intermediate enterprise owner puts it, to brute optimization of efficiency. The later can be illustrated with a quote from a logistics company manager, who said:

“One has to see it clearly: sub-contractors are poor pigs. A very big advantage of sub-contracting is the possibility – so terrible that sounds – to fire the sub-contractor, when we cannot or will not accept bids because of the timber market.” (H4, translation T.W.).

But sub-contracting can also take the form of *egalitarian relations*. This is the case if two or three smaller enterprises join forces to participate in calls for bids, when the single enterprise is not big enough or cannot fulfill all tasks necessary. Here, the relationships formally are structured as sub-contracting between one enterprise – taking the lead and filing the bid – and the others. De facto and contrary to the legal requirements, the participating enterprises see themselves as equals. Some contractors voice concern about the necessities of formal contracts for this kind of participation in calls for bids. Instead, they agree informally to file in complementary bids, e.g. one for hauling short-cut timber, the other one only for hauling long-cut timber. Generally speaking, coopera-

tion through sub-contracting gains further relevance with calls for bids becoming mandatory for public services, e.g. forestry services, in the European Union.

In a broader view, cooperation through sub-contracting is only one example for *informal cooperation strategies* between forestry contractors. Other examples include the swapping of services<sup>11</sup>, the unpaid adjustment of the harvesters' computer for another contractor, the usage of the repair shop of a larger enterprise by a sub-contractor, and of course the propagation of information<sup>12</sup>, e.g. about buyers unable to pay. Fading into illegal activities, informal cooperation also includes practices like price-rigging between several contractors and moonlighting instead of proper employment contracts. In practice, informal cooperation strategies are very important for forestry contractors – based not only on the long-standing forestry tradition of verbal contracts and on the rural tradition of the “local economy” (cf. Müller 1998), but also on the low level of formal organization and on the predominance of family enterprises. On the one hand, it is important to distinguish between informal cooperation and egalitarian cooperation: informal cooperation can be as asymmetric and hierarchical as relations inside of formal institutions. On the other hand, one has to see that informality builds up onto reciprocity. Common to the different forms of informal cooperation are practices outside of the “officially” sanctioned ways, leading to an invisible lubrication of the wheelworks of daily work. One could even say that the relevance of informal cooperation for the functioning of forestry work underlines the possibility of work outside of the dominance of the instrumental-rational.

Forestry contractors see cooperation with ambivalence. On the one hand, collegiality between contractors is seen as a necessity that should not be endangered. This is especially true for very small enterprises which cannot survive if they do not cooperate. On the other hand, in the course of marketization, a professional self-conception becomes more important. Such a self-conception is linked to entrepreneurship, market orientation, written contracts, certification and accurate calculation. Its inner logic conflicts with the logic of rural informalities. So one may ask: Why do contractors see themselves in the need to become professionals? One reason is the demands put forward by state forest services and their forest operations. Another reason can be found in the globalization and concentration processes, especially in the competition of logistics companies. Professionalization is seen as the only way to stay in the market.

The conceived ambivalence of cooperation is also rooted in the personal and biographical experiences of the contractors. Some contractors told us about verbal contracts broken, or about informal cooperations that did not work out. Here the function of *personal trust* as an important basis for cooperation becomes obvious. This poses questions about future relations between contractors in a context where increasing marketization more and more defines the economic framework. Are personal trust and verbal contracts

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<sup>11</sup> For some enterprises, cooperation and competition go together, e.g. to save on the costs of moving machines, they swap (formally or informally) a contract with some other enterprise, even if they compete with that other enterprise in other situations.

<sup>12</sup> Michael von Kutzschenbach (Kutzschenbach 2006) gives a detailed account on information sources of forestry contractors and their information sharing practices.

strong enough to bear a social configuration moderated primarily by the market? Following Luhmann (1989), in modern societies, personal trust is replaced with systemic trust. Whereas personal trust is based on familiarity, systemic trust works anonymously, using standards, “normality” and generalized media of communication, e.g. money. Only trust in systemic institutions makes integration into the long value chains of the global market possible. So forestry contracting is undergoing a transition: the old balance of personal trust and systemic trust is lost; a new balance is not established yet. Actually, we can see the creation of new institutions typical for systemic trust (like certification labels) in places where personal trust and regional integration lose their role as basis for contracts and cooperation.

## 2.5 Zooming in further: working conditions of forestry contractors<sup>13</sup>

While the previous sections dealt with the abstract types, structures and transformations found in the field of forestry contractors, here we zoom in further, looking at the actual working conditions and the work organization in forestry contracting enterprises. Whereas in our interviews owners of smaller contracting enterprises as well as executives of larger logistic companies were interviewed, the findings presented in the following sections concern primarily smaller contractors, working in the fields of timber harvesting and timber extraction.

Most of the smaller forestry contracting enterprises we interviewed are organized as family enterprises. Only very few contractors are structured along the standards of business studies textbooks. Family enterprises are characterized by very flat hierarchies, by informalities and familiarity. The level of separation between the contractor’s family and the business is low or not existent at all. Family members, especially the wife or the partner of the contractor, are of special relevance for the functioning of the enterprise. The engagement of family members in the contracting enterprises can assume different forms, e.g.:

- The wife is formally employed for office work in the contracting enterprise,
- Handling of the office work by the wife without payment,
- Sons, brothers or brother-in-laws of the owner working as employees,
- Informal and unpaid participation of family members, e.g. discussing to buy a new machine with the father-in-law first.

Complementary, long-time workers – sometimes even long-time sub-contractors – who are not members of the family nevertheless find themselves in a position similar to a family member. This “familiarity” is established by a mixture of patriarchal leadership and a relatively high degree of autonomy of the workers. A typical example for the atmosphere in family enterprises gives one intermediate enterprise (H3), where there is a common breakfast before the work starts, including family members as well as workers.

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<sup>13</sup> See also Kastenholz (2003).

Small structures and the high relevance of family and familiarity were and still are typical for rural enterprises. Similar structures can be found in farms and in craft workshops (Berger et al. 1990; Brüggemann/Riehle 1995; Daheim/Schönbauer 1993: 60 ff.; Fink-Keßler/Hahne 2004; Fliege 1998: 207 ff.; Müller 1998). Even for rural medium enterprises in the industrial sector, a high degree of “life world” qualities and informalities is typical (Kotthoff/Reindl 1990: 379).

A consequence of the predominance of family enterprises (and single self-employed contractors) is a low degree of “Betrieblichkeit”<sup>14</sup>. The few enterprises in our survey with higher degrees of “Betrieblichkeit” are characterized by a larger number of employees, by a clear-cut internal division of labor, by an additional level in the internal hierarchy, namely the existence of directors of operations, and especially by a change in the function of the owner or manager. His work now includes mostly managerial tasks and moves away from participation in the direct execution of work. In enterprises with a low degree of “Betrieblichkeit”, the work profiles of owner/chief and of the workers are not very different, mostly distinguished only by additional tasks in planning and organization the owner has to fulfill. These are often done in the evening or at the weekend. Another difference between owner and workers of course is the economical risk, which has to be taken by the owner, not by the workers; at least if they are employees and not sub-contractors or “free workers”.

Most of the interviewed smaller contractors say they do not want a greater degree of “Betrieblichkeit”. Reasons include the desire to keep a direct overview over the enterprise, financial restrictions of the small enterprises that do not allow for the financing of a pure managerial position, and also a high value for participation in direct work. When we asked why participation in direct work is so important, reasons told included “office work is no fun, I really do like working the machines in the forests”, the increased flexibility with the owner also working the machines, and the greater degree of control about the work of employees and sub-contractors that becomes possible if one has a “feeling” for the machines and their possibilities.

In terms of *habitus* (Bourdieu 1987), the high value for direct work divides between the workers and owners of forestry contracting enterprises on the one hand and the managers of logistics companies on the other hand. Education and training, personal experiences and identity differ between these two spheres. One could be called a sphere of “rural direct work”, which includes not only contractors and forest workers, but also farmers and rural craftspeople. The other, separated, sphere would be the sphere of “rural managers”, including foresters, managers of logistics companies and probably also managers of larger privately owned forests. In our interviews, this dividing line became most clearly visible when we asked if the interview partner participates in hunting, which is a recreational (and networking) activity of the “rural managers”, but not of the members of the sphere of “rural direct work”.

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<sup>14</sup> Literally, “Betrieb” could be translated with company, enterprise or operation. “Betrieblichkeit” – the degree something conforms to the type of “Betrieb” – here includes the adherence to business standards in organization and operation as well as the existence of well defined borders of the organization.

A flipside of family enterprises, familiarity and low formality is the *gendered division of labor*. Women who become forestry contractor are clearly an exception.<sup>15</sup> The occupational image is that of a male occupation. The male contractor is seen as doing the “real work” or the “hard work”, supported by female work, e.g. in the office. This corresponds with the division of labor in family farms (cf. Fliege 1998: 223). The division is hierarchically, establishing traditional gender roles<sup>16</sup> also with regard to family work and reproductive work, further strengthened by long working hours and demands of flexibility and mobility (see below). Egalitarian models for the division of labor in the family are not supported (cf. also Degele 2003; Wonneberger 2004). From a perspective of gender equality and “sociability” of work (cf. Janczyk et al. 2003) this gendered – and hierarchial – division of labor is problematic.

The work of forestry contractors can also be described as *flexible work* and at the same time as *risky work*. Flexibility is not only a demand of the market (in the traditional form of work “on call” or today as part of “just-in-time” logistics), but is also seen as an important competitive edge by the owners themselves. Flexible work includes

- flexibility in time and duration,
- spatial mobility,
- and to some degree also flexibility regarding the tasks the contractor does.

To make flexible work possible, the working hours in most forestry contracting enterprises do not follow strict regulations. In some enterprises, we also find payment systems that are not coupled to working hours, but are coupled to the amount of timber harvested. Two other enabling factors for flexible work are the informalities of family enterprises and the wide range of qualifications of the employees usually found in forestry contracting enterprises. Finally, the employment of sub-contractors is of great relevance for enabling flexibility (see 2.3).

Flexibility demands as well as the economical necessity to maximize the utilization of capital-intensive machines lead to long working hours.<sup>17</sup> This is especially true for the contractors themselves, but also (in most of the contracting enterprises, and to a lesser degree) for the employees. These results from our qualitative interviews are sup-

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<sup>15</sup> Cf. Kunze (2003) for the portrait of a female contractor working with horses.

<sup>16</sup> Sometimes neo-traditional gender roles: both work for pay, the man as contractor, the woman (part-time) in another job, so there is a double income, but household work, children and help in the enterprise are still seen as female responsibilities, creating in effect a double work-load for women in small rural enterprises.

<sup>17</sup> Although the long daily working hours often change in a seasonal pattern, i.e. work even on Saturdays and sometimes on Sundays in winter, and holidays or even times of unemployment in summer. Whereas forestry work in the past was very dependent on the weather and the light situation (visibility), this is changing with the diffusion of larger forestry machines.

ported by first the quantitative survey the European project ERGOWOOD conducted (cf. Lewark et al. 2004).<sup>18</sup> According to ERGOWOOD, three quarters of the machine operators in Germany interviewed work longer than 40 hours per week, the average are 52 hours per week. Other problems named are the isolated working places and the rather low pay.

Besides flexibility in the time and the duration – sometimes stimulated by specific payment systems –, contracting enterprises often demand *spatial mobility* from their employees, so that they can fulfill contracts located relatively far away from their place of business. Contractors in Baden-Württemberg told us about work in France and Austria, contractors in Saxonia-Anhalt work regularly in other German states. This leads to a preference for employees that are not bound to the local region, neither because of family nor because of part-time farming. Whereas contractors say that they prefer to work regionally, the limiting factor for working far away in fact seems to be the costs of machine transport.<sup>19</sup>

Work in forestry contracting enterprises is also *risky work*. It is often more hazardous than work in larger enterprises, because work safety and work health regulations are often ignored, and ergonomics is not seen as important issue for the enterprise by the owners. The system of out-sourcing and sub-contracting is challenging for work science (cf. Kastenholz/Lewark 2005) as well as for trade unions and contractors' associations (cf. Kastenholz 2003). The work is also risky in another meaning of the word: the economical situation of the smaller enterprises is often difficult, shifting to the side of precarity when modes of integration fail. Contractors do not only have to bear the burden of securing the utilization of their machines, but also have to insure for old age and their health. Often, this is not done properly, posing the risk of a difficult social situation in the future.

## 2.6 The role of rural traditions and regionality

A last facet we should look at is the role of rural traditions and regionality. Searching the biographical backgrounds of forestry contractors for links to farming and forestry work, one can find such links with almost all contractors (but not as often with their employees). Such links range from training in agricultural occupations to parents who were farmers. If a farm was inherited by the contractor, farming stopped in almost all cases, often following a pattern: first working as contractor and at the farm, then part-time farming, leasing the fields to others and finally using the farm buildings for the contracting enterprise only. In some cases, farming continues as a hobby, e.g. keeping

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<sup>18</sup> See also <http://www2.spm.slu.se/ergowood/index.htm> for further information about the project ERGOWOOD.

<sup>19</sup> This once again shows the importance of technology for the transformations described here. Large forestry machines de-couple work from the region and the nature and increase productivity. The utilization becomes of prime interest because of the capital bound in the machine. Another example for technological leverage is the mobile phone, making it possible for the self-employed contractor to acquire new contracts while working in the woods.

some horses or sheep. In other cases, the contractors continue a minimal amount of farming for tax reasons (agricultural taxes are often lower than enterprise taxes). One contractor puts the reasons for the decline of farming and the emergence of full-time forestry contracting in the following words:

“To continue farming means that one has to shut down expensive forestry machinery just to do field work.” (Interview H1)

Also, in most cases we found biographical links to forestry: training as forestry worker, or parents, relatives or neighbors working in forestry, sometimes a history of working first as a forestry worker and then establishing the own enterprise. In Saxonia-Anhalt, older interview partners mostly had done some work for the GDR state forests or its technical operations, whereas here the biographical link to forestry is in decline with younger interview partners.

The connection with agriculture and forestry brings resonances of traditions of rural work, e.g. a high esteem for the quality of work, an instrumental view on nature, or in the case of forestry, an orientation towards long-term processes. Another orientation stemming from rural traditions is that of omnipresent and autonomous work, resonating with the new post-industrial demands on work organization. These “rural” attitudes are combined with a high degree of interest or sometimes even fascination for technology.

Regarding regionality, most of the contractors say that they estimate it were highly. Here one can distinguish between three aspects of regionality:

1. to *stay in the region* they were born,
2. the desire to *work close to home*, possible all the time in the same area. Often this is not possible. Reasons for this desire for regional work include knowledge about the natural conditions of the forests they work in, the possibility of word-of-mouth advertising in the region, the high costs for machine transport and
3. finally, in some cases, “*Heimatverbundenheit*”, i.e. a patriotic connection to the birth region.

“Heimatverbundenheit” and the desire for work close to home are not always correlated. So we find contractors that are very interested in the well-being of their region and say that they are proud of it, but that work away rather often and rather far away. Other contractors prefer to work at one place, but say they are not interested in the politics and culture of their region at all, and that they will move if the economical situation is better somewhere else. Here one can notice an important difference between family farms (Fliege 1998: 214 ff.) and forestry contractors. Whereas family farms are “rooted” in a region via their ownership of fields, meaning that the farmers are not able to move to another region if they do not want to sell their fields, this is not true for forestry contractors.

### 3 Third perspective: sustainable regional development

Combining the first and the second perspective, it becomes possible to discuss the consequences of the out-sourcing of forestry work in a framework of sustainable regional development. If one is interested in an ecologically, economically and socially sustainable development of rural regions, the findings presented above are critical.

We find hybrids between post-industrial work and rural traditions. Many elements – like the low level of “Betrieblichkeit” and the omnipresence of work, to mention only two – are typical of rural craftsmanship and small-scale agricultural work. These traditional elements of work in rural areas are now being recombined. Even if the working conditions look familiar on first view, the context in which small enterprises and omnipresent work takes place, has dramatically changed and is something new for rural work: the global market. In this new context, traditional elements of work lose their innocence, if they ever were innocent. This is especially true for the re-distribution of the risks and the burdens of failure linked to the out-sourcing of work.

Looking at the consequences of the developments described at the macro level of sustainable development, the out-sourcing of forestry work is not preferable, neither from an ecological nor from an economical or social point of view. A lower degree of familiarity with the working area as well as the increased pressures of global market competition together with the existence of the intractable problem of control in subcontracting chains lead to ecologically questionable practices and to the loss of views on forests as more than goods and assets. Economically, the increasing relevance of centralized structures like large wood processing industries means that only little added value remains in the regions (cf. Fink-Keßler/Hahne 2004a). And understanding sustainability socially, the decrease of secure employment opportunities in rural regions as well as the negative consequences for gender equality are remarkable.

What can be done? Some possible reactions lie inside the present constitution of work. If one sees the context described above as not changeable, one can introduce further elements of marketization and rationalization, proposing further professionalization, growth and mergers. On the one hand, this can be seen as a process of “growing up” and maturing. On the other hand, it is quite possible that such a strategy will beat back in the long-term, leaving industrial raw-material warehouses in the place where once forests and rural regions could be found.

Is marketization inevitable? As an alternative positioned inside the contemporary constitution of work the strategy of economical re-regionalization was discussed in the project WALD (cf. Brüggemann/Riehle 2005; Gothe/Hahne 2005). Brüggemann and Riehle exemplify this strategy using the already existing model of the “Holzkette” (“wood chain”), i.e. an actively managed network of small and middle-sized enterprises in a region, combining forest owners and wood-producing farmers, craftspeople, contractors and wood energy producers, and also local political entities and tourism managers. They describe the “Holzkette” as way to improve regional economical potentials, linking aspects of traditional regional identity with an outlook on the future that encompasses the whole region instead merely partial interests. In the combination of production, services and regional marketing, the “Holzkette” can become an alternative to raw

marketization and to the global timber market. This long-term project is only possible with the help of external change managers *and* local activists, challenging the local arrangements without ignoring them (Brüggemann/Riehle 2005: 18). Moving this to a more abstract level, they propose to use forests and forestry as a starting point for long-term sustainable alternatives to pure economical logic; integrating ecological ideas, regional networks and an extended idea of “work” with elements of rural traditions (multifunctional and plurality of work, goal of quality instead of quantity) (Brüggemann/Riehle 2005: 29 ff.).

Gothe and Hahne analyze the economical impact of regional clusters centered on wood as energy source, on the use of wood for building, and on furniture made from regional wood. They use best-practice examples for their calculations, and conclude that a strategic decision for actively using regional wood has clearly a positive economical impact on regions in terms of regional value gained. Like Brüggemann and Riehle, they also emphasize the importance of managing this processes of regional learning and the integration of external experts, if such strategies should remain successful even under increased pressure from global competition (Gothe/Hahne 2005: 45). Gothe and Hahne also show that re-regionalization strategies at least today are niche strategies.

Finally, one can take the results of this study and use them as arguments for a change in the present constitution of work itself, calling for an end of the neo-liberal era. Instead of going back to the idylls of pre-industrial times or wishing back the “welfare of the masses” of the “fordistic” industrialism, this means developing concepts and regulations adequate for a post-industrial society. The de-coupling of income and work, a loosening of the fixation on paid work, could be such a strategy suitable for a post-industrial society, in urban centers as well as in the peripheries (cf. Beck 1999). It could change the economical basis for small forestry contractors, so that it would be possible for them to work more sustainable, at the same time giving incentives to stay in the region, to continue multi-functional forestry in a post-industrial society, and to enable contractors to engage in a field of work for which they are highly motivated without rising precarity or self-exploitation.

## References

- Beck, Ulrich (1999): Wohin führt der Weg, der mit dem Ende der Vollbeschäftigungsgesellschaft beginnt? In: ders. (Hg.): Die Zukunft von Arbeit und Demokratie. Frankfurt/Main, 7-66.
- Berger, Johannes; Domeyer, Volker; Funder, Maria (Hg.; 1990): Kleinbetriebe im wirtschaftlichen Wandel, Frankfurt am Main, New York.
- Bourdieu, Pierre (1987): Die feinen Unterschiede. Kritik der gesellschaftlichen Urteilskraft. Frankfurt am Main.
- Broggt, Thomas; Westermayer, Till (2005): Kleinste Holzernte- und Ruckebetriebe überwiegen. In: Forst & Technik, 3/2005, 10-12.
- Brüggemann, Beate; Riehle, Rainer (1995): Umweltschutz durch Handwerk? Frankfurt am Main, New York.
- Brüggemann, Beate; Riehle, Rainer (2005): Innovation für Arbeit in ländlichen Räumen. WALD-Arbeitspapier Nr. 10, Institut für Forstbenutzung und Forstliche Arbeitswissenschaft, Freiburg.
- Daheim, Hansjürgen; Schönbauer, Günther (1993): Soziologie der Arbeitsgesellschaft. Grundzüge und Wandlungstendenzen der Erwerbsarbeit. Weinheim, München.
- Degele, Nina (2003): Mutti spült, Papa arbeitet. Zur Soziologie von Arbeit und Geschlecht. In: Freiburger Frauen Studien, Nr. 13, 175-194.
- Dirscherl, Clemens (1989): Bäuerliche Freiheit und genossenschaftliche Koordination. Wiesbaden.
- Erler, Jörn (2001): 125 Jahre Waldarbeit. Teil 1: Die Waldarbeiterfrage von 1875. In: Forst & Technik, 10/2001, 14-17.
- Erler, Jörn (2001a): 125 Jahre Waldarbeit. Teil 2: Beginn der Forstlichen Arbeitswissenschaft. In: Forst & Technik, 11/2001, 18-19.
- Erler, Jörn (2002): 125 Jahre Waldarbeit. Teil 5: Ausbildung und Ausblick. In: Forst & Technik, 3/2002, 18-21.
- Fink-Keßler, Andrea; Hahne, Ulf (2004): Arbeit in ländlichen Räumen und der Beitrag von Land- und Forstwissenschaft. WALD-Arbeitspapier Nr. 4, Institut für Forstbenutzung und Forstliche Arbeitswissenschaft, Freiburg.
- Fink-Keßler, Andrea; Hahne, Ulf (2004a). Neue Unternehmen im Wald. Veränderungsdruck auf dem Land und individuelle Reaktionen. In: Land-Berichte, Sozialwissenschaftliche Halbjahresschrift über ländliche Regionen, Aachen, Nr. 13., Jg. VII, 2/2004, 5-18.
- Fliege, Thomas (1998): Bauernfamilien zwischen Tradition und Moderne. Eine Ethnographie bäuerlicher Lebensstile. Frankfurt am Main, New York.
- Gothe, Dorle; Hahne, Ulf (2005): Regionale Wertschöpfung durch Holz-Cluster. WALD-Arbeitspapier Nr. 14, Institut für Forstbenutzung und Forstliche Arbeitswissenschaft, Freiburg.

- Gröger, Vera; Lewark, Siegfried (2002): Der arbeitende Mensch im Wald – eine ständige Herausforderung für die Arbeitswissenschaft. Dortmund, Berlin, Dresden: Bundesanstalt für Arbeitsschutz und Arbeitsmedizin.
- Hainz, Michael (1999): Dörfliches Sozialleben im Spannungsfeld der Individualisierung. Bonn: FAA.
- Hamberger, Joachim (2003): Wie Mechanisierung und Umweltvorsorge die Forstwirtschaft verändern. In: LWFaktuell, No. 39, 33-36.
- Härtdter, Ulf (2003): Nichtbäuerliche Eigentümer von Kleinprivatwald. Dissertation, Albert-Ludwigs-Universität Freiburg.
- Janczyk, Stephanie; Correll, Lena; Lieb, Anja (2003): Quo vadis Arbeit? Jenseits verengter Perspektiven und Deutungsmuster. Working paper, GendA-Projekt, Marburg.
- Kastenholz, Edgar (2003): Arbeit in Forstunternehmen. In: Forst & Technik, 6/2003, 16-21.
- Kastenholz, Edgar; Lewark, Siegfried (2005). Gesundheitsschutz in kleinstbetrieblichen Arbeitsformen - eine Herausforderung für eine zukunftsfähige forstliche Arbeitswissenschaft. In: GfA (Hg.): Personalmanagement und Arbeitsgestaltung. Bericht vom 51. Kongress der Gesellschaft für Arbeitswissenschaft. Dortmund, 713-716.
- Kotthoff, Hermann; Reindl, Josef (1990): Die soziale Welt kleiner Betriebe. Wirtschaften, Arbeiten und Leben im mittelständischen Industriebetrieb, Göttingen.
- Kunze, Brigitte (2003): Holzrücken mit dem Pferd – Relikt oder Nische mit Zukunft? Unveröffentlichte Diplomarbeit, Institut für Forstbenutzung und Forstliche Arbeitswissenschaft, Freiburg.
- Kutzschenbach, Michael von (2006): Analyse des Informations- und Wissensflusses bei Forstunternehmen. Dargestellt am Beispiel von Forstunternehmen innerhalb des Verbandes der Agrargewerblichen Wirtschaft e.V. Arbeitswissenschaftlicher Forschungsbericht Nr. 1, Freiburg: Institut für Forstbenutzung und Forstliche Arbeitswissenschaft.
- Lewark, Siegfried; Brogt, Thomas; Lidén, Ewa; Kumm, Jürgen (2004): Arbeitsbedingungen in der hochmechanisierten Holzernte in Abhängigkeit von der Arbeitsorganisation. Ergebnisse einer vergleichenden Erhebung in europäischen Ländern. Manuskript.
- Lidén, Ewa; Kastenholz, Edgar (1999): Zukünftige Entwicklungen der Arbeitsbedingungen von Waldarbeitern in forstlichen Dienstleistungsunternehmen in Deutschland. Manuskript.
- Lohkamp-Himmighofen, Marlene (1990): Erwerbschancen und Arbeitsbedingungen der ländlichen Bevölkerung. Bonn: FAA.
- Luhmann, Niklas (1989): Vertrauen. Ein Mechanismus der Reduktion sozialer Komplexität. 3., durchgesehene Auflage, Stuttgart.
- Müller, Christa (1998): Von der lokalen Ökonomie zum globalisierten Dorf. Bäuerliche Überlebensstrategien zwischen Weltmarktintegration und Regionalisierung. Frankfurt am Main; New York: Campus.
- Spellerberg, Annette (2004). Ländliche Lebensstile. Ein Forschungsüberblick. Im Erscheinen.
- Strauss, Anselm L.; Corbin, Juliett (1998): Basics of Qualitative Research. 2<sup>nd</sup> edition, SAGE.

- Suda, Michael; Schaffner, Stefan (1999): Der bäuerliche Waldbesitz im Strudel der Globalisierung. In: AgrarBündnis (Hrsg.): Der kritische Agrarbericht 1999. Rheda-Wiedenbrück: AbL, 295-298.
- Vonderach, Gert (2004): Ländliche Räume im Übergang zur ‚postindustriellen Gesellschaft‘? Ein Streifzug durch die land- und agrarsoziologischen Beiträge von Herbert Kötter (1916-2003). In: Land-Berichte, Jg. 7, Heft 12, 83-92.
- Westermayer, Till (2002): Vom Lohnunternehmer zum forstlichen Dienstleistungsunternehmen: Eine erweiterte Begriffsbestimmung. WALD-Arbeitspapier Nr. 2, Institut für Forstbenutzung und Forstliche Arbeitswissenschaft, Freiburg.
- Westermayer, Till (2004): Werkstattbericht: forstliche Dienstleistungsunternehmen. WALD-Arbeitspapier 8, Freiburg: Institut für Forstbenutzung und Forstliche Arbeitswissenschaft.
- Westermayer, Till (2006a): Die Ich-AG im Walde. Arbeit in ländlichen Räumen der postindustriellen Gesellschaft am Beispiel forstlicher Dienstleistungsunternehmen. In: Berliner Journal für Soziologie, Jg. 16, H. 2, S. 211-225.
- Westermayer, Till (2006b): Empirische Ergebnisse zu klassischen Forstdienstleistern, in: WALD-Endbericht, in preparation.
- Westermayer, Till; Brogt, Thomas (2006): Forstliche Dienstleistungsunternehmen in Deutschland 2004. Ergebnisse einer quantitativen Erhebung. WALD-Arbeitspapier Nr. 15, Freiburg: Institut für Forstbenutzung und Forstliche Arbeitswissenschaft.
- Wonneberger, Eva (2004): Arbeit rund um Wald im Geschlechterblick. WALD-Arbeitspapier Nr. 7, Freiburg: Institut für Forstbenutzung und Forstliche Arbeitswissenschaft.

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