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DISCUSSION PAPER

Leibniz Institute of Agricultural Development in Central and Eastern Europe

CONCEPTUAL FRAMEWORK FOR ANALYSING STRUCTURAL CHANGE IN AGRICULTURE AND RURAL LIVELIHOODS

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SCARLED

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DELIVERABLE 2.1

"Conceptual framework for analysing structural change in agriculture and rural livelihoods"

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Abstract

The Deliverable 2.1 (D2.1) of the SCARLED project provides the conceptual framework for analysing structural change in agriculture and rural livelihoods in the NMS and established Member States of the EU. It concisely summarizes the underlying theories and concepts of the pertinent research issues in SCARLED.

SCARLED addresses a topic of wide interest with regard to the identification of past and future key social and agricultural restructuring processes for a living countryside in the NMS. Methodologically, the topic is approached by comparative, structured multi-country farm surveys complemented by an analysis of structural changes in the farm sectors of two selected regions with the agent-based simulation model AgriPoliS, taking special account of demographic changes. In addition, SCARLED studies success stories of rural development in selected regions of five established Member States

For all topics covered by the SCARLED workpackages, the most relevant literature has been reviewed. The driving forces of structural change and rural livelihoods are identified and discussed in detail. All subsequent SCARLED analyses and methodological approaches will refer to this document. On the basis of this conceptual framework paper, the framework for the survey tool is established and will be further developed to serve the needs of the empirically based workpackages. The analysis of rural development success stories in established Member States will use the common methodological framework outlined in D2.1.

The literature used in D2.1 is customized in Endnotes, a software system for managing bibliographies. Furthermore, it is noted that outputs and new developments in SCARLED will be documented on the project's homepage - www.scarled.eu.

Executive Summary

Since 2004, the European Union (EU) has undergone an unprecedented enlargement, reuniting the Western and Eastern parts of the continent. Subsequently, the share of rural areas and of those employed in agriculture grew notably in the EU27. The new Member States (NMS10) in Central and Eastern Europe (CEE) have already undergone substantial sector restructuring and socio-economic transformation. Nevertheless, as regards the agricultural sector and rural livelihoods, a great number of them still display a tremendous disparity as compared to the EU15-average. Often, the rural economy can not sufficiently support rural livelihoods. Especially, those living from (semi-) subsistence farming are prone to low productivity, low incomes and vulnerable livelihoods. Therefore, it is important that the ground is prepared for significant structural changes in the labour force, farming structures, and the wider rural economy. If structural change does not take place, rural areas in the NMS will continue to lose attractiveness for investment and population.

Deliverable 2.1 (D2.1) provides a topical literature review and based on this the conceptual framework for analysing structural change in agriculture and rural livelihoods in the NMS and established Member States of the EU. It summarizes theories and concepts pertinent to key research issues of SCARLED: structural change in agriculture (Chapter 2), labour markets in transition (Chapter 3), changes in rural livelihoods (Chapter 4), socioeconomic functions of (semi-) subsistence farming and cooperation (Chapter 5),

employment diversification (Chapter 6), and the evolution of farm structures in transition (Chapter 7). Chapter 8 is devoted to outlining the methodology behind the empirical works. A structured questionnaire, covering the above stated key research issues will be applied in five NMS: Bulgaria, Hungary, Poland, Romania, and Slovenia. One could say that the empirical work is uniting the research efforts in the NMS, notwithstanding that also other sources of information are used to derive conclusions. The so-called Common Methodological Framework (see Box 8.1) will be used to study the success stories in rural development in the established Member States (Austria, Ireland, new German *Bundesländer*, Spain, and Sweden). In the following, the main findings and concluding points from the topical literature review are presented.

Structural change in agriculture (or any sector) is characterised by constant changes in the deployment of the production factors of labour (including human capital), land and financial capital. Social capital in the form of social networks is a resource, not to say a production factor, that appears to be more and more important in the economic and thus the structural adjustment process of economic sectors, notably also in the agricultural sector. Structural change manifests itself in a clear change in the structure of production. Within agriculture, the size of the workforce and the number of farms are reduced, often to the benefit of a relatively higher number of larger farms.[ii] In relation to the national economy, the proportion of those employed in agriculture falls. In some NMS (i.e. Bulgaria, Romania, and Slovenia), structural change in agriculture seems to be slow at best, when this definition is taken as reference measure. Other NMS, such as Hungary and the Czech Republic, experienced dramatic changes in the agricultural labour force in the early years of transition. Nevertheless, while the primary agricultural sector seems to be sometimes in a deadlock, the up- and downstream enterprises (including wholesale and retail) associated to the agricultural sector appear to be more dynamic. In this context, vertically integrated food production may more easily generate structural change than independent farming.

Growth, especially uneven growth in the different sectors of an economy automatically produces structural change. Productivity growth in a sector not only causes economic growth but results in sectoral and inter-sectoral shifts of employment. While economic growth is positive, labour shifts may be associated – at least temporarily – with social hardship. This seems to be frequently the case in structural adjustment processes in agriculture. One could observe this in the first phase of structural change, when state-owned, corporate and cooperative farms were broken apart within the privatisation process of transition and in a more recent phase when the many small-scale farms that were a result of the transition process (for instance in Bulgaria, Poland, Romania) found themselves incapable of generating a inter-regionally comparable livelihood base. If farms see a potential for growth, they invest in the adoption of new technologies to increase agricultural productivity and thus improve their livelihoods. Nevertheless, larger farms tend to switch more easily to new technologies. This may be due to better capital availability or a higher degree of managerial capability. The managerial capability is also crucial for the adaptive reaction to increasing dynamics in an economic sector such as agriculture. Increased labour productivity in agriculture (among small- and large-scale

[ii] Clearly, other factors also influence farm size, for instance: institutions (including economic, agricultural, and environmental policies), the number of farms, and labour supervision costs.

farms) and increasing non-farm employment opportunities[iii] due to overall economic growth can further accelerate employment shifts. The salvage value of existing and new technologies can, however, also contribute to the explanation of the persisting duality in farm structure in a notable number of NMS.

The commonly accepted view is that farm size growth is associated with greater economic efficiency. This would call for structural change in the direction of larger farms. Yet, depending on the institutional environment (including the economic, agricultural, and environmental policy mix) and the production mix, smaller farms may reach a minimum efficient scale and effectively compete with larger farms. This is a clear indication for the fact that the policy mix can either retard or accelerate structural change.[iv] Nevertheless, even in the presence of economies of size and a favourable policy environment, factor mobility may be inhibited due to prohibitively high sunk costs[v] and other drivers such as 'enjoying farm work' or 'bad' social networks. These lead to an economically unconceivable persistence of small-scale farms or (semi-) subsistence farm households.

As indicated above, the existence of non-farm jobs may ease structural change due to the fact that the unproductively employed workforce in agriculture can find alternative employment. Non-farm jobs, especially the type that is low paid, can however also retard structural change. South-west Germany is a good example for small- and medium-scale farms that are cross-subsidized by income from non-farm jobs, leading to a very persistent small-scale, part-time farming structure. Obviously, the scientific findings as to the effect of access to income from non-farm employment are mixed – some find, it increases the probability of farm exit and others it helps smaller farm livelihoods to survive.

Well functioning ***rural labour markets*** are essential for the well-being of the people, both for those employed in agriculture and those not. They are a major factor in determining where people live, work and spend their income. Similarly to the EU15 in the 1960s and 1970s, the rapid economic development in the accession countries from Central and Eastern Europe (CEE) is associated with a declining share of agricultural employment. However, in contrast to the EU-15, agriculture remains an important source of income for many rural livelihoods, particularly in the poorer CEE countries. Thus, well functioning rural labour markets are important for both traditional agricultural economies and service-based economies.

[iii] Apart from higher aggregate rural household income due to non-farm employment, other utility maximizing drivers, some due to household characteristics play a role. Furthermore, the irreversible entry/shift costs (in the sense of sunk costs) into the non-farm labour market influence the probability of seeking non-farm employment.

[iv] Policies involving subsidies may be capitalized into fixed assets (e.g. land or capital investments), higher sunk costs and thus less land and farm consolidation. Obviously, subsidies attached to land can intensify competition for this scarce resource and make its supply curve inelastic. The income manifesting function of subsidies also manifest agricultural structures.

[v] Here, the sunk costs from labour and capital are to be mentioned before most. Especially older farmers may choose to remain in 'business' because of the quasi-fixed nature of their own labour. Especially in the NMS, a large number of the private farm owners are older; this seems to slow down structural change and, as simulation results indicate, can lead to suboptimal farm structures for decades. The question is, whether these older farmers would chose to exit farmers in the light of public safety nets? As for sunk costs due to capital investments, these arise when investment decisions can not be reversed without new costs, as is normally the case.

In CEE, however, rural labour markets often function imperfectly resulting in a sub-optimal allocation of labour. Consequently, the whole rural development is constrained. The addressing of these constraints with appropriate policy instruments requires profound knowledge about determinants of rural labour allocation and adjustments in the NMS.

In order to identify the key labour market impediments to rural development, it is important to understand the functioning of rural labour markets in the CEE transition economies. Two strands of literature may contribute to the understanding of how rural labour markets function in transition economies. First, the farm household models which study labour supply decisions of workers. Second, the industry equilibrium models where the job creation and destruction process determines the labour demand of firms. Given that the sources of labour market impediments to rural development in the CEE transition economies cannot be identified and located a priori, both labour demand and labour supply determinants need to be studied. The integration of both aspects into single analytical framework is demanding, both from the theoretical and empirical point of view. However, the general equilibrium approach is the only framework capturing the adjustments on both sides of labour markets in a consistent way. More precisely, a general labour market equilibrium model will allow to account for three important adjustment margins in the CEE transition economies: (i) inter-sectoral labour migration and labour market participation decision of workers capturing rural labour supply adjustments; (ii) the production decisions of firms capturing labour demand response to changes in macroeconomic environment and policy shocks; and (iii) the functioning of rural labour markets in terms of search costs for both employers and workers capturing rural labour market imperfections, the spatial and sectoral matching issues and transaction costs of rural labour markets. Specifying the conceptual framework along these guidelines will provide detailed insights about the functioning of rural labour markets in transition economies. These insights can be further used for identifying and addressing the labour market impediments to rural development, which is the main goal of the present study.

Livelihood is about the ways and means of making a living. The ways (strategies) of making a living depend on the means. These are summarized in the so-called capital asset pentagon (see Figure 4.1), or, as some call it, the livelihood platform. The capital assets normally mentioned for rural livelihoods are: physical capital, natural resources, financial capital, human capital and social capital. Often, rural livelihoods lack access to physical capital (because they do not have sufficient own financial or debt capital), natural resources in the form of land (because the sale and rental markets are inexistent or the prices are prohibitively high), and financial capital (often because they are poor and the formal financial market does not wish to serve farm/rural households). Small-scale farms are said to frequently lack managerial capability and education (human capital) to allocate their scarce other capital assets efficiently. What may, or may not be available in rural regions of transition countries is social capital in the form of social networks (formal or informal) that cooperate to the benefit of the network members. If social networks (informal or formal networks in the form of cooperation) function well, they can, to some extent, substitute for the lack of other capital assets.

The livelihood platform, together with the structures and institutions, results in a certain household behaviour and motivation. This is the basis for the livelihood strategies and consequent outcomes. Obviously, livelihoods are complex. This is particularly true for ***(semi-) subsistence households*** that may have no choice but consume at least part of their production for survival reasons. The reasons for the persistence of subsistence households in the NMS are still largely unknown. However, it seems to be clear that their persistence is one of the main reasons for the delay in structural adjustment as the

agricultural sector is concerned. Yet, without understanding the reasons for the persistence, it is not possible to design policies aiming at a greater market integration of the agricultural sector. Interestingly, there exists no consensus definition of either subsistence or semi-subsistence farming. Generally, a definition of subsistence farming may depart from three different criteria: economic size, physical measures and market participation. Two contrasting perceptions of (semi-) subsistence farming can be found: (1) it is backward, inefficient and synonymous to poverty, and (2) it stabilises fragile rural livelihoods and thus economies. While the household and farm characteristics of (semi-) subsistence livelihoods are relatively well studied, little is known about their motivation, objectives, and behaviour of subsistence farmers in transition economies and its role for rural livelihood welfare.

Diversified incomes are a main characteristic of farm households all over Europe. Presently, the share of non-farm income in total rural incomes in CEE countries varies from 15-68%. Often, the initial motivation of ***diversification into the rural non-farm sector*** is distress-driven. However, if the economic environment is favourable, non-farm employment could also pull well-educated labour force out of the farming sector and thus further farm exit rates and structural change. Successful rural development policies depend to a high degree on the rural non-farm sector: Only if the labour force that has to be released from the agricultural sector can be absorbed elsewhere will the farm structures reach viable sizes and will the productivity in agriculture increase. Therefore, labour markets (see above) and targeted policies on rural non-farm enterprises are needed.

Diversification and non-farm employment are an integral part of the rural livelihood strategies. Their underlying driving forces need to be understood as structural change and must be accompanied by growth in the rural non-farm sector. Despite its widely accepted importance, there is no commonly accepted theory on employment diversification. We therefore suggest using an integrated framework (Figure 6.3), which is embedded in the livelihood concept, but also has a behavioural theory component. Furthermore, cooperation (social capital in the form of networks) seems to play an important role in livelihood strategies, for instance employment diversification and thus structural change. Therefore, this potential driver of change is looked at in more detail.

Clearly, the paths for the ***evolution of farm structures in CEE*** were diverse and so are the resulting farm structures. One can find relatively large and efficient agricultural enterprises in the Czech Republic, subsistence-oriented farm households in north-east Bulgaria, highly specialised large family farms in the New German *Bundesländer*, and diversified small-scale family farms in Slovenia. Although this fact is nor often pointed out, it is evident that there existed a considerable heterogeneity among the CEE countries in terms of economic development status, land tenure and endowment, and contribution of agriculture to gross domestic product (GDP) and employment.

Our topical literature review suggests that the livelihood concept appears to be well suited for the analysis of multi-person farm households or more general rural livelihoods and their interaction with structural change in the rural economy, particularly agriculture. When considering livelihood strategies, it is important to recognize that people compete (for jobs, networks, natural resources, policy transfers, etc.), which makes it difficult for everyone to achieve simultaneous improvements.

Rural development policies should draw from both, empirical data of rural people in the NMS as well as information on earlier rural transition success stories in the established Member States. Even though the latter depend on specific historical, geographical and

sectoral contexts there is much to be learned for the NMS12. Based on country and region specific information appropriate policies for rural development can be deducted and outlined.

SCARLED Consortium

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LIST OF ABBREVIATIONS

ACF	Agreed Common Framework
AKI	Research Institute for Agricultural Economics
CAP	Common agricultural policy
CEE	Central and Eastern Europe
CGE	Computable general equilibrium
CIS	Commonwealth of Independent States
CRE	Centre for Rural Economy
CUB	Corvinus University Budapest, Dept. of Agricultural Economics and Rural Development
DFID	Department for International Development
DORA	Dynamics of Rural Areas
ESS	European Statistical System
ESU	Economic size unit
EU	European Union
Eurostat	[part of the] European Statistical System (ESS)
FADN	Farm Accountancy Data Network
FDI	Foreign direct investment
FSS	Eurostat Farm Structure Surveys
GAEC	Good agricultural and environmental conditions
GAO	Gross agricultural output
GDP	Gross domestic product
IAMO	Leibniz Institute of Agricultural Development in Central and Eastern Europe
IEEP	Institute for European Environmental Policy
K.U. Leuven	Catholic University Leuven
LFS	Labour Force Survey
LICOS	Centre for Institutions and Economic Performance
LUPG	Land Use Policy Group
NFRE	Non-farm rural employment
NMS	New Member States
NUTS	Nomenclature des Unités Territoriales Statistiques, i.e. Nomenclature of Territorial Units for Statistics
Phare	Poland and Hungary: Aid for Restructuring of the Economies
RDR	Rural Development
RUREMPLO	Agricultural and Employment in the Rural Regions of the EU
SAPARD	Special Accession Programme for Agriculture and Rural DSevelopment
SCARLED	Structural change in agriculture and rural livelihoods

SGM	Standard gross margin
SLF	Sustainable Livelihood Framework
SWOT	Strength, Weaknesses, Opportunities, Threats
U.S.	United States of America
UL	University of Ljubljana
UNEW	University of Newcastle upon Tyne, Centre for Rural Economy
UNIKENT	The University of Kent, Kent Business School
UNWE	University of National and World Economy
USAMVB	Banat's University of Agricultural Sciences and Veterinary Medicine Timisoara
WP	Workpackage
WUDES	Warsaw University, Dept. of Economic Sciences
WWF	World Wide Fund for Nature

1 INTRODUCTION

Gertrud Buchenrieder & Judith Möllers[1]

Since 2004, the European Union (EU) has undergone an unprecedented enlargement, reuniting the Western and Eastern parts of the continent. Subsequently, the share of rural areas grew to more than 90% of the EU territory and the share of those employed in agriculture grew to 6.2% in the EU27 (as compared to 4.9% in the EU25 or 3.7% in EU15 in 2005) (EU 2007).

The new Member States (NMS10[2]) in Central and Eastern Europe (CEE) have already undergone substantial sector restructuring and socio-economic transformation during the pre-accession phase (Rozelle and Swinnen 2004). Nevertheless, a great number of them still display a tremendous disparity in most structural and socio-economic indicators as compared to the EU15-average. For instance, the share of those employed in agriculture range from 4.8% in the Czech Republic to 42.7% in Romania. The EU15 employs, on average, about 4% of the workforce in the agricultural sector (Copus et al. 2006). In addition, the average farm size in the NMS10 (pre-2007) is approximately five hectares, and 27% of the land is cultivated by farms smaller than five hectares (Davidova 2005). Farming activities on this land are largely characterised by low productivity, implying a need for restructuring. About four million farmers would have to exit agriculture to reach only half of the average productivity in the agricultural sector of the EU15. Not least due to the dependence of a large part of the population on agriculture for income creation and the low productivity in agriculture, average per capita income in purchasing power parity (PPP for 2004) varies. It ranges from 30% for Bulgaria to 79% for Slovenia as compared to the EU15 with 109% and the EU25 with 100% (Eurostat 2005). This not only implies that (semi-)subsistence farming plays an important role in the provision of minimum livelihood standards but also that income disparities are on the rise within countries, particularly when comparing remoter rural areas with urban centres.

1.1 Problem statement

Obviously, the NMS of the EU display a higher share of people employed in agriculture and resident in rural areas. The rural economy does, however, not sufficiently support their livelihoods. Those living from (semi-)subsistence farming are especially prone to low productivity, low incomes and vulnerable livelihoods.

Therefore, it is important that significant structural changes in the labour force, farming structures, and the wider rural economy need to happen. If structural change does not take place, rural areas in the NMS will continue to lose resources and attractiveness for investment and population.

[1] The names are in alphabetical order.

[2] The NMS10 comprise the Central and Eastern European (CEE) New Member States (NMS) that acceded before 2007: the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovenia, and Slovakia. Together with Bulgaria and Romania that became NMS of the EU in January 2007 they make up the NMS12.

1.2 Objectives and Research Questions

SCARLED has two major research objectives: to analyse (1) the agricultural sector restructuring process and rural socio-economic transformation, including pluriactivity, in the NMS with a particular focus on five case countries (Bulgaria, Hungary, Poland, Romania, Slovenia) and (2) the patterns behind rural "success stories" in selected EU15 countries following previous enlargements to identify and codify best practices and to draw recommendations for the recent NMS.

More specifically, SCARLED will study the structural changes in agriculture by drawing together economic, social and demographic data. Particular attention will be paid to the recent evolution and likely future changes of farm structures and to (semi-) subsistence farming.

This research work will examine the following areas in more detail:

- the determinants of subsistence agriculture in order to understand the factors that influence entry to and exit from farm production, with particular attention paid to the barriers to commercial food production by small-scale farms;
- the role of co-operation (social networks) among rural households for maintaining an adequate livelihood. (This will be done in depth in Poland);
- the determinants of rural employment diversification (sectoral labour adjustment);
- the cross-country differences in rural labour adjustment patterns (regional and sectoral adjustment patterns) and the structure of the rural labour force in the NMS and EU15, by considering the determinants of rural adjustment patterns;
- the influence of previous accession processes in the EU15 on the adjustment and structure of the rural labour market, drawing relevant lessons for the NMS. This study of selected case study regions in the EU15 will help to understand the lessons of previous transitions and enlargement processes. From these case country studies, lessons of best practice regarding the preservation of the rural social fabric, appropriately managing farm restructuring, and/or changes in multifunctionality will be identified and codified for policy makers.

The Deliverable 2.1 (D2.1) provides the conceptual framework for analysing structural change in agriculture and rural livelihoods in the NMS and established Member States of the EU. It summarizes the underlying theories and concepts pertinent to the key research issues in SCARLED. The literature used in D2.1 is customized in Endnotes, a software system for managing bibliographies. Furthermore, subsequent outputs and new developments in SCARLED will be documented in its homepage: http://www.scarled.eu, which is regularly updated.

1.3 Structure of project and linkages between project workpackages

SCARLED is structured in a series of workpackages (WP), whereby some WPs need input from prior completed WPs (see Figure 1.1). Each WP receives input from more than one project partner (see Table 1.1). Thus, close co-operation is important between the various project partners within any single WP but also between WPs.

The implementation of the WPs will be overseen by the head of the project consortium (i.e. IAMO) in **WP1** and the Steering Committee. **WP2** will provide the conceptual framework for the research project and allow for scientific cooperation and outputs that go across WPs. The analysis of the social and farm restructuring processes and needs for a living countryside in the established and NMS is based on two broad WP blocks. The first

block on the NMS comprises **WP3** ('Socioeconomic, demographic and agricultural structures in the NMS'), a comprehensive stock-taking of secondary data and **WP5**, **6**, and **7** (framed by **WP4** ('Design and implementation of a survey instrument'), which assess, based on primary data from five NMS (these are Bulgaria, Hungary, Poland, Romania, and Slovenia), crucial aspects of farm restructuring processes in the context of social change. The second block thrives to deduce lessons and best practices from rural transition in selected EU15 regions (Austria, Ireland, new German *Bundesländer*, Spain, and Sweden). This block is built on two WPs (**WP8** and **9**). However, **WP3** also contributes to this research block as does **WP7**, since the labour market analysis in this WP also covers the EU15. The findings will be summarised in policy recommendations in **WP10**.

Figure 1.1 Graphical presentation of the workpackages in SCARLED

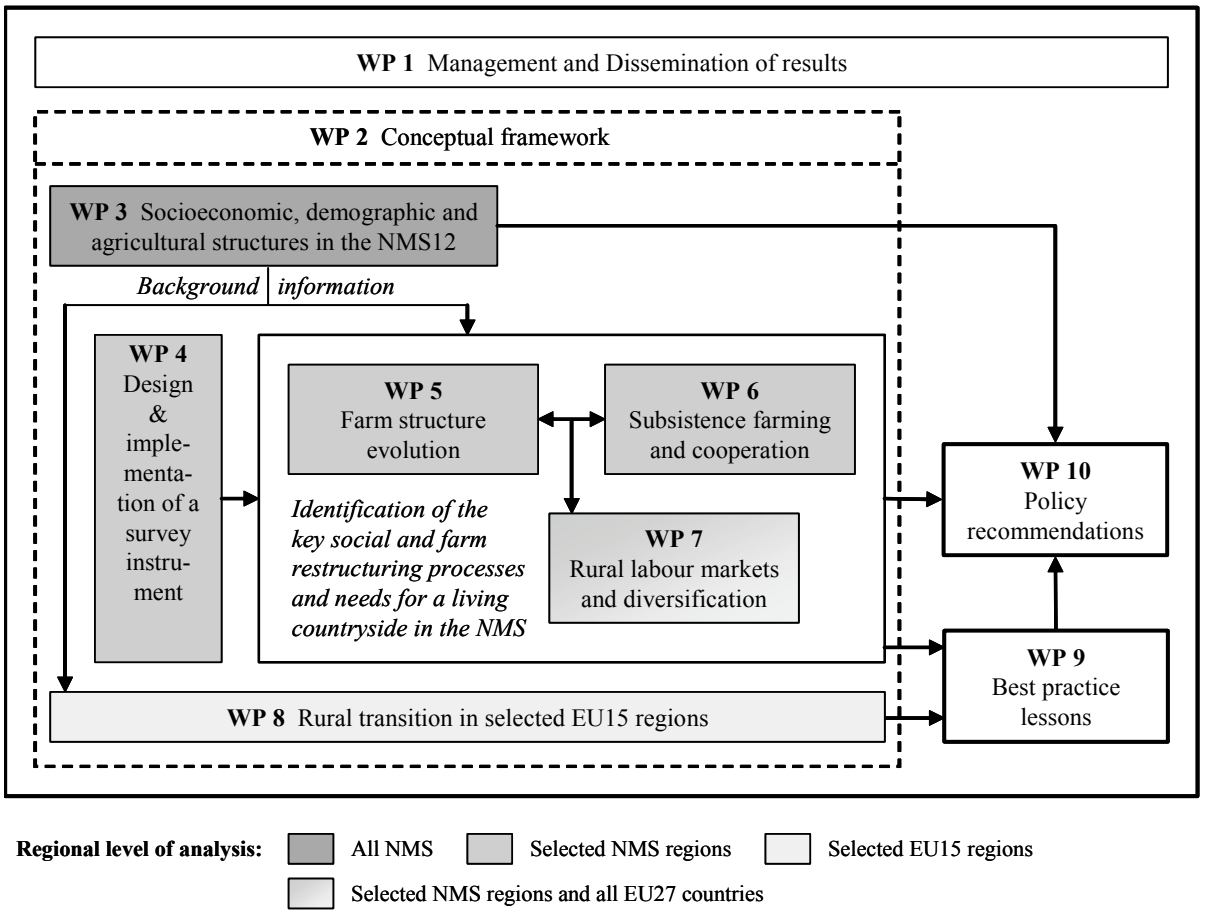


Table 1.1 Workpackages of SCARLED and responsible partners

Full WP title	Responsible WP partners	
	Main responsibility	Contributing responsibility
WP1-Management and dissemination of results	IAMO	K.U.Leuven; UNWE; CUB; AKI; WUDES; USAMVB; UL; UNIKENT; UNEW
WP2-Development of the conceptual framework	IAMO	K.U.Leuven; UNWE; WUDES; USAMVB; UL; UNIKENT; UNEW
WP3-Overview of socio-economic, demographic and agricultural structures in rural areas of the NM12 using regional NUTS3 data	IAMO	UNWE; AKI; WUDES; USAMVB; UL
WP4-Design and implementation of a survey instrument	UNIKENT	IAMO; UNWE; AKI; WUDES; USAMVB; UL
WP5-Farm structure evolution	UL	IAMO; AKI; WUDES
WP6-Socio-economic functions of subsistence farming and co-operation among farmers	UNIKENT	UNWE; WUDES
WP7-Rural labour markets and diversification of rural economies	K.U. Leuven	IAMO; USAMVB
WP8-Rural transition experiences in selected EU15 regions	UNEW	IAMO
WP9-Best practice lessons for rural transitions	UNEW	IAMO; UNWE; CUB; AKI; WUDES; USAMVB; UL
WP10-Policy recommendations	CUB	IAMO; K.U.Leuven; UNWE; WUDES; USAMVB; UL; UNIKENT; UNEW

Notes: IAMO = Leibniz Institute of Agricultural Development in Central and Eastern Europe
K.U. Leuven = Catholic University Leuven, Centre for Institutions and Economic Performance
UNWE = University of National and World Economy
CUB = Corvinus University Budapest, Dept. of Agricultural Economics and Rural Development
AKI = Research Institute for Agricultural Economics
WUDES = Warsaw University, Dept. Of Economic Services
USAMVB = Banat's University of Agricultural Sciences and Veterinary Medicine Timisoara
UL = University of Ljubljana
UNIKENT = the University of Kent, Kent Business School
UNEW = University of Newcastle upon Tyne, Centre for Rural Economy

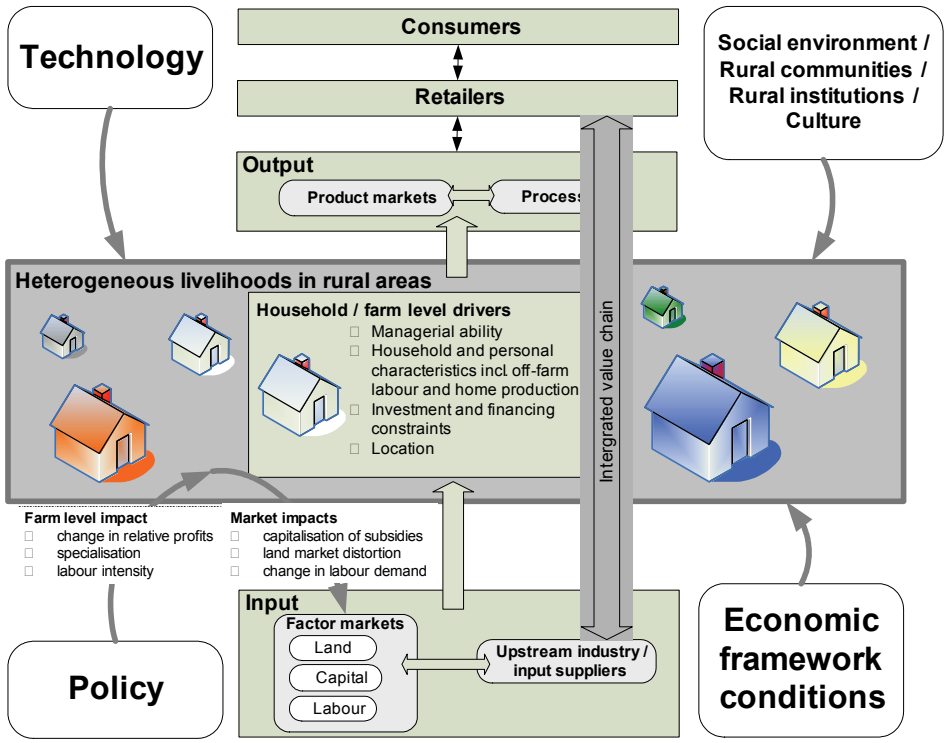
NUTS = Nomenclature des Unités Territoriales Statistiques, i.e. Nomenclature of Territorial Units for Statistics. NUTS0 = countries, NUTS1 = larger regions, NUTS2 = middle-sized regions, NUTS3 = smaller regions, local administrative unit (LAU1) = groups of municipalities, LAU2 = villages/municipalities.

2 STRUCTURAL CHANGE IN AGRICULTURE[3]

Kathrin Happe

This chapter reviews key concepts and factors that shape the structure of the agricultural sector and the dynamics through which it is changing. The chapter reviews factors and conditions that drive, but also inhibit, structural change. The drivers of structural change addressed in SCARLED are outlined in Figure 2.1.

Figure 2.1 The drivers of structural change addressed in SCARLED



Source: Own design

2.1 Theories and concepts of structural change

Several scholarly works provide an overview of concepts on structural change (Boehlje 1992, 1999; Chavas 2001; Harrington and Reinsel 1995; Mann 2003). Among them, there is a consensus that multiple mechanisms are at work. These are highly interlinked, such that structural change as a whole is a complex phenomenon. There is no single comprehensive theory of structural change which integrates driving factors and interactions between them

[3] This section reviews relevant literature for the work on WP5 and WP7 (see Figure 1.1).

in a consistent framework. Different scientific disciplines offer a variety of separate explanatory models of structural change. In economics, most traditional explanatory models take the neoclassical microeconomic paradigm as a benchmark. Hence, these models investigate the factor mobility between sectors, implying that production factors will move to where their remuneration is highest. The human capital, institutional, and sociological models follow different lines of argument. Many of the explanatory models are overlapping and not mutually exclusive. Each model's validity is limited. Nevertheless, together they provide an explanation of the complex mechanisms of structural change.

2.2 What is structural change?

Structural change touches upon all parts of a system, here the agricultural and rural socio-economic system. The structure of the agricultural sector is the result of ongoing changes of the economic, social, cultural, historical, political, technological, and geographical environment. In many parts in Europe, the pace of change seems to be increasing. The dimension of structural change can be looked at from different points of view. Traditionally, it is looked at from the point of view of farming operations. However, structural change is reflected also in terms of size (economic or physical), distribution, financial characteristics, ownership, technology, the characterisation of the workforce, or institutional arrangements including contracts or vertical integration (Boehlje 1999).

Since the 1980s, understanding of structural change has broadened. Agricultural structures increasingly encompass the entire sector as well as aspects of the wider rural economy. Hence, as the main stakeholders of structural change in agriculture farms are embedded within, and interact with, value chains, consumers, wider rural society and economies, institutions and policies (Balmann et al. 2006; Swinnen 2005). Overall, Boehlje (1999: 1028) describes recent developments in structural change as follows: "production is changing from an industry dominated by family-based, small-scale, relatively independent firms to one of larger firms that are more tightly aligned across the production and distribution value chain".

Although structural change is a given phenomenon, there is no agreement on how this change should be judged (Goddard et al. 1993). For example, structural change that increases efficiency, in terms of a better allocation of resources, is desirable from an economic point of view. Yet, others argue that it is the smaller household-based (family) farms which contribute to rural viability. Structural change has two important implications. First, the consequences of structural change are multidimensional. Second, there are critical distributional effects. There will be winners and losers and it is not always clear who will be on which side. Whatever the effects of structural change are and how they are to be judged, it is necessary to understand what drives changes, and how is it induced. Therefore, in the following five sub-sections the main driving factors of structural change in the agricultural sector are discussed. Clearly, the term sector includes not only the farms but also the firms proving agricultural inputs as well as the firms processing and marketing agricultural products. Therefore, while talking of 'farms' we always keep in mind these important parts of the agricultural sector too.

2.3 Growth and technology

Economic growth. For over half a century, authors have attributed change in the agricultural sector, to developments in other sectors of the economy or economic growth as a whole (e.g., Heady 1957; Schultz 1944; Tweeten 1984). According to this account, the uneven growth in different sectors of the economy produces structural change automatically. The change in the sectors' relative importance redefines the

complementarity between them. Aggregate growth rates arise from the dynamic interaction of sectors. Metcalfe et al. (2003: 2) argue also that "...it is the generation and resolution of economic diversity that is the principal source of growth.". Within this framework, productivity growth in agriculture and the accompanying shift in employment is an important source of economic growth (Gollin et al. 2002). A rise in the overall income level in an economy induces a number of changes in the agricultural sector. One is the already-mentioned re-allocation of resources – in particular labour – to other sectors. A second source is the shift of consumer demand to manufactured goods (Blandford 2006; Laitner 2000) and the way in which consumers purchase their goods (Goddard et al. 1993).

Economies of scale and size, and sunk costs. In essence, the concept of structural change circles around the relationship between farm size growth and economic efficiency. The economies of scale literature has focused on the shape and shift of the L-shaped long-run average cost curve, which is a major determinant of farm size (Kislev and Peterson 1982). If entry and exit is not restricted, farms operating at increasing returns to scale incur negative profits. This gives either an incentive to leave the agricultural sector or to expand the operation. Under decreasing returns to scale, farms generate positive profits, providing incentives for others to enter the sector. Thus, assuming perfect resource mobility (which is quite an assumption), equilibrium is reached only at constant returns to scale (Chavas 2001). Hence, growth in farm size is a consequence of economies of size.

Assuming this, Weiss (1999) and Kim (2005) find economies of size for smaller farms. In Upper Austria, there has been a polarisation in growth rates, whereby smaller farms grew in terms of livestock (large animal units) much faster towards a minimum efficient scale than larger farms (Weiss 1999). Kim et al. (2005) conclude that government programmes have slowed the loss of farms in the small size group. This result has been confirmed in simulation studies on structural change (Happe 2004). In an empirical study of US farms, Morrison et al. (2004) found that family farms, which are normally of smaller size are inefficient both in technical and scale terms. The authors attribute the scale economies of larger farms to output diversification and scope economies. Moreover, in an empirical study for a panel data set (1989-2002) of Flemish farms, van Passel et al. (2006) deduce that farms displaying technical efficiency in earlier years have higher growth rates in later years. For this case, they support the hypothesis that efficient farms grow in size while inefficient ones downsize.

The story appears to be more complex, though. For example, Balmann (1999) shows that sunk costs of labour and capital can inhibit the free mobility of factors, and reduce structural adjustment. With sunk costs, economies of scale can persistently remain unexploited. This provides one explanation for the slow growth in farm size despite increasing returns to scale. Moreover, with regard to transition countries and the developing world, opposite effects may arise as well. As reported by Chavas (2001: 267), in the absence of perfect resource mobility, institutional factors, such as power relationships or economic distortions determine farm size growth and persistence much more than economies of size. Moreover, non-monetary factors, such as "enjoying farm work", which can often be found among small-scale farms, are not valued. This, too, provides only one explanation for the persistence of many smaller-scale farms.

Adoption and diffusion of new technologies. Expansion in farm size, economic growth, and scale economies are closely linked to the adoption of new technologies. Technological change induces several effects relevant to structural change. First, over the past half century, technological change has had dramatic impact on the development of farming. Productivity growth and the substitution of labour with capital has been the predominant factor responsible for growth in agriculture (Ball 1985; Ball et al. 1997). The "induced

innovation" hypothesis states that technological change is a function of relative factor prices reflecting resource endowments in the sector. According to this, growth in farm size, and thus structural change is a function of the relative prices of labour and capital. As the relative price of labour increases with overall economic growth, opportunity costs of labour in agriculture rise. Accordingly, the increase in non-farm working opportunities with overall economic growth raised opportunity costs of farm labour and drew labour out of the agricultural sector (Barkley 1990). Hence, there has been an outflow of labour from agriculture to other sectors. Likewise, labour-using technology was replaced by capital-intensive, but labour-saving technology.

As different sizes of farms adopt new technologies of different kinds and at different rates, average costs vary between farms (Chavas 2001; Lu 1985). Inevitably, this increases the effect of economies of scale and fosters a dual farm structure. Moreover, with larger farm sizes, a switch towards a new technology is more likely to take place, such that decreasing returns do not appear. Despite its sometimes scale-neutral characteristics, new technologies are favoured by larger farms (Lu 1985). This is often attributed to the managerial ability of farm managers. Large farms are expected to benefit more from new innovations as they invest more in search efforts and discover new technologies quicker (Feder et al. 1985). Farmers must decide whether to adopt new technology or to continue with existing technology. In this regard, Huffman (1985) also argues that farmers with better managerial skills make the better decision. Moreover, the rising complexity of new technologies and the ways of using them calls for managerial skills to cost effectively use these technologies (Boehlje 1992). According to this, technological change results in new production practices adopted differently within the sector because of differences in costs of technology adoption, salvage values of existing technology, managerial ability and rewards of new technology. This suggests one explanation for persisting heterogeneity in size structure of firms.

2.4 Farm level factors and activities

Farm family characteristics. At the farm level, socio-economic characteristics of the farm household provide explanations for farm size changes, the development of part-time farms and farm exits. The age of the farm operator turns out to be of particular importance in determining farm exits as succession and retirement decisions are closely related to exit decisions (Breustedt and Glauben 2007; Weiss 1999). In Europe, farm exit is mostly voluntary. Yet, patterns and motivations for farm exit differ across the farm operator's lifespan. According to Breustedt and Glauben (2007) farm exit due to financial stress is more likely among farm operators in the early or middle phases of their life cycle. For younger, well-skilled farmers it is often easier to find jobs outside agriculture. With age it becomes increasingly difficult to find attractive off-farm employment. Hence, they continue farming until retirement. At a theoretical level, one can explain this by using the concept of sunk costs (Balmann et al. 1996) or quasi-fixed factors (Johnson 1956; Johnson and Quance 1972), which means that farmers do not have to fully consider the costs of their own labour input because these costs arise anyway. Using an agent-based simulation approach, Balmann (1999) shows that these sunk costs slow down structural change with the implication that suboptimal farm size structures can persist over decades. Moreover, Breustedt and Glauben (2007) report that the exit decision depends on the number of

family members working and living on the farm. It is more likely that a farm is passed on to the next generation if more family members are living and working on the farm.

Non-farm employment[4]**.** Non-farm employment is closely related to farm survival (Buchenrieder, Kirk, and Knerr 2004). Non-farm income can help offset the tendency towards fewer and larger farms as implied by the economies of size model, economic growth and technological change. Non-farm employment can generate additional income that can compensate for losses generated on the farm. In this way, farms can operate at sizes not consistent with minimum cost considerations. The general effect of non-farm income on the survival of farms is unclear, as reported by Breustedt and Glauben (2007). Some research suggests that part-time farming can increase the probability of farm exit in the future (Goetz and Debertin 2001; Pfeffer 1989; Weiss 1997). Others suggest that especially smaller farms survive because of non-farm income (Kimhi 2000; Kimhi and Bollmann 1999; Tweeten 1984). If farmers benefit from non-farm income sources, for the most part they do not suffer from poverty (Hill 2000; Poppe 2002). Moreover, many family farms have a considerable amount of equity capital, at least in Western Europe (Balmann et al. 2006). More recent evidence shows that the decision to work off-farm is often influenced by non-monetary considerations. For example, the structure of individual farm operator's decision to work off-farm depends on the spouse's decision. Lass and Gempesaw (1992) found that the spouse's characteristics were important in determining the operator's decision. In contrast, spousal decisions are correlated with household characteristics such as the age of children, farm sales, or education level. However, under unfavourable economic conditions during transition, it is often economic distress (i.e. insufficient farm incomes) that drives rural families to diversify and to open up non-farm income sources (Möllers 2006)

Managerial ability. The economic performance of farmers can differ substantially even if they operate under more or less the same production conditions using the same production technologies. These differences in the economic performance of farmers are often attributed to the personal characteristics the people operating and working on a farm. In particular, as mentioned above, it is attributed to differences in the managerial ability of farmers (Nuthall 2001; Rougoor et al. 1998). Farmers' abilities to adjust to a dynamically changing environment are considered vital for the development and survival within the sector. Adaptive ability is important whenever unanticipated components of variables entering a farmer's decision making are beyond expectation. Hence, with increasing dynamics and heterogeneity within a sector, adaptive abilities are assumed to gain importance (Huffman 1985). Boehlje (1992) relates managerial ability to farm size. Accordingly, investments in improving managerial skills to manage larger, more specialised operations. Because of the diversity of managerial skills and investments in human capital across farms, different structures of farms are likely to persist over time.

Investment and financing constraints. Farm adjustment processes by way of investments and disinvestments often influence structural change. To understand the dynamics of structural change, one needs to understand farmers' investment and disinvestment behaviour (Johnson and Quance 1972). Investments can be seen as changes in quasi-fix, or durable, assets. Conventionally, firms invest in additional durable assets if the expected marginal return to them exceeds their acquisition costs. If the expected marginal return of existing assets is between the acquisition costs and the salvage values, the quantity of

[4] The conceptual framework of employment diversification is extensively discussed in Chapter 6.

assets remains unchanged, or fixed. In this case, acquisition costs of existing assets are sunk. Sunk costs imply that an investment decision cannot be reversed without costs. Moreover, many investments imply uncertainty. Deterministic adjustment cost approaches investigate changes in durable assets (Abel and Eberly 1994; de Brauw et al. 2000; Luh and Stefanou 1991). The new investment theory, or real options approaches, takes specific characteristics of investment decisions, such as irreversibility, uncertainty, or the delay of investment decisions into account (Dixit and Pindyck 1994; Odening et al. 2005). According to the new investment theory, postponing a decision has a value. Consequently, the investment trigger is higher than the conventional net present value criterion.

Boehlje (1992), in his financial model of growth structural change, explains firm development in terms of financing and survival constraints. The financial constraint implies that in order to invest in durable and nondurable inputs, financial capital is required. A limit is imposed by the availability of debt and equity capital. Funding constraints can also be imposed by lenders, e.g. through collateral requirements. The survival constraint requires that firm must generate a sufficient cash flow at all times. Although these factors may influence many farms' ability to survive, Balmann et al. (2006) conclude that, on average, farm exits are not the result of financial stress or even farm bankruptcies. Rather, as pointed out already above, farm exit takes place voluntarily (Breustedt and Glauben 2007).

2.5 Industry structure and institutions

Structural change within the agricultural sector refers not only to the primary agricultural sector but extends to the entire supply or value chain including the up- and downstream. It concerns the ways of how to do business. In many developed countries and transition countries, the agricultural sector is changing from a sector dominated by independent, small-scale family-farms to a sector in which farms are closely aligned with across the production and value chain (Boehlje and Doering 2000). Moreover, consumer demands, quality and food safety are of major concern, such that food processors and retailers need to react. Vertically integrated production is an important dimension of structural change, particularly in livestock production. In the 1990s, transparency, and quality were the main drivers of vertically coordinated quality concepts. These have been replaced by efficiency concerns and barriers to entry as the main motivation for integration (Balmann et al. 2006; Boehlje 1992). Different approaches lend themselves to explaining structural change in agriculture (see overview by Boehlje 1992). Most importantly these are value chain analysis, transaction costs economics, principal-agent theory, strategic management and organisational learning, negotiation/power, trust and performance incentives.

2.6 Social networks and rural identity

Sociological models of structural change have their roots in the behaviour of individuals in a social context (family, community). Farmers' decision-making has multiple goals, as it includes social constraints in addition to economic objectives. Independence, quality of life, or social bonding are non-monetary goals which are valued in addition to monetary goals.[5] For example, Schneeberger et al. (2002) find that in Austria technological change is adopted later than theory would suggest. The authors explain this by tradition, the unwillingness to change established practices, and a loss of social status.

[5] Social networks are also referred to in Section 4.3.

Moreover, social ties within communities and perceptions of farm operations by non-farmers affect local farm structures. For example, the development of large scale hog and poultry operations in the U.S. has had significant impacts on the quality of life of neighbours (Jackson-Smith and Gillespie 2005). In their study of U.S. dairy farms, Jackson-Smith and Gillespie find that operators of larger farms tend to know their neighbours less and get more complaints from neighbours. On the opposite, they participate more actively in community organisations. However, this result may be valid only locally. In transition countries, large-scale corporate farms still have a significant pro-social behaviour. For large-scale farms in the Czech Republic Curtiss et al. (2006) find that the lower productivity of some of these farms was significantly influenced by the costs of their social functions.

2.7 Policies and structural change

Agricultural, economic and environmental policies are considered important factors driving or slowing structural change. There seems to be consensus that since their inception, many government income support policies have manifested agricultural structures and reduced the dynamics of the industry. However, Happe and Kellermann (2007) point out that the impact of policy measures depends strongly on the dynamics generated by other driving factors.

Concerning policies and past and future adjustment reactions, a regional differentiation is necessary as differences in adjustment paths are also due to historical conditions. As regards the regional extent of policies, Blandford and Hill (2006) give a current account of structural changes and policy impacts in Europe and the United States. The role of policies in the adjustment process in transition countries has been discussed in Swinnen (2006), as well as Rozelle and Swinnen (2004). Accordingly, differences in adjustment processes are due to differences in initial conditions and reform policies (Swinnen 2006).

The basic impacts of policies in the past decades relate to the following processes. Agricultural support policies have led to increasing production while encouraging the maintenance of marginal farms. For example, market price support leads to higher returns on some products, which transfer into higher input prices for production factors. High prices encourage the expansion of production beyond market demand and often the use of capital-intensive production methods (OECD 1994). Guaranteed prices have reduced uncertainties and therefore reduced the incentive for farms to diversify and spread production risk. Instead, farms (increasingly) specialised and intensified production to take advantage of other input subsidies such as investment programmes, and technological progress. Direct area and headage payments coupled to certain activities also created production incentives. Moreover, there is some evidence that marginal farmers use these payments to balance losses. This line of argumentation may be applicable to agricultural structures in Western countries, yet the dual farm structure in many Central and Eastern European Countries has different origins.

OECD (1994) and Fennell (1997) argue that these policies have also contributed to the growing differentiation between larger and smaller farms since the former have generally been better placed to take advantage of agricultural support. However, as pointed out by Harrington and Reimer (1995) using the example of U.S. and Canadian agriculture, tax policy regimes have appeared to skew the distribution of farms towards the low end of the scale. This argument can also be extended to European agriculture.

Certain policies (e.g. payments attached to land and production) intensify competition for scarce resources and particularly for land because land supply is inelastic. In the case of land, a significant share of future support payments is capitalised into farmland prices and

rental prices (e.g., Daugbjerg and Swinbank 2004; Goodwin et al. 2003; Lagerkvist 2005; OECD 2005; Roberts et al. 2003; Turvey et al. 1995; Weersink et al. 1999). High rental prices benefit land owners, but lead to lower profitability on the side of active farms. In regions with a high share of intensive livestock production, competition on the land market intensifies additionally because of land required for manure disposal and limits on livestock density per hectare.

In Europe, with the reform of the Common Agricultural Policy (CAP) in 2003 and accession of CEE countries to the EU, much research has been done to analyse the potential impact of decoupling direct payments, and accession, respectively. Studies have focussed on different facets of structural change, for example, the effect of decoupling direct payments on production responses and land allocation (e.g., Burfisher and Hopkins 2003; Happe 2004; Happe et al., accepted; Happe et al. 2006; Moro and Sckokai 1999; Young and Westcott 2000). Some authors put a special focus on risk and uncertainty (Hennessy 1998; Sckokai and Moro 2006). Other studies focus on the impact on land prices, the capitalization of payments and investments as well as on the degree of decoupling (e.g., OECD 2004; Swinbank and Tranter 2005). Sahrbacher et al. (2007), carry out simulation studies on the impact of decoupling and accession on structural change. Their studies show, that decoupling slows down structural change compared to a continuation of the Agenda 2000 policy measures. With decoupling part-time farms[6]* using mainly grassland tend to stay in agriculture by maintaining their land in good agricultural and environmental conditions (GAEC), which is less labour intensive than for example the fattening of beef cattle on grassland. Despite the slower structural change, farm incomes increase due to the flexibility of farmers in their production decisions, with the decoupling of payments.

[6] This refers to farms that earn at least 50% of their money off-farm.

3 RURAL LABOUR MARKETS IN TRANSITION[7]

d'Artis Kancs, Johan Swinnen and Liesbet Vranken

Well functioning rural labour markets are essential for the well-being of people living in rural areas, both for those employed in agriculture and not. They are a major factor in determining where people live, work and spend their income. Thus, in rural areas they determine people's incomes, their location, their opportunities and the well-being of people and rural development in general. In this chapter we identify how efficient re rural labour markets in the CEE transition economies.

3.1 Empirical evidence

It is generally acknowledged that the process of economic development is associated with a declining share of agriculture in total employment. For many years, the agricultural employment has been declining in European Union (European Commission 2007). In the past years, the decline of agricultural workforce has been stronger in the CEE accession countries than in the EU15. In the first transition decade the agricultural employment decreased particularly strong in the Baltics (see Figure 3.1). According to official employment data for CEE, during the first five years of transition there was an average reduction of agricultural labour of 35%. The strongest reductions occurred in Hungary (57%) and the Czech Republic (46%). A similar decline was recorded for Estonia, an early and radically reforming country, where agricultural labour intensity declined by 58% within the first five years of reform. In contrast, in the first ten transition years, agricultural employment increased in Romania and Slovenia, while only a modest decline was recorded for Bulgaria (Macours and Swinnen 2000; Rozelle and Swinnen 2004). In addition, the European Commission (2007) estimates that the agricultural workforce in the EU15 will decrease by around one-third in the next two decades.

Despite the declining agricultural employment share in the CEE transition economies, agriculture remains an important source of income for many rural households, particularly, in the poorest and least developed CEE regions. In more developed rural regions of CEE, rural employment involves new activities, such as environmentally friendly landscape management and production of energy from biomass, and therefore remains important for rural areas. Thus, well functioning rural labour markets are important for both traditional agricultural economies and service-based rural economies. For example, Gardner (2002) showed that the reduction of labour market imperfections in rural areas has significantly improved rural household income in the US. According to the World Bank (2007) estimates, similar conclusions might be drawn about rural household income in Europe. Thus, well functioning rural labour markets could contribute both to higher aggregate household income in rural areas and to a more optimal allocation of labour in the economy by reducing market transaction costs of hiring labour and by facilitating the farm surplus labour to find employment in other sectors.[8] Given the relatively high importance of rural economies in the new EU member states, well functioning rural labour markets is even more crucial for the income of rural households in the new CEE member states.

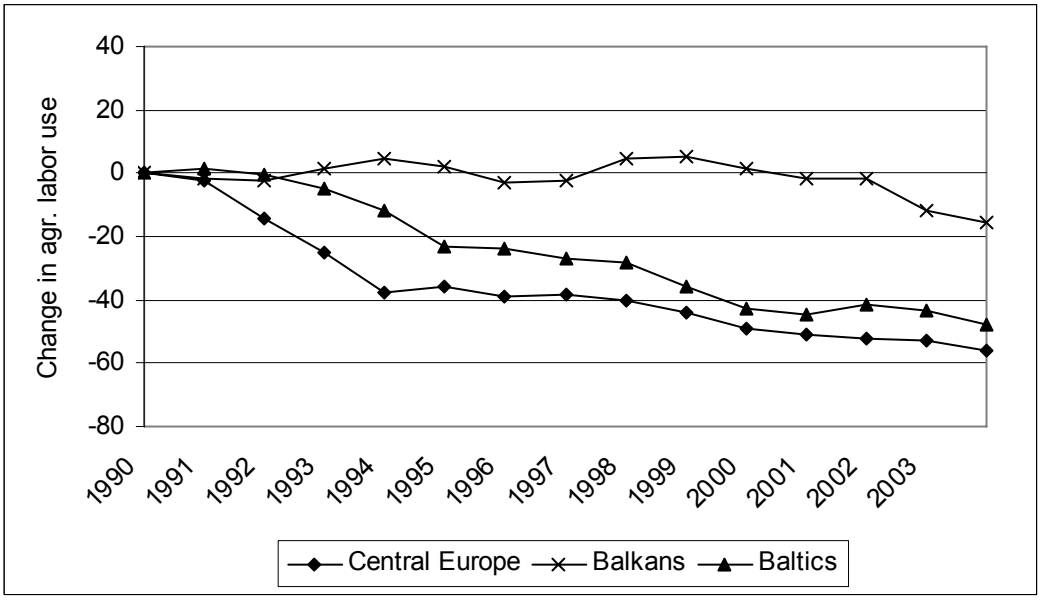
[7] This section is pertinent for WP7 'Labour markets and diversification' of SCARLED.

[8] See also Chapter 6 that deals with 'Diversification of employment'.

Currently, however, the rural labour markets often work imperfectly in CEE, which results in a sub-optimal allocation of labour, as well as lower income of workers and constrained rural development. In order to understand the functioning of rural labour markets in the CEE transition economies and to identify the impediments to development, it is important to analyse how the reallocation of agricultural labour is affected by the variety of factors.

Two strands of literature contribute to understanding the functioning of rural labour markets in transition economies. First, the farm household models which study labour supply decisions of workers. Application of these models in the CEE transition economies include, for example, Swinnen, Dries and Macours (2005) as well as Macours and Swinnen (2005). Second, the industry equilibrium models where the job creation and destruction process determines the labour demand of firms. Application of these models in the CEE transition economies include, for example, Konings and Lehmann (2002) and Konings and Faggio (2003). In the following we consider each of these aspects in turn, starting with rural labour supply.

Figure 3.1 Change in agricultural labour use since the start of the reforms in the European New Member States



Source: European Commission (2007)

Note: Central Europe: Czech Republic, Hungary, Poland, Slovakia; Baltics: Estonia, Latvia, Lithuania; Balkans: Bulgaria, Romania, Slovenia

Integrating these two strands of literature into one analytical framework is demanding but highly necessary in the context of the present study as it would allow us to account for three important adjustment margins in rural labour markets in the CEE transition economies: (i) inter-sectoral labour migration and labour market participation decisions of workers allowing us to study rural labour supply adjustments; (ii) the production decisions of firms allowing us to study labour demand response to changes in macroeconomic environment and policy chocks; and (iii) the functioning of rural labour markets in terms of search costs for both employers and workers allowing us to study spatial and sectoral matching issues in rural labour markets. Given that agricultural and rural development

policies may have important consequences on all three channels of adjustment, they all are relevant for studying rural labour markets in transition economies.

3.2 Labour supply

Modelling labour supply in rural areas touches on several conceptual issues: the choice of explanatory variables to be included; unitary versus collective approach of household labour supply; discrete choice versus continuous choice of work supplied, labour market participation versus non-participation. In this section we review each of these aspects in the context of the present study. We start with the behavioural assumptions about rural households which determine labour supply in equilibrium.

Unitary versus collective household models. Two methodologically different approaches can be applied for modelling rural household labour supply in the present study: unitary and collective household model of labour supply. The classical microeconomic development theory assumes that a household acts as a single decision maker. Within this tradition, household demand is assumed to result from maximising a unique utility function subject to a household budget constraint. In this framework Bojnec and Dries (2005) analyse inter-sectoral labour flows and determinants of labour flows from and to the agricultural sector using data from the Labour Force Survey (LFS) in Slovenia between 1993 and 1999. However, a growing body of empirical literature suggests that the unitary labour supply approach is inconsistent with the observed household behaviour (Vermeulen 2002, Blundell et al 2007). For example, the theoretical restrictions imposed by the unitary framework, such as homogeneity, symmetry and negativity have been rejected in numerous empirical studies (e.g. Fortin and Lacroix 1997). First, the assumption of income pooling, where the source of income does not matter for household behaviour, has been abandoned in several works (e.g. Vermeulen 2002). Second, the compensated substitution effects between household members are found to be asymmetric implying that the symmetry assumption does not hold in the data. Lastly, several recent studies have recognised that a lot of inequality may be hidden within households (see, for example, World Bank 2000). These limitations suggest that the classical unitary labour supply approach is unable to explain a number of empirical facts and might be critical for studying rural household labour supply in CEE.

Given that these issues cannot be addressed within a unitary setting by construction, a richer conceptual framework is required where individuals retain their identity within the household and were questions of individual response to changes in macroeconomic environment (e.g. the process of economic transition) or changes in policies (e.g. the CAP farm support scheme) can be addressed. Most of these issues can be tackled in the so-called collective approach to household behaviour (Chiappori 1988, 1992), which explicitly accounts for the fact that a multi-person household consist of several individuals with their own rational preferences and attitudes[9]. The decisions of a multi-person household are then Pareto efficient outcomes of a bargaining process between household members. Of course, the collective model of labour supply entails other behavioural restrictions, which are not present in the unitary framework. However, according to empirical studies of collective labour supply (e.g. Vermeulen 2002 and Blundell et al. 2007), these restrictions fit better the data than restrictions of the unitary approach. Given that in the present

[9] These observations also ask for a questionnaire that addresses not only the household head but covers other active household members as well (see Chapter 3 for details).

study we are interested in both, inter-household and intra-household labour supply decisions (e.g. we may want to analyse situations where the household head is staying in agriculture and other household members switch to non-farm employment), the collective approach seems to be more suitable for analysing rural labour markets in CEE.

Discrete versus continuous choice of labour supply. The next set of the labour supply side assumptions determining labour market outcome concerns the choice set of labour supply. There are two methodologically different approaches to model household labour supply decisions: on the one hand, we may assume that labour supply is a discrete choice variable. On the other hand, we may allow for continuous choices of the amount of supplied work. Obviously, modelling labour supply decisions as a continuous choice set has a richer structure and, in most cases, fit better to the data.

Yet, modelling labour supply decisions as a discrete choice set has several advantages in empirical implementation. First, and most importantly, discrete choice models are less data demanding than continuous choice models of labour supply. Second, reducing maximisation to choosing the optimal alternative among a discrete set of possibilities considerably simplifies the model and allows, rather easily, to account for non-convexities implied by fixed transaction costs of labour markets. As shown by Key, Sadoulet and de Janvry (2000), fixed labour market entry costs is an important factor in explaining agricultural labour supply decisions of workers. Third, they can simultaneously explain participation decisions and choice in work amount. Moreover, the discrete choice approach allows for a straightforward modelling of differentiated labour supply decisions of household members, which is required by the above discussed collective models of household labour supply. Finally, as recently shown by Bargain (2005), the discrete choice framework permits a very general representation of household preferences, it relies on an explicit parameterisation of worker choices. In light of these findings we may conclude that for the CEE transition economies, which are characterised by severe data limitations, significant labour market transaction costs and rather high labour market participation elasticities, the discrete choice approach to agricultural household labour supply seems to be more appropriate in the context of the present study.

Market participation. A further set of assumptions concerns market participation. In the canonical model of household labour supply, non-market time was considered as a pure leisure and work at home was ignored. As a result, a low level of market labour supply was automatically interpreted as a greater consumption of labour, whereas it may in fact represent specialisation in home production (Apps and Rees 1997, Grossbard-Schechtman 2000). Moreover, as shown by Singh, Squire and Strauss (1986) and Taylor and Adelman (2004), the impact of wages on domestic production is generally larger in agriculture as compared to manufacturing and service industries (Ashenfelter 1978).

More recent models of household labour supply (e.g. Bellemare and Barrett 2006) explicitly allow for both domestic and market labour supply. For example, Bellemare and Barrett (2006) assume that in addition to the market good there is also a domestic good, which can be produced within the household from a technology using time inputs. The domestically produced good can be consumed by the household or exchanged on the market at a price, which is exogenous to the household. According (Gronau 1986), home production is particularly significant for family farms. These findings suggest that it is important to include home production in the choice set of rural household labour supply. Given that labour market transaction costs are particularly high in transition economies, and are asymmetric between different households and sectors, the theoretical framework of the present study has to be able to account for home production of rural households.

Determinants of inter-sectoral labour location. If the rural economies are in equilibrium, then the inter-sectoral labour migration is negligible and it can be neglected in the model. However, the CEE transition economies are in a dynamic adjustment process involving sectoral re-specialisation and spatial relocation of industries. The transition and restructuring processes create incentives for workers to relocate their labour supply. Therefore, the conceptual framework of the present study should allow for the inter-sectoral relocation of workers.

Early models of inter-sectoral labour flows focusing on income maximisation objectives of households looked mainly at income differences between sectors (Todaro 1969). Despite their empirical success, meantime it is widely acknowledged that households make their migration decisions not only based on income maximisation but more generally on the maximisation of utility derived from both income and non-income benefits (Barkley 1990, Dries and Swinnen 2002). In order to account for non-economic factors driving workers relocation, more recent studies of inter-sectoral labour migration include in addition to economic benefits also non-economic factors associated with inter-sectoral employment change, such as social conditions and income risk, where worker migration into and out of agriculture is determined by the probability of finding employment in other sectors and the social benefits that the individual will receive when leaving agriculture (Barkley 1990, Lass and Gempesaw 1992). Furthermore, moving between jobs might induce transaction costs related to the search for other employment and to the physical reallocation, which also affects relocation decisions of workers (Key, Sadoulet and de Janvry 2000). All these factors themselves are determined by personal characteristics of potential migrants, such as human and social capital, education, experience and skills, age, education, as well as by regional variations in policies (such as unemployment benefits, pension regulations, health benefit regulations, etc), infrastructure, which in turn affect the labour market transaction costs, risk of relocation and relative benefits between source and destination employment (Sjaastad 1962; Earle 1998; Pfeffer 1989; Sorm and Terrel 2000; Bojnec and Dries 2005; Rizov and Swinnen 2004). According to Dries and Swinnen (2002), the non-economic factors driving workers inter-sectoral relocation decisions are magnified by transition process in CEE. These findings suggest that the theoretical framework of the present study should be able to account for both economic and non-economic determinants of employment change.

3.3 Labour demand

Next, we discuss the conceptual issues of studying labour demand in the CEE transition economies. Given that the demand for labour is a derived demand - a demand derived from that for the final product which labour cooperates to produce - it is determined by the production process of goods and services. According to Hamermesh (1991 and 1993), the amount of labour demanded by firms depends on three factors: (i) the technical nature of the production process as reflected in the production function; (ii) the revenue that results from selling the output of labour; and (iii) the relative prices of production factors. The technical nature of the production process determines labour intensity per firm/sector. Firm revenue in turn determines the size of firms/sector. Relative prices of production factors determine the specialisation of firms and, in combination with sector-specific factor intensities, the aggregate labour demand. We consider each of these aspects in turn, starting with the nature of the production process.

Production technology. The first set of the supply side assumptions determining labour market outcome concerns the technical nature of the production process. According to Nickell (1986), the production technology in general and the labour intensity specifically

are among the main factors determining the sectoral labour demand. Usually, the production process is represented by a production (cost, profit) function, which relates the inputs used in production to firm output. Two different types of production technologies can be used for studying labour demand issues: fixed input-output coefficients, where primary factors are not substitutable, and variable input-output coefficients, where primary factors are substitutable. Depending on the assumptions about input substitutability, the production technology, and hence labour demand per output unit, might be either exogenous to firms (former) or endogenous to firms (latter).

Endogenous input-output coefficients have the advantage that factor substitution possibilities provide an additional channel of adjustment to changes in economic environment. This might be important if policy shocks or changes in the macroeconomic environment have adverse impacts on production factors. For example, agricultural subsidies may create incentives for investment in new technologies. The new labour-saving technologies may in turn decrease the labour/capital input ratio and hence the demand for agricultural labour. Thus, agricultural and rural development policies may change the ratio of capital and labour input requirements, which in turn will change sectoral labour demand. In order to capture these substitution effects between primary factors, the theoretical framework of the present study should allow for flexible input-output coefficients.

Expected profits (firm revenue). The next set of the supply side assumptions determining labour market equilibrium concerns (expected) firm profits. Given a production technology, firm profits are determined by output prices relative to the production costs. In this section we consider the impact of output prices on labour demand. Given an exogenous demand for agricultural goods,[10] the output price and hence firm revenue depends solely on competition within the sector: as tighter is the competition, as lower is the market price and hence firm profit. Prices for primary factors are determined by factor supply, factor demand and factor market transaction costs.

With respect to market structure, two types of models can be used for studying rural markets in the CEE transition economies: models assuming perfect competition and models assuming imperfect market competition. The most widely used are models assuming pure competition plus perfect knowledge, perfect freedom of movement, and perfect substitutability of the factors of production (neo-classical assumptions). Models with perfect market competition are easier to implement empirically, they are less data and parameter demanding and usually they are solvable both numerically and analytically. However, according to Ciaian and Swinnen (2006 and 2007), factor markets in the CEE transition economies are far from being competitive. These findings suggest that the applicability of perfect competition models might be limited in transition economies.

The second strand of literature explicitly accounts for market imperfections. The examples of imperfect competition are models of monopoly, oligopoly, and monopolistic competition. In models with imperfect competition firms have some control, but not necessarily absolute control, over price, by differentiating products or limiting supply. As a result, firm profits are not necessarily zero (as under perfect competition). In combination with inter-sectorally mobile firms, higher profits in one activity compared to other

[10] This assumption can be justified by the negligible expenditure share for agricultural goods. Although, it would be straightforwardly to endogenise the demand for agricultural goods, this would add little insights into our study by unnecessary complicating the analysis.

activities will attract more firms. For example, asymmetric changes in the agricultural support policies might change the inter-sectoral ratios of output prices and hence expected profits in each activity. This, in turn, will induce firms to re-specialise from low profit to high profit activities. The entry of new firms, for example, the re-specialisation of agricultural farms, will in turn have an impact on firm profits in all sectors. Because of more firms in the destination sector, the product and factor market competition will increase and profits decline. The opposite will happen in the source sector. In light of these findings we may conclude that the theoretical framework of the present study should be able to account for rural market imperfections and for industry restructuring processes in CEE.

Factor market imperfections. In an economy with perfectly competitive factor markets and complete information, the employment level is determined solely by labour demand and labour supply. Analogously to goods markets, the equilibrium employment is the intersection of the aggregate labour supply and demand curves. In the CEE transition economies, however, differences in unemployment rate cannot alone account for inter-regional differences in employment. In the low employment rural regions, where the main duration of unemployment is about or above one year (World Bank 2007), market imperfections are important too. According to empirical evidence (Key, Sadoulet and de Janvry 2000, Rizov and Swinnen 2004), market imperfections and transactions costs often result in decreasing participation. Models without fixed labour hiring and job entry costs, in which the utility function explains participation as well as the amount of labour supply typically tend to under-predict the number of non-workers. The reason for this is that entry costs of working are seen as some gain to not working compared to all other possibilities, which makes not working more attractive than working few hours per week.

These findings suggest that market imperfections need to be included among explanatory variables explaining employment differences in rural regions of the CEE. Market imperfections can be modelled in the spirit of search models, as an irreversible entry/shift cost (sunk costs) paid by workers upon their entry into the labour market. We may assume that the information on the location and the availability of jobs is not perfect, and the process of information gathering is akin to paying an irreversible (sunk) cost. This derives a wedge between the entry into the labour market and exit from the market, so that labour force participation is determined by two margins: entry margin and exit margin. The entry and exit margins determine labour supply in the model and characterise labour market behaviour given the wage rate.

Heterogeneity of firms. Firms in general and, due to the diversity of natural resources, agricultural farms in particular are heterogeneous along several dimensions: size, productivity, specialisation, etc. According to Schmitt (1991) and Swinnen et al (2005), the structure of the farm organisation, such as the family farm, multi-household farming, collective farms, or other types of enterprises, play a major role in the labour demand decisions in agriculture. According to Swinnen et al (2005), family farms are relatively labour intensive compared to collective farms. As a result, family farms specialise on average more in labour intensive agricultural activities, such as horticulture, than collective farms, which produce relatively more capital intensive goods.

Given the high degree of farm heterogeneity in the CEE transition economies, it is essential to account for the organisation and structure of farms. In order to account for the fact that agricultural farms are extremely diverse in terms of organisation structure, size and productivity in the CEE transition economies, Rizov and Swinnen (2004) assume that agricultural farms are heterogeneous. This allows analysing the labour market dynamics and taking into account the bi-directional interaction between farm restructuring and rural

labour market adjustment in CEE. Allowing for firm heterogeneity will also ensure that our framework is consistent with the dual labour market theory, which emphasizes heterogeneity in market productivity.

Above we have outlined general methodological requirements as well as several CEE specific empirical requirements to the theoretical framework for the present study. Specifying the model along these guidelines, the conceptual framework will provide us with detailed insights about the functioning of rural labour markets in transition economies. First, the model will allow us to derive the number of employed persons in each sector, the unemployment rate and the non-participation rate. The sectoral employment is increasing in productivity whereas the non-participation rate is declining in market frictions and productivity. Second, labour flows between the three states: employment in each sector, unemployment and non-participation are determined endogenously. Finally, applying the developed conceptual framework, we will be able not only to explain the functioning of rural labour markets in the CEE transition economies but also to simulate agricultural and rural development policy impacts on rural employment.

4 CHANGE IN RURAL LIVELIHOODS[11]

Gertrud Buchenrieder

During the transition process in the 1990s, the tremendous institutional changes and breakdowns in the public and private sectors accelerated interest in issues relating to sustainable livelihoods because many of the formerly state-employed with anticipated regular pay and pensions after retirement – regardless of whether in the farm or industrial sector, rural or urban areas – had to seek their living now in newly privatised small-scale, semi-subsistence oriented farm structures.[12]

While semi-subsistence farming is crucial in many rural areas of the NMS of the EU to ensure a minimum standard of living (Petrovici and Gorton 2005; Pouliquen 2001), not just small farms earn little; this holds for the average of all farms due to their low productivity (Davidova et al. 2003; Macours and Swinnen 2000). Consequently, rural poverty in the NMS reached unprecedented levels[13]; this includes higher income disparities (see Table 4.1) (EC 2004; Baum and Weingarten 2005). Poverty and increased vulnerability of livelihoods normally go hand-in-hand. The key issue is 'vulnerability to poverty', which has two dimensions.

Vulnerable farm-households, such as semi-subsistence households in CEE are characterised by the potential for well-being to change in a negative direction or by no change within an existing negative status that is remain in poverty (Conway and Turk 2001). In short, vulnerability can be defined as a household's sensitivity (reduced resilience), which currently non-poor will fall below the poverty line or if a household is currently poor will remain in poverty (Chaudhuri, Jalan, and Suryahadi 2002; Dercon 2002). While poverty is a rather static concept, vulnerability is dynamic. Vulnerability is used as the magnitude of the *threat* of poverty, measured ex-ante, before the veil of uncertainty has been lifted. This can be compared to poverty, which is the magnitude of low welfare outcomes, as observed without uncertainty and whereby low welfare is defined as outcome levels below some accepted poverty line (Calvo and Dercon 2005). Thus, vulnerability as the probability that a household would find itself consumption poor in the future bears a strong testimony to the effect that it is a forward-looking measure of household welfare.

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[11] This section contributes to the methodological and conceptual basis for WP5, WP6 and WP7 (see Figure 1.1).

[12] In academic research and in policy discussions, the term semi-subsistence farming is mostly associated with inefficient production and low levels of technology and commercialisation. Thus, it might surprise that semi-subsistence farming in CEE is not a short or medium-term phenomenon of the transition from a centrally-planned towards a market economy. As the experiences of the last one and a half decades have shown, its importance has even grown during transition. It seems that semi-subsistence farm households of less than five hectares have become a persistent and economically non-negligible phenomenon. They make up the majority (82% out of a total of 9.2 million) of farms in the NMS of the EU and, according to Pouliquen (2001), contribute at least 50% to the total agricultural production. Nevertheless, the majority of them cannot provide sufficient income for an adequate level of livelihood for the farm household (EC 2004). See also Section 5 'Socioeconomic functions of semi-subsistence farming' for more details on this issue.

[13] Between 1988 and 1998, absolute poverty in CEE und Central Asia increased from 2 to 21% (World Bank 2000).

At present, despite the fact that semi-subsistence farms represent the majority of farms in the NMS, not much is known about the motivation, objectives and behaviour of semi-subsistence farmers (Kostov and Lingard 2004). This makes policy design difficult as semi-subsistence farmers seem not to be very responsive to market and policy signals that would normally lead to farm exit or expansion (Mathijs and Noev 2002, Kostov and Lingard 2004). Therefore, livelihoods that are based on semi-subsistence farming ought to be approached by a rather comprehensive analytical approach rather than a specialised household or sectoral approach. Based on this observation, the analytical approach suggested and discussed here is the livelihoods concept. The livelihood concept is very useful for examining and documenting the many different ways through which people 'make a living' and improve their living conditions.

Table 4.1 Poverty and income inequality in the NMS

	CZ	EE	HU	LV	LT	PL	SK	SI	BG	RO
Poverty share	0.8	19.3	15.4	34.8	22.5	18.4	8.6	0.7	18.2	44.5
Rural poverty risk index	1.1	…	1.5	1.4	1.8	1.6	…	…	1.3	1.4
Gini 1989	19.8	29.9	23.3	27.4	27.8	20.5	18.3	21.9	20.7	15.6
Gini 2002	27.3	36.6	26.7	35.8	39.0	35.3	26.7	30.7	49.3	39.1

Source: WIDER (2006), World Bank (2000)

Note: BG=Bulgaria, CZ=Czech Republic, EE=Estonia, HU=Hungary, LV=Latvia, LT=Lithuania, PL=Poland, RO=Romania, SK=Slovakia, SI=Slovenia

The share of the absolute poor is based on a headcount index, whereby US$4.30/day is the threshold. The relative poverty risk index of rural areas is greater than 1, implying that the incidence of poverty among rural households is greater than among urban ones.

The Gini coefficient is a number between zero and 100 % and is a measure of inequality. If incomes are evenly distributed among the population, the Gini coefficient is near zero.

4.1 The concept of livelihoods

Livelihood concepts aim to offer a rounded, bottom up perspective, reflecting a reaction against a narrow emphasis on one-off, income measures of economic status, and seek to give a more holistic, people-centred approach. They recognise that household livelihoods, especially farm households are often diverse, combining various activities of various members, with multiple priorities, strategies, and therefore outcomes. They seek to overcome the compartmentalisation of people's lives according to the arbitrary sectoral divisions of government departments, national or European policies: urban/rural, formal/informal, education/health/industry/agriculture. They also aim to move beyond single 'snap-shot' views of poverty or well-being, recognising seasonality changes with the turning year, as well as longer term cycles and shifts in vulnerability. Through the concepts of 'vulnerability, (Chambers 1989) 'sensitivity' and 'resilience' (Bayliss-Smith 1991) they also seek to capture the hazards that (rural farm) households face and the shocks that these engender, and their capacities to respond to them. In aspiration at least, such approaches seek, rather than abstracting particulars from their context, to show how the system works in context: how the whole gives character to the parts through the inter-relation of the social and economic, the human and environmental, people's action and the policy and political context (White and Ellison 2006). The livelihood strategy concept appears thus

well suited for the analysis of semi-subsistence farms or more general of structural change in rural livelihoods of the NMS in the EU-27.

4.2 Sustainable livelihood concept and definitions

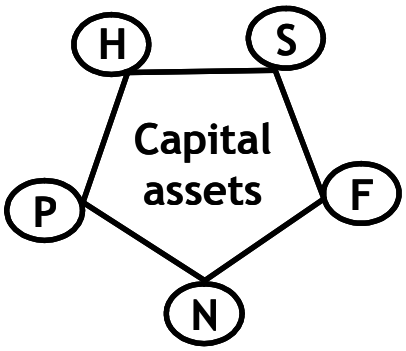
The definition of 'livelihood' has been extensively discussed among academics and policy makers (see for instance Carney 1998; Chambers and Conway 1992; Ellis 1998; Francis 2000; Radoki 2002). In its simplest sense, livelihood is about the ways and means of 'making a living'. The most widely accepted definition stems from Chambers and Conway (1992: 7-8): "a livelihood comprises the capabilities, assets and activities required for a means of living". Capabilities in this definition refer to the set of alternative beings and doings that an individual can attain with her/his economic, social and personal characteristics (Drèze and Sen 1989). Ellis (2000) in his definition of livelihood places more emphasis on the access to assets and activities. According to Ellis (2000: 10), a livelihood comprises five capital assets (i.e. natural, physical, human, financial and social, also known as the 'asset pentagon'). They can be used in the livelihood activities. Thus, the access to them (mediated by institutions and social relations) determine the living gained by the individual or household (Barrett 1999). They also influence access to the socio-economic structures of society at large and their formal and informal institutions. Rewald (2002) introduces culture into the definition of livelihood. He states that livelihood refers to the adequate and sustainable access to income and resources to meet basic needs in a cultural context. According to Chambers and Conway (1992: 7-8), a livelihood is "sustainable when it can cope with and recover from stresses and shocks[14] and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base". The anthropologist Wallmann (1984) pointed out that livelihood is also a matter of ownership and circulation of information, the management of social relationships, the affirmation of personal significance and group identity, and the interrelation of these aspects.

Thus, the sustainable livelihood framework (SLF) can be used as an analytical tool to identify and assess internal and external factors to the household that affect its socio-economic survival .The SLF seeks to reflect the activities and choices of possibly vulnerable households[15] by depicting the 'capital asset pentagon' (Figure 4.1) in a broader socio-economic context.

[14] Vulnerability is the product of risk but also the product of individuals' (households') socio-economic status, surrounding environment, and the insufficient strategies to address risks (Dercon 2002). Risk relates to the events (shocks) possibly occurring, beyond the direct control of individuals and households.

[15] Vulnerable livelihoods often have developed sophisticated *(ex-ante)* risk-management and *(ex-post)* risk-coping strategies. They may adopt production plans or employment strategies to reduce their exposure to the risk of adverse income shocks *(ex-ante),* even if this entails lower average income. In addition to such efforts to smooth income, they may try to smooth consumption *(ex-post)* by selling capital assets, reducing consumption, even sometimes selling daughters into prostitution.

Figure 4.1 Capital asset pentagon of the SLF



Source: Chambers and Conway (1992)

Notes:
- S Social capital, i.e. relationships
- F Financial capital
- N Natural resources, i.e., land and water
- P Physical capital, including technical innovations
- H Human capital, i.e. labour, skills and education

The capital asset pentagon can be interpreted as a so-called 'web diagram'. The larger the area that the pentagon occupies, the stronger and more resilient the livelihood it represents (Carney 1998). Thus it can be used to show, although static by nature, that the configuration of capital assets is locally specific, varies between regions and, also between households.

The asset pentagon (Figure 4.1) in is embedded in additional impacting factors (see Figure 6.3), such as the 'vulnerability context', 'structures and institutions', 'intention and behaviour', and 'outcomes' (see Section 6).[16] Structures and institutions are of central importance as they operate at all levels and effectively determine access, terms of exchange between different types of capital assets, and returns to any given livelihood strategy (Shankland 2000; Keeley 2001). *Structures* can be described as the "hardware" (private and public organisations) that sets and implements policy and legislation, deliver services, purchase, trade and perform all manner of other functions that affect livelihoods (DFID 2000). *Processes* constitute the "software" determining the way in which structures and individuals operate and interact. The possible transformation of structures and processes occupies a central position in the SLF. Changing them directly affects the vulnerability context. They influence and determine ecological or economical trends through political structures and policy measures, mitigate or enforce effects of shocks through working market structures (notably insurance markets), or they can restrict people's choices of livelihood strategies (e.g. caste system). Livelihood outcomes result from livelihood strategies. Desirable outcomes are more income or smoother a cash flow, increased well-being (e.g. in form of non material goods, health status, access to services), reduced vulnerability (e.g. better resilience through increase in asset status), improved food security (e.g. increase in financial capital in order to buy food) and a more sustainable use of natural resources (e.g. appropriate property rights). The consideration of outcomes within the SLF helps to understand what motivates stakeholders to act as they do and what their priorities are and give an idea of how people are likely to respond to new opportunities or constraints. Changing livelihood outcomes directly influences the status of the capital assets and subsequently their interaction with the rest of the SLF.

[16] The 'vulnerability context' refers to abrupt changes in the natural resources stocks, population trends, technology, politics, and economics as well as shocks with regard to climate, conflict, and culture. The 'structures' comprise levels of the private and public sector, and 'institutions' refer to the rules of the game in politics, economics, and social life (Carney 1998). 'Intentions and behaviour' refers to the behavioural model developed by Ajzen (2002). Möllers (2006) was first in introducing behavioural issues in a theoretical explicit way in the SLF.

By setting the asset pentagon (Figure 4.1) within the broader SLF, the additional factors that impact on livelihoods and the flows of influence between them are made transparent (Sanderson 1999). At the same time, it relieves the asset pentagon of much work as it becomes clear that the variability of the asset pentagon derives also from these other factors. The disadvantage, of course, is that this introduces a whole further set of variables which again need more investigation (White and Ellison 2006). Nevertheless, it corresponds to the recommendation of Barrett et al. (2001) stating that studies focusing on livelihoods should use a diversity of indicators to assess sources of income and livelihood strategies.

Thus, livelihood is an umbrella concept, which suggests that economic, social and cultural life is layered and these layers overlap. One common aspect in all definitions is that they eloquently underline the general accepted idea that livelihoods deals with people, their assets and the subsequent strategies to come to certain outcomes. It has moved away analysis from a narrow view of production, employment and income to a much more holistic view, which embraces political, socio-cultural, and economic dimensions. This concept also stresses the importance of reducing vulnerability, enhancing environmental sustainability, and building on local strengths and priorities. It recognizes that rural people are active agents of change and pursue a range of livelihood strategies (Parrott, Hebinck, and Westendorp 2006). Nevertheless, when considering livelihood strategies, it is important to recognise that people compete (for jobs, natural resources, etc.), which makes it difficult for everyone to achieve simultaneous improvements in their livelihoods. The (semi-) subsistence farmers (or the poor in general) are themselves a very heterogeneous group, placing different priorities in a finite and therefore disputed environment. An application of the SLF offers the advantage to be sensitive for such issues in a differentiated manner. For the working definition of livelihood strategies see Box 4.1 below.

Box 4.1 Working definition of livelihood strategy

A livelihood strategy can be defined as a portfolio of activities and choices that people make to achieve their livelihood outcomes, including productive activities, investment strategies, reproductive choices, etc. These activities and choices are reflected in the way that people use their capital assets and as such are an important part of (farm/semi-subsistence) household behaviour. The decision making process underlying livelihood strategies, is sometimes regular and seasonal, and sometimes occasional and unexpected. It can be reactive (when coping with periods of crises ex-post) or structuralist and adaptive (when adapting to the changing environment in an ex-ante way).

Source: Jansen et al. (2006), reflecting also DFID (2000), Chambers and Conway (1992), and Soussan et al. (2000)

4.3 Capital assets versus resources

Livelihood strategies (i.e., the sum of all different activities that people do in the context of their livelihood) are based on the access to and combination of the above mentioned

five forms of capital assets: social capital, financial capital, natural resources, physical and human capital. These are described in more detail below:

(1) *Human capital (H)* represents the skills, knowledge, ability to work and good health that together enable people to pursue different livelihood strategies and achieve livelihood objectives (DFID 2000). Without human capital, people are unable to effectively use the other four types of capital.

(2) *Natural capital (N)* is the term used for the natural resource stocks (such as land, water, forests, air quality, erosion protection, biodiversity degree and rate of change, etc.). Within the framework a particularly close relationship exists between natural capital and the vulnerability context and many of the devastating shocks for the livelihoods are natural processes that destroy natural capital (e.g. fires, floods, earthquakes).

(3) *Physical capital (P)* comprises the basic infrastructure and producer goods needed to support livelihoods, such as affordable transport, secure shelter and buildings, adequate water supply and sanitation, clean, affordable energy and access to information.

(4) *Social capital (S)* refers to relationships, respectively social network upon which people draw. Social capital increases people's ability to cooperate in more formalised groups and their systems of rules, norms and sanctions.

(5) *Financial capital (F)* denotes the financial resources that people use to achieve their livelihood objectives and comprises the availability of cash or equivalent that enables people to adopt different livelihood strategies. Two main sources of financial capital can be identified: *Available stocks* comprising cash, bank deposits or liquid assets such as livestock and jewellery, etc. *Regular inflows of money* comprising labour income, pensions, or other transfers from the state, and remittances, which depend on others and need to be reliable.

They are depicted in the so-called 'capital asset pentagon' (Figure 4.1), which is central to the SLF as postulated by the Department for International Development (DIFD) of the United Kingdom (Chambers and Conway 1992; DFID 2000).[17] Sometimes this specific configuration of capital assets is also called the 'livelihood platform' (Ellis 2000).

Until the 1950s, just land, labour, and financial capital (i.e., levels of investment) were seen as being relevant for individual livelihoods and subsequent economic growth. Then technology (physical capital) was added to the list. In the early 1960s, convincing empirical evidence showed that labour without know-how and entrepreneurial skills (human capital) limit the potential of the other production factors. Today, labour and skills are usually simultaneously addressed when talking of human capital. The field of development economics, and more recently main-stream and transition economics added social capital as an important capital asset for the welfare of individuals and communities in that social

[17] Clearly, equating ‘assets’ theoretically with varieties of ‘capital’ through the ‘asset pentagon’ in Figure 4.1, distorts the understanding (1) of capital and (2) of poverty. On the first point, capital is properly a social relation between people, not an attribute of rich and poor, respectively. On the second point, attention is displaced from the inequalities of power that must surely be invoked to explain the persistence or the worsening of poverty (Murray 2001).

capital, or relations are important in accessing resources. It is also important to note that human capital resides in individuals and social capital in relationships (Woolcock 2001). As literate and informed people are better able to organize, evaluate and transform information, human and social capital assets are complements.[18]

Using the capital asset pentagon, such as the one above, to represent people's resources base can however misleading.[19] First, it is a static figure. As Wood (2005) points out, the term 'capital' implies a fixed rather than variable value. Capital assets, respectively resources are, however, in a constant flux. For example, human capital or social capital levels change over time. The natural environment is constantly changing through, for instance, the ways that farmers work the land. Pentagons are constantly changing and that can best be visualized by adding a third dimension, that of time, to the figure. In practice, however, this is hard to do.

Second, it is difficult to define and quantify the capital assets in the same terms and on the same scale. Often, the representation of a household's (or an individual's) social capital is qualitative. This does not, of course, rule out the quantification of the capital assets. The simple capital asset pentagon does not tell anything about the relationships between the capital assets and whether having a high level of one capital asset may compensate for low levels of another or substitute other capital assets. Nevertheless, the potential of compensating the lack of one capital asset, for instance financial capital, with the existence of another, for instance social capital, is seen as important for maintaining a sustainable livelihood.

Thirdly, it is questionable whether dividing up household capital assets according to various categories does tell us anything new, or simply re-describe tangible and observable features in rather abstract and alienated ways? Is the importance of social and cultural dynamics sufficiently considered? Clearly it is important to investigate further the notion of capital assets, but particularly to explore the social and cultural processes through which they are constituted and deployed (see e.g. Molyneux 2002).

Fourthly, Jansen et al. (2006) suggest quantifying the capital assets of households by concentrating on the use of their two primary assets. For instance, labour and land would be certainly crucial capital assets for (semi-) subsistence farmers. Nevertheless, while farmers would certainly often claim that labour and land are important, many would also claim that financial capital is of outmost importance for restructuring small-scale farms. Yet, clustering a sample of households into a limited number of categories that pursue similar livelihood strategies may be useful to policy makers to better target policy measures towards households with common characteristics.

Fifthly, the notion of capital (assets or capital assets) is problematic in that it lends itself to a sometimes overly economic interpretation. The notion of capital is an economic metaphor that may not do sufficient justice to the nature of people's livelihood strategies. It implies that capital assets can be simply understood as commodities that can be accessed, purchased, sold off, lent or used as collateral. Nevertheless, livelihood strategies are not always defined in economic terms. The five capital assets are therefore best thought of as 'livelihood building blocks'. (Some prefer the term 'resources').

[18] See Buchenrieder and Dufhues (2006) for an overview of social capital and its potential economic effects.

[19] The following paragraphs rely on Parrott, Hebinck, and Westendorp (2006) as well as White and Ellison (2006).

However, the term 'capital assets' has become a common denomination in the literature. Nevertheless, as White and Ellison (2006) point out, the choice to talk of 'resources' would point to an active relationship between householders, the material and other assets to which they have access, and the strategies which they use to deploy them. It aims to prioritise the social and see this as the context for the economic, rather than the other way around.

4.4 Origins of the sustainable livelihoods approach

The livelihoods perspective on rural change and development can be viewed as a critical response to the conceptualization of development as a process that can be managed from above and one that hinges on interventions and the transfer of resources. The 'modernization paradigm' was also criticized for its structuralist and prescriptive nature, ignoring the local people's knowledge and experiences. This view was dominant until the late 1980s.[20] Within this modernization paradigm, the development of the agricultural sector was central, as farming was seen as the main income source for rural livelihoods. Thus, the all too often not so successful transfer of more and improved production technologies and the provision of cheap production credit were main development instruments. While farming is certainly an important income source for rural livelihoods, rural areas contain a wide range of economic activities (see for instance 6 'Diversification on employment').

It is only in the last two decades that a new paradigm of rural development emerged, one that takes a broader view on the rural economy, making sure that the rural people participate in the decision making process and only in the last decade development policies take a fresh look at economic activities other than farming. The LEADER[21] initiative of the EU gives evidence to this change in development paradigm. Among commentators this change in paradigm is often referred to as 'diversification of the rural economy' or the 'bottom-up' approach to rural development.

4.5 What is the added value of a sustainable livelihoods approach?

Adopting the conceptual approach of livelihoods in researching vulnerable population groups such as (semi-)subsistence farmers has manifold analytical advantages. It changes the definition of 'the problem'. The shift is from sectors to people, which results in deeper insights. Secondly, a livelihoods perspective provides insights into capital asset structures, not just purely economic assets, and their management and potential substitution effects

[20] Interestingly, the Marxist development theories were undergoing similar criticism as the modernization theory (Long 2001). Both theories expected that subsistence and small-scale farming would gradually disappear (albeit for different reasons) and would be replaced by large-scale, intensive farming. Yet contemporary farming is still characterized by the co-existence of small- and large-scale agricultural production. In other words, heterogeneity, rather than homogeneity is the dominant feature of rural economies (Parrott, Hebinck, and Westendorp 2006).

[21] LEADER stands for 'Links between actions of rural development'. As its name suggests, it is a method of mobilizing and delivering rural development in local rural communities and delivering rural development in local rural communities. LEADER was initiated by the EU in 1991 as a special program for rural development. For the period 2007-2013, LEADER will no longer be a separate program but will be integrated ('mainstreamed') in all national/regional rural development programs.

at the household level. The flexible design of the livelihoods approach and its openness to changes makes it adaptable to diverse local settings. Finally, a livelihoods approach influences the range of policy recommendations considered, as the areas of analysis are more comprehensive.

Clearly, the livelihoods approach is adaptable to many settings. Nevertheless, it does not represent a magic analytical tool nor is it a complete new idea. Because of its encompassing nature, the major disadvantage of the livelihoods approach in scientific analysis is its enormous pressure on finance and time. Obviously, the proper application of the livelihoods approach to research inevitably delivers a flood of information hardly possible to cope with. The decision about what to consider with priority leads us to a normative dilemma. Further problems may arise with the analysis of the livelihood capital assets, as for example the difficulties to measure and to compare certain types of capital, notably social capital. Additionally, the asset status of a person is highly associated with the amount of dependence from a certain resource, varying according to the local context, as for instance some actors might be able to satisfy their needs with a low level of financial capital, whereas others with more financial capital show by far less ability to do so (NCCR 2002).

5 SOCIOECONOMIC FUNCTIONS OF (SEMI-)SUBSISTENCE FARMING AND COOPERATION AMONG FARMERS[22]

Sophia Davidova and Lena Fredriksson

The farm structure in the NMS of CEE today is characterised by a large number of small-scale farms and a small number of large farms. Middle-sized market oriented farms are still less developed in comparison to the EU15. Many of the small-scale farms are (semi-) subsistence farms, which mean that they do hardly participate in the market. Consequently, subsistence farming can constitute an impediment to rural economic growth. Commercialisation of subsistence agriculture can therefore be a way out of this situation. However, this may easier be said than done since there may be several factors influencing the prevalence of subsistence farming. Moreover, it is possible that subsistence farming, even though not contributing to economic growth, still has an important role for rural household welfare in the NMS.

Subsistence farming in developing countries has been widely researched for decades, while subsistence farming in transition economies started to attract research interest in the late 1990s. Subsistence farming in a developing country context is still the dominating field of research and literature on subsistence farming in transition economies is still fairly scarce.

5.1 Subsistence farming defined

There exists no consensus definition of either subsistence or semi-subsistence farming. Generally, a definition of subsistence farming may depart from three different criteria: *economic size*, *physical measures* and *market participation*. As an example of the first, the Farm Accountancy Data Network (FADN) surveys of the EU and Eurostat Farm Structure Surveys (FSS) use economic size as the criterion for distinguishing subsistence farms from commercial farms.[23] As for the NMS, a farm below one European Size Unit (ESU) is considered a subsistence farm, while there is no fixed threshold for a semi-subsistence farm. Council Regulation (EC) No. 1698/2005 though defines semi-subsistence farms as "agricultural holdings which produce primarily for their own consumption and also market a proportion of their output", thus making use of a market participation criterion. Physical measures, such as agricultural land and number of livestock, can also define subsistence through thresholds. In every case, a certain threshold for subsistence and semi-subsistence must be fixed but as pointed out by Brüntrup and Heidhues (2002), the distinction between subsistence and commercial farming will always be arbitrary. Mathijs and Noev (2002), argue that the problem with defining subsistence farming lies in that it can be defined both, from a consumption and a production point of view, and that subsistence may also vary between 0 and 100%. Mosher (1970) defines subsistence farmers as farmers selling less than 50% of their production, a view shared by, for example, Todaro (1995), who argues subsistence farming should be defined as farming conducted mainly for personal consumption with characteristics of low productivity, risk and uncertainty. Sarris *et al.*

[22] This section is pertinent for WP6 of SCARLED (see Figure 1.1).

[23] The economic size of farms is expressed in terms of European Size Units (ESU). The value of one ESU is defined as a fixed number of EUR/ECU of Farm Gross Margin (FGM). Over time the number of EUR/ECU per ESU has changed to reflect inflation. Currently, one ESU equals 1,200€ (http://ec.europa.eu/agriculture/rica/methodology1_en.cfm, accessed 14-06-2007).

(1999) also adopt this definition, distinguishing subsistence from commercial households based on whether households produce mainly for own consumption or not. The market participation criterion is also the one suggested here, where households will be classified according to production: only for own consumption; mainly for own consumption; mainly for the market; and only for the market. Within these classifications, a further division by degrees of market participation is also possible.

5.2 The role of subsistence farming in the rural economy

Subsistence and semi-subsistence farming are persistent in the NMS even though the process of transition started more than fifteen years ago. Nationwide FSS in compliance with EU requirements were carried out during 2005 in all the five NMS included in the SCARLED project, covering all farms with an economic size of at least one ESU. Farms below one ESU were considered subsistence farms and as such not covered by the survey, which focused on commercial farms only. Nevertheless, the FSS give an indication of the farm structure and importance of agricultural production for self-consumption in the NMS, as illustrated by Table 5.1 below.

Table 5.1 Farm structure and production for self-consumption in the NMS (2005), (%).

	Bulgaria	Hungary	Poland	Romania	Slovenia
Agricultural area used < 5 ha	81	54	35	74	51
Larger agricultural areas used*	3	7	2	1	4
Producing mainly for own consumption	36	55	21	69	61

Source: EUROSTAT 2007a, 2006a, 2006b, 2007b and 2006c.

Note: * Threshold of >100 ha for Bulgaria and Romania; >50 ha for Hungary and Poland; and >20 ha for Slovenia.

Subsistence farming has for a long time been negatively perceived as "characterized by a low-external input level and low productivity" and "seen as synonymous with backwardness and inefficiency, holding down economic growth and economic performance" (Heidhues and Brüntrup 2003: 1-2) and "associated with poverty, low levels of technology, inefficient production and low levels of commercialization" (Mathijs and Noev 2002: 3). However, during the past years a contrasting view of subsistence has emerged where it is argued that subsistence agriculture may have positive effects on transition economies. Brüntrup and Heidhues (2003) put forward arguments about the positive impacts of subsistence farming (e.g. as a way for people to survive under difficult and risky conditions, to cope with high transactions costs and in playing an important stabilising role in fragile economies). Kostov and Lingard (2004) also emphasize the stabilising role of subsistence farming and its positive impacts on the agricultural sector where there is no demand for the resources it employs within the commercial sector.

Relevant studies of subsistence and semi-subsistence farming in transition economies include: (i) Mathijs and Noev (2002), which focus on farm household characteristics and endowments influencing subsistence farming and commercialisation; (ii) Kostov and Lingard (2004), reviewing micro-economic models of subsistence and developing a two-stage decision model for market participation; (iii) Kostov and Lingard (2002), who find that the main reasons for the emergence and persistence of subsistence agriculture in

Bulgaria are "largely non-agricultural and of a general economic nature" and that small scale farmers do not intend to market their output; (iv) Wehrheim and Wobst (2005), applying a CGE-model to simulate the importance of subsistence farming to Russian agriculture during transition; (v) Tudor and Balint (2005), finding that market participation, volume of sales and commercial orientation are negatively influenced by high transportation and transaction costs; (vi) Balint and Wobst (2006) further exploring transactions costs with the addition of cooperation also being found to impact market participation; (vii) IAMO (2003), providing a collection of papers on "how to break the vicious circle (of subsistence agriculture)?"; (viii) Sarris *et al*. (1999), seeing potential of commercialisation of small-scale farms but at the same time finding commercialisation constrained by technological and financial factors; and finally (xi) Bezemer and Lerman (2003), exploring the rural economy in Armenia through the adoption of a livelihoods framework. In addition to this, literature on developing country pro-poor economic growth by agriculture, also give valuable insights into the role of subsistence farming in a rural economy, as for example Byerlee *et al*. (2005).

Having said this, previous works are mainly centred on how farm household characteristics and endowments, transactions costs, institutional factors and to some extent also rural labour markets affect market participation. Nevertheless, still little is known as regards the motivations, objectives and behaviour of subsistence farmers in transition economies and its role for rural household welfare. Without understanding the reasons for the persistence of subsistence, it is not possible to work out any policies aiming at subsistence farmers moving towards commercial agriculture. This is why this is an area in strong need for further research. Thus, in order to get a better understanding of the role of subsistence farming in the NMS, it is crucial to investigate *why* farm households are subsistent or semi-subsistent and to move beyond purely economical explanatory variables. As regards the role of subsistence farming in relation to welfare, its possible roles as safety net, a source of additional household cash income or a lifestyle preference needs further research.

5.3 Is farmers' cooperation and social capital in rural areas an important factor in commercialisation of subsistence and semi-subsistence farms?

Cooperation among farmers will be looked upon more closely through a case study on Poland. Theoretical literature shows that cooperation increases the total pay-off to a potential group over what they could do individually (Schmid 2004). Therefore, in order to analyse possibilities for commercialisation of subsistence and semi-subsistence farms, farmers' cooperation (both formal and informal) will be analysed under the wider framework of social capital.

The concept of social capital has gained a lot prominence in recent years but still suffers from lacking a commonly accepted definition. A comprehensive overview of definitions is given by Productivity Commission (2003) and Buchenrieder and Dufhues (2006). The definition that covers many interests sees trust, norms, and networks as key features of social capital (Putnam 1993). It is argued that at the macro level, social capital can affect the economic performance and the processes of economic growth and development (Knack and Keefer 1997, Woodhouse 2006). At the micro level, research revealed that social capital may cause a higher personal income (Narayan and Princhett 1997) or agricultural performance (Wolz et al. 2006). Notwithstanding the wide range of literature that highlights the positive effects of social capital, its negative effects should not be ignored. Portes (1998) showed a wide range of negative effects and also Knack and Keefer (1997) and Beugelsdijk and Smulders (2003) stressed that not all forms of social capital may have

a positive impact. Therefore, analysing social capital seems still crucial for determining its effects (positive and negative) on structural changes not only in a society as a whole but especially in rural areas and with respect to agriculture.

The focus of this part of the study is on Poland. On the one hand, empirical evidence shows that in Poland the level of trust in rural areas is very low and has even diminished during the transition process. On the other hand, the propensity to cooperate and participate in social organizations has improved and is larger in comparison with urban areas (Polska Wies 2004). A growing body of literature on agricultural sector restructuring and its implications for rural areas (especially for small-scale producers) emphasize issues like common action problems and the importance of effective activity of producers' organizations, etc. (Wilkin 2003). Thus, it is important to investigate the development of cooperation amongst small-scale farmers that face barriers to commercialisation in the face of a rapidly restructuring supply chains. These aspects will be studied in Poland where useful lessons for the other NMS regarding co-operation between small-scale farms will be drawn.

5.4 Driving forces behind the persistence of subsistence farming

There are several possible explanations to the persistence of subsistence farming in the NMS. Highlighted by earlier research are household characteristics and endowments, market imperfections, transactions costs and general macro economic and policy environment. As pointed out earlier, the motivations, objectives and behaviour of subsistence farmers in transition economies and its role for rural household welfare is still a disregarded area of research. Moreover, economic analysis tools are based on the existence of markets and as such may not be accurate for subsistence farming analysis. Therefore, an analysis of the persistence of subsistence farming in the NMS may need to move beyond purely economical explanatory variables. All the above mentioned factors, from household characteristics to behavioural issues, may impact the persistence of subsistence farming to various extents. The crucial question – Why are farm households subsistent? – may therefore need to be looked upon from different analytical points of view. Possible ways of framing the research will be presented below.

Are there systematic characteristics locking households into subsistence?

An important part of gaining a comprehensive understanding of the persistence of subsistence farming in the CEECs, and targeting policies aiming at rural economic development, is to identify the characteristics of subsistence and semi-subsistence farmers and to investigate the similarities and differences among these groups. This calls for an analysis of certain farm activity and household characteristics. For this matter, relevant data are to be collected on *household characteristics* (i.e. family size, age, education, dependency ratio and gender); *household activities and income* (i.e. farm and non-farm activities, wage employment, agricultural and non-agricultural sales and non-earned income); *physical and financial capital* (i.e. land, livestock, machinery, borrowing, savings) as well as *social capital* (cooperative membership, contracts).[24] In addition to this, general data such as location and level of regional development may also be considered. For this matter, previous works by Bezemer and Lerman (2004); Key *et al.* (2000); Kolev

[24] The sustainable livelihood concept covers all these analytical aspects and is described in Section 4.1 'The concept of livelihoods'.

and Pascal (2002); Lopez and Valdes (2000) and Mathijs and Noev 2002) provide useful insights to key survey variables.

Commercialisation of subsistence farming

The ability and possibilities of subsistence farmers to move towards commercial agricultural production must also be addressed. An important part of this analysis is to investigate the relationship between production decisions and market participation, and more precisely whether market participation and production decisions are made simultaneously or sequentially. Evidence for a sequential market participation decision is found by Bellemare and Barrett (2006). A two-stage decision model for market participation taking into account risk and transactions costs is developed by Kostov and Lingard (2004) but it is not empirically tested. The second question of interest regards market participation in the case where a marketable surplus exists (e.g. what are the crucial factors affecting market access and integration in the market supply chain). Here, factors such as ability and willingness to adopt new technologies, transactions costs, cooperative membership, contracts and possible supply channels are of particular interest. Previous works in this area include Balint and Wobst (2006) on institutional factors and market participation; Ferto and Szabo (2002) on vertical co-ordination; Holloway *et al*. (1996) on institutional innovation; Guo *et al*. (2007) on contract farming; and Key *et al*. (2000) on transactions costs. A third question that arises in connection to this is how much it would cost for subsistence farmers to go commercial, a matter considered by Cadot *et al*. (2005) with respect to Madagascan farmers.

Cooperation among farmers will be looked upon more closely through a case study on Poland. The main goal of the research will be to show the relationship between quality of social capital and structural change in rural areas in Poland. It is necessary to identify the factors influencing cooperation among farmers. The main interest is to investigate cooperation between producers in the face of changing conditions (caused among others by intensive foreign direct investment (FDI) inflow in food industry and retail sector during transition period, integration with the European Union and globalisation process). The first part of the research will be concerned with measurement of social capital. Then, to identify and understand incentives and impediments to cooperation between farmers, factor and cluster analysis could be applied.

Do farm households choose to be subsistent?

A widespread perception of subsistence farming is that it is a survival strategy enforced by the lack of other possibilities, that there is no other choice. Nevertheless, it is possible that subsistence farming instead of being the only alternative to survival is actually a voluntary choice.

Considering the nature of subsistence farming as a non-cash income bringing activity, one possible way to frame the research is to study the household through a utility rather than a profit maximising framework, regarding the household as the utility maximising unit. The use of farm household utility maximising models in relation to subsistence farming is to date a little applied method of analysis. What needs to be stressed though is that subsistence and semi-subsistent farm households are both producers and consumers of agricultural produce. Farm household utility models must thus take this dual role into account, e.g. that a utility model in this context must recognise the inseparability of consumption and production in subsistence farm households as highlighted by Singh *et al*. (1986). One option for designing a household utility model comes from the 'new home economics' approach to household decision making. From this point of view, the household

is regarded as a production unit which converts both domestic and purchased goods and services into consumption. The utility function represents the household's preferences ordering between a range of final characteristics of home-produced goods and services (Ellis 1993). Support for the design of a utility maximising framework where the farm household is the utility maximising unit can also be found in Taylor and Adelman (2003).

Additional insights may come from choice modelling; a statistical method to study preferences between different 'choice sets' of alternative strategies. Within the choice modelling framework, it is possible to test for subsistence farming as a result of decisions based on non-economic rationales, e.g. preference for a traditional lifestyle or enjoying a hobby activity. Core choice modelling works by Adamowicz *et al.* (1994); Boxall *et al.* (1996); Louviere (1991); Louviere *et al.* (2000); Hanley *et al.* (1998) and Hanley *et al.* (2001) give guidance as to how study subsistence farm households' choices and intentions. Moreover, farm households' attitudes towards risk may also be conclusive for subsistence farming activity. There is a possibility of subsistence farming persisting due to memories of periods of food shortage under the economic crisis during the transition period, in the sense that subsistence farming may serve as a buffer against threats of food insecurity. The risks associated with a shift from subsistence to commercial farming may also be an impediment to commercialisation and thus explanatory for the persistence of subsistence farming. With regard to this aspect of subsistence farming, an analysis of farm household risk behaviour finds support in Binswanger (1980); Dillon and Scandizzo (1978); Heinrich and Mcelreath (2002); Larson and Plessmann (2002); Moscardi and de Janvry (1977); Park (2006) and Zimmermann and Carter (2003).

Macroeconomic and policy environment

The macroeconomic and policy environment are also likely to influence the persistence of subsistence farming. Subsistence farming in relation to economic growth is therefore another area that may need consideration when the above microeconomic analyses have been carried out. Is subsistence farming related to low economic growth and remoteness? And is subsistence farming an impediment to economic growth, or is it an effective strategy to survive under economic transition? Pingali (1997); Pinder and Wood (2003) and Kydd *et al.* (2004) can come to serve as a basis for this analysis.

5.5 Research questions with respect to the socio-economic functions of subsistence farming and cooperation among farmers

The definition of subsistence farming followed here is as follows (see Box 5.1):

Box 5.1 Working definition of subsistence farming

In subsistence farming, production is *mainly* used for own consumption. Subsistence farming may then be further differentiated according to the share of market participation and/or degree of subsistence.

The questions to be answered in order to get a comprehensive picture of the role of subsistence farming and cooperation in the rural economy are the following:

- What is the prevailing role of subsistence farming in the NMS: a safety net, a source of additional household income or a lifestyle preference?

- Are there systematic characteristics of households, asset endowments and external environment that lock households into subsistence?
- What are the drivers for and impediments to commercialisation of subsistence farms?
- Is subsistence farming an impediment to rural economic growth or can subsistence farming have a positive impact on the rural economies in transition countries?
- Are cooperation and social capital in rural areas important to commercialisation of subsistence and semi-subsistence farms? (Polish case study).

As a result of this analysis, possible future development paths for subsistence and semi-subsistence farms and households; commercialise agriculture; exit agriculture; or remain subsistent, will ultimately be considered.

6 DIVERSIFICATION OF EMPLOYMENT[25]

Judith Möllers

Employment diversification is a major livelihood strategy in rural areas and is thus a focal point in the ongoing rural development debate. There is no accepted and comprehensive theory on employment diversification. Therefore, after a brief introduction to the definitions (see Box 6.1), the existing concepts are summarized and linked.

The dynamics of non-farm rural employment (NFRE) are closely interrelated with the institutional framework and its incentives and constraints. To explain employment diversification it is necessary to consider both the context in which livelihood strategies evolve, and the individual determinants of behaviour. The theoretical concepts discussed here are all based on the rational choice approach, but differ in their foci.

Box 6.1 Working definition for 'employment diversification' and 'pluriactivity'

Employment diversification is a dynamic socio-economic process in which rural households widen the range of income sources in their income portfolio. Such diversified incomes are usually based on a mix of farm and non-farm incomes. Employment diversification leads to an increase in the number and mix of income sources. Thus, employment diversification rises with the number of income sources, the equity of their distribution, and their dissimilarity. In other words, a household with three income-generating activities is more diversified that a household with two income generating activities; and a household with two activities which use 50% of the labour input is more diversified than a household in which the labour input allocation is 90%:10%. Moreover, the diversification level increases if the income sources are not of the same type.

The term ***pluriactivity*** is used to describe a situation in which an individual pursues more than one income-generating activity or, respectively, the number of income generating activities in a household exceeds the number of active household members.

Sources: Ellis (2000), Minot (2003), Möllers (2006)

[25] This chapter is relevant for WP7 'Rural labour markets and diversification of rural economies' of SCARLED.

6.1 The SLF and demand-pull and distress-push driven diversification strategies

Employment diversification is an integral part of the Sustainable Livelihood Framework (SLF) (see also Section 4.1). The SLF focuses on action alternatives and constraints, here employment diversification and constraints to employment diversification, arising from structures, the institutional environment and access to capital. The so called demand-pull and distress-push concept, similarly, looks at the context in which diversification strategies evolve. It stresses the different motives that drive employment diversification.

The SLF describes employment and vulnerability management strategies. It looks into livelihood strategies in a given context defined by access to capital, structures and institutions (Figure 6.3). Within the SLF, diversification is defined as one action alternative to reduce poverty and vulnerability or to maintain or enhance the capabilities and assets of a household. The factors affecting people's access to different forms of NFRE strongly relate to whether or not (and to which extent), people have access to the five forms of capital assets depicted in the asset pentagon in Figure 4.1, i.e. natural, physical, human, social, and financial assets. These livelihood assets influence and determine access to the socio-economic structure of society at large and their formal and informal institutions.

NFRE is very diverse; it is often "highly lucrative at the top end with mainly formal wage employment and modern capitalized enterprises, but very menial at the bottom end, where traditional artisan skills and poorly paid manual labour predominate" (Start 2001: 496). In accordance with this, two directions of non-farm diversification have been identified: demand-pull and distress-push processes (Efstratoglou 1990, Barrett et al. 2001).

The demand-pull and distress-push concept was first introduced by Everett Lee in 1966 to explain migration dynamics. In the context of diversification it is used to explain labour shifts from the agricultural sector to the rural non-farm sector. A set of factors determines whether an individual is capable of gaining access to demand-pull employment or whether he is forced to take up poorly paid non-farm employment due to distress-push dynamics. The term demand-pull is used to describe a situation in which those employed in agriculture seize more lucrative employment opportunities in the rural non-farm economy. The term distress-push describes a situation in which inadequate agricultural incomes and other negative factors push workers into poorly paid NFRE. The demand-pull and distress-push factors reflect the asset pentagon as well as the institutional environment of the SLF. The concept allows to highlighted more specifically the different incentives and constraints experienced in obtaining NFRE in a given livelihood framework (Möllers and Buchenrieder and 2005).

Obviously, households with a better endowed livelihood asset pentagon can more easily take up more lucrative demand-pull NFRE than the others. They react to demand-pull factors and benefit from a 'positive selection' concerning age, education, skills and motivation. Whereas pull-factors facilitate diversification processes, but are normally not sufficient to initiate them, push-factors could be seen as the essential driving force of diversification. Those who follow distress-push forces are typically subject to a 'negative selection' (Lebhart 2002). Often household members who feel pushed by factors associated with constraints in farming become pluriactive (Efstratoglou-Todoulou 1990). Pluriactivity is, therefore, seen more as a negative phenomenon characterized by poverty induced, 'residual' activities (e.g. Saith 1992). Distress-push NFRE may nevertheless have a positive effect on the rural population's livelihoods by increasing total aggregate household income, by reducing vulnerability, and by improving risk management (Start 2001).

6.1.1.1 A basic welfare model of demand-pull and distress-push processes

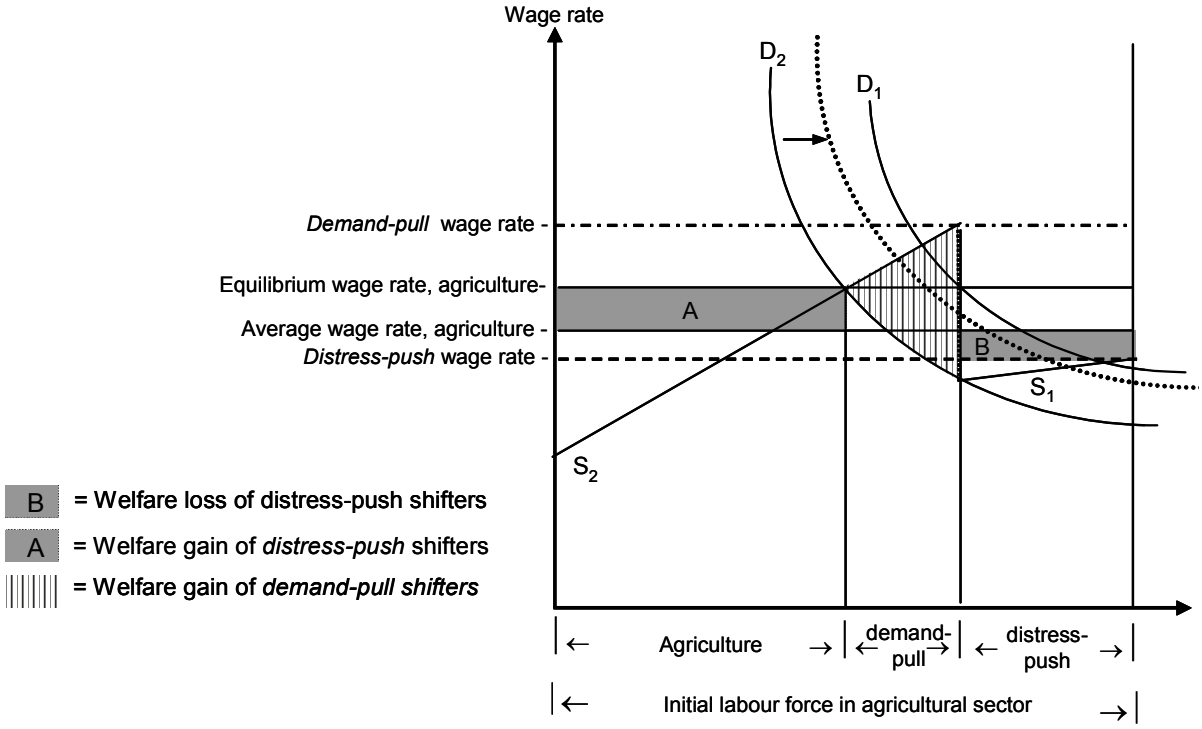
A welfare model, illustrating labour allocation processes induced by demand-pull and distress-push dynamics, demonstrates that both directions (i.e. demand-pull and distress-push) are beneficial for households and society (Möllers and Buchenrieder 2005). Figure 6.1 depicts the welfare gains emerging due to labour force shifts from the agricultural sector to the non-farm rural economy. It differentiates between: (1) the demand-pull direction motivated by a wage rate that is higher than the average wage rate in agriculture, and (2) the distress-push direction with a wage rate that is no higher or even lower than the average wage rate in agriculture. The motivation for distress-push shifts arises from an incomplete agricultural labour market as is typically found in most developing and transition countries, where high levels of disguised unemployment exist. In the model, it is therefore hypothesized that the income created in the non-farm sector by household members is fully added to the total household income in the early stages.

Two labour supply curves are drawn in the model. S_1 is the labour supply curve of distress-push shifters, while S_2 represents the demand-pull labour supply curve. This distinction arises due to differences within the rural population in terms of individual capital assets and, consequently, in terms of opportunity costs of agricultural labour (Schmitt 1992).

It is argued that distress factors may push some of those employed in agriculture to take up NFRE at a wage rate that is no higher or even lower than the average wage rate that they could achieve in agriculture (Figure 2). This is depicted by S_1. Obviously, it is more attractive to work in the better paid demand-pull sector, but due to high shifting costs (e.g. caused by a lack of capital assets and inadequate state structures and institutions), distress-push shifters cannot move up to the better positioned S_2. Their only alternative to unproductive agricultural work is the low-paid distress-push sector.

The highest acceptable labour shifting costs are represented by the difference between the distress-push wage rate and the labour supply curve S_1, at the point where S_1 intersects D, the labour demand curve in agriculture. For household members offering labour on S_1, it is impossible to move in the demand-pull direction because the shifting costs are insurmountably high. To raise aggregate household welfare, family members with zero or low opportunity costs of agricultural labour could work at the lower distress-push wage rate. The welfare gain of distress-push shifters is the difference between the shaded areas A and B. The shaded area B represents the wage loss for those who move out of the agricultural sector and A represents the wage gain for those who remain in agriculture. Hence there is an economic rationale for farm households to diversify, even if it means that one member of the household receives a below-average wage rate from the farm activities because total household income will increase.

Figure 6.1 Demand-pull and distress-push labour shifts: A basic model of welfare gains



Source: Adapted from Möllers and Buchenrieder (2005)

Note: The wage rates in the non-farm sectors are fixed. The average wage rate in agriculture lies below the equilibrium wage rate because aggregate agricultural wages are divided among all household members, even those who do not contribute to the aggregate value added (disguised unemployed).

The labour supply curve S_2 represents those who work in the agricultural sector and are potential shifters to the demand-pull sector. S2 results from the marginal productivity in the non-farm demand-pull sector minus the cost of shifting to it from agriculture (cf. Sinn and Werding 2001). Similar to the distress-push process, the shifting costs are zero where the supply curve S_2 intersects the demand-pull wage rate. Given that the wage rate in the demand-pull direction is higher than the equilibrium wage rate in the agricultural sector, workers will move out of agriculture as long as the difference between the wage rate in the demand-pull sector and the wage rate in agriculture is larger than their shifting costs. The welfare gain from this labour market adjustment is the striped triangle indicated in Figure 6.1. The decision to move depends primarily on the difference in wages between the two sectors. Once the shifting costs are greater than the difference between the wage rate in the demand-pull sector and the agricultural sector, the migration of labour in this direction will stop.

Labour productivity and thus the average wage rate of those remaining in the agricultural sector will increase due to the labour force shifts. Therefore, the incentive to work in the non-farm sector is reduced for those who remain in agriculture. This relationship is depicted by the dotted line in Figure 6.1.

6.2 Diversification decisions: Theoretical insights from behavioural research

Neither the comprehensive theoretical approaches of the SLF and the demand-pull and distress-push concept nor the economic welfare model address the decision-making process itself. Therefore, we suggest complementing the insights of these concepts through a behaviour model based on the Theory of Planned Behaviour (Ajzen 1985). It integrates the complex environment in which decisions are made (i.e. the vulnerability context and the available capital assets and institutions) by concentrating on three main determinants of human behaviour: attitudes, norms and behavioural constraints. Nevertheless, the decision is still understood as part of a utility maximizing behaviour of the household as suggested by the rational choice theory.

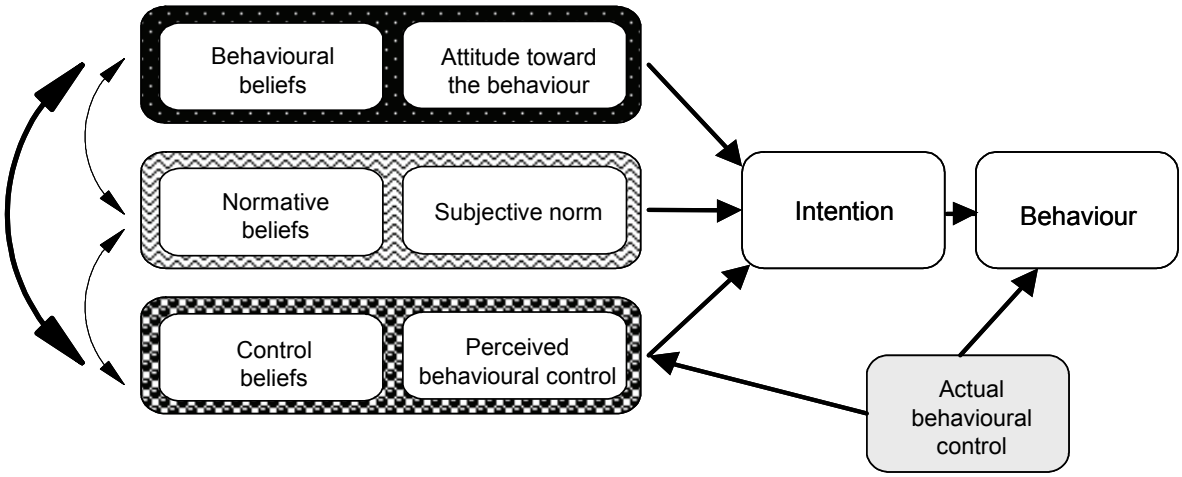
According to Ajzen (2002), human action is guided by three kinds of considerations or 'beliefs': behavioural beliefs, normative beliefs and control beliefs. These beliefs are seen as pre-amplifiers expressing a subjective probability to behave in a certain fashion. They result in attitudes, subjective norms and perceived behavioural control (Figure 6.2). All influential factors of the theoretical concepts discussed above are implicit in these determinants of human behaviour.

Behavioural beliefs concern the likely outcomes of a certain behaviour and the evaluations of these outcomes. The resulting attitude is thus a personal factor that considers the degree to which a person evaluates a specific behaviour positively or negatively. In the context of NFRE, the expectation of secure and high income from wage employment might be evaluated positively by the household when considering the possibility of non-farm diversification. Together with other beliefs about NFRE, this might lead to a positive attitude. In economic theory, the term 'preferences' is used largely congruently.

Normative beliefs describe normative expectations of others and the motivation to comply with these expectations, for example the expectations of parents about their children succeeding them in their business. Accordingly, a subjective norm is a social factor that refers to the perceived social pressure to either perform or not perform the behaviour in question (e.g. to maintain the family business). This normative component of the theory deals with the influence of the social environment on behaviour. Basically, the subjective norm refers to an individual's perception about his peers', family's or friends' opinions and how this perception influences him to adopt a specific behaviour or not.

Control beliefs result from the presence of factors that may facilitate or impede performance of the behaviour and the perceived power of these factors. Perceived behavioural control refers to people's perceptions of their ability to behave in a given way. Actual behavioural control refers to the extent to which a person has the skills, resources, and other prerequisites needed to behave in a given way. The diversification behaviour may, for example, be influenced by the conviction (or the actual fact) that one has or does not have the necessary financial means or skills to diversify. In other words, the performance of a behaviour depends not only on a favourable intention but also on a sufficient level of control. Thus control beliefs are directly affected by the capital assets pentagon depicted in Figure 6.2, but Ajzen (2002) also stresses the importance of perceptions which might differ significantly from actual conditions and between individuals.

Figure 6.2 Theory of planned behaviour



Source: Ajzen (2002)

The combined attitudes towards the behaviour, subjective norm, and perception of behavioural control lead to the formation of a behavioural intention. As a general rule, the more favourable the attitude and subjective norm, and the greater the perceived control, the stronger should be the person's intention to perform the behaviour in question (here: non-farm diversification). Finally, given a sufficient degree of actual control over the behaviour, people are expected to carry out their intentions when the opportunity arises.

6.3 Synthesis of employment diversification concepts

The different aspects of the complex issue of NFRE dynamics can be approached using existing analytical frameworks. All concepts presented in this paper are, under certain circumstances, useful when trying to identify the determinants and possible outcomes of NFRE. In the light of the need for an integrated comprehensive analytical framework, Figure 6.3 portrays a synthesis of all concepts discussed here.

The behaviour model is symbolised by a 'thought bubble' and represents the actual decision-making process. The SLF with its grey-shaded components represents the natural, social and institutional environment of the decision-maker. All components of the SLF influence the decision-making process and are reflected in the determinants of behaviour. Cultural and social institutions are essential for the formation of norms, while the capital assets, structures and market institutions often act as constraints on the subjective control. The distress-push and demand-pull concept is seen as an integral part of the SLF, which enables us to distinguish between different kinds of diversification strategies based on their main motivation. Reduced to a welfare model, it points to the rationale to increase household income as the main driving force for taking up NFRE. Figure 6.3 also depicts the overlap between 'motivation' and 'intention', as is used in the Ajzen model.

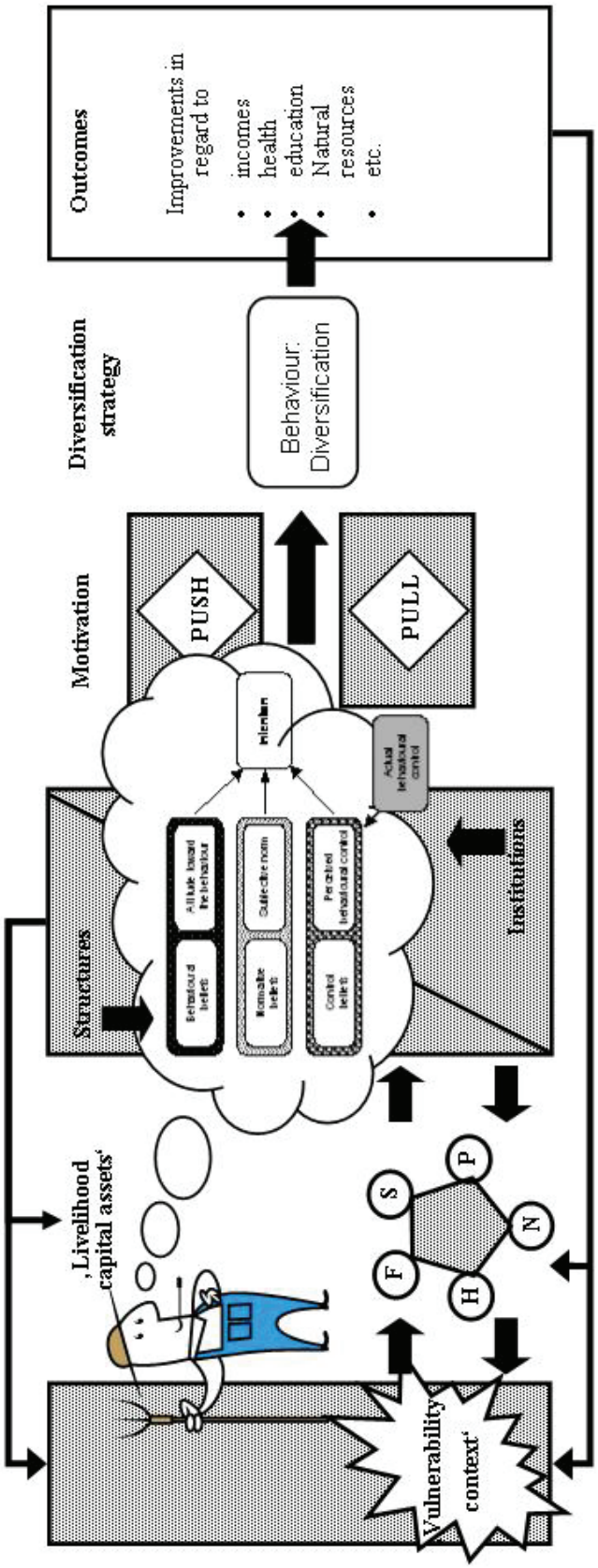


Figure 6.3 An integrated framework for the analysis of NFRE

Source: Möllers (2006)

Looking at the SLF and Ajzen's model simultaneously, it becomes clear that analyzing strategic behaviour in rural/farm households has to cope with several challenges: first rural/farm households are multi-person units, where each person may have a stake in the outcome of the chosen strategies; second income maximization may be an objective, but often it is utility maximization or pure survival that drives them, thus, straight-forward economic analysis models may work but more often not. This calls for a fuzzy approach in analysis to encompass difficult to grab drivers of structural change. Furthermore, cooperation (social capital in the form of networks) seems to play an important role in livelihood strategies and thus structural change. Therefore, this potential driver of change is looked at in more detail.

6.4 Diversification of employment in Europe's transition economies

Rural households in Europe's transition economies depend to a high degree on non-farm income sources. Their income portfolios are often highly diversified due to various reasons. First of all, the former socialist states have a tradition of non-farm activities in rural areas (Greif 1997). Nowadays, these countries are still suffering from the transition shock which led to a sharp decline in production and employment and an increase in poverty. One of the main drivers of employment diversification during transition are the so called distress-push dynamics. Although there are clear signs of recovery and economic development, particularly the unemployment rates in rural areas remain high. Furthermore, there is still a lack of rural infrastructure, capital for investments and high skilled labour force (Swinnen et al. 2001)

Figure 6.4 The importance of non-farm income sources in Europe's transition economies

Country (year)	Share of non-farm income in total rural incomes	Source
Czech Republic (?)	15%	(4)
Hungary (?)	17%	(4)
Slovakia (?)	20%	(4)
Armenia (2001)	31%**	(3)
Lithuania (2001)	34%	(1)
Estonia (2001)	41%	(1)
Poland (1998)	41%*	(1)
Romania (2001)	42%**	(3)
Slovenia (2001)	44%**	(2)
Macedonia (2001)	49%**	(2)
Georgia (2001)	55%**	(3)
Bulgaria (2001)	68%**	(3)

Source: (1) Network of Independent Agricultural Experts in the CEECs 2004, (2) Möllers 2006, (3) Davis et al.(2004), (4) Greif (1997)

Note: *Includes paid agricultural employment
**The data refers to case regions and not to the national level

Statistical data and empirical studies on the diversification of rural employment in transition economies are rare. It is estimated that that between 30-50% of rural incomes in Europe's transition economies are derived from non-farm activities with local incomes playing a bigger role than urban income sources (Greif 1997, Network of Independent Agricultural Experts in the CEECs 2004). Figure 6.4 gives some examples. As part-time employment and activities which are not registered often do not appear in official

statistics, Lanjouw and Lanjouw (1997) think that the importance of the non-farm sector is often underestimated. Nonetheless, its crucial role for rural development is unquestioned. It is based on the close relationship with the farming sector as well as it high potential to address the problem of structural change and unemployment in rural areas.

7 FARM STRUCTURE EVOLUTION IN TRANSITION

Luka Juvančič

The transition from central planning to market-oriented economies in CEE and the Commonwealth of Independent States (CIS) brought along profound changes in agriculture and rural economies. Profoundness, scale and pace of structural changes are surpassing the known experience (Deininger 2002).

In view of the magnitude of the change and of the heterogeneity of initial conditions, it is hardly surprising that today, almost two decades after formal end of the socialist economic experiment, rural economies in countries undergone economic transition differ a lot, probably more than they did before transition started. Different modalities of transition, together with factors, such as different policies for land property rights, degrees of control of land rental and sale markets, procedures for restructuring former collective or state farms, contributed to the today's diversity of farm structures.

Today there is no universal model of post-transition rural economies. Rather than this, already in the CEE countries which are regarded as relatively advanced in terms of economic transformation, one can meet radical differences: from relatively large and efficient agricultural enterprises in Czech Republic to small-scale subsistence-oriented agricultural households in North-East Bulgaria, from highly specialised large-scale family farms in former Eastern Germany to diversified small-scale family farms in Slovenia.

The situation encountered opens many questions. Were the initial endowments of agricultural sector in the 'Eastern block' really that uniform? What were the main causes that triggered so diverse paths of transition? Can we point out, which models of transition proved to be more successful in forming efficient agricultural sectors and vibrant rural communities? Are profound changes experienced in rural sectors during transition in final stage or 'work in progress'? If the latter is the case, what are the likely trends of structural change? Do the diverse and in many ways incomparable structural conditions of agriculture in the NMS of the EU challenge to the notion of 'European Model of Agriculture', which is regarded as the cornerstone of the CAP of the EU.

This contribution tackles only some of the questions stated above. Its geographical focus is to the CEE countries recently acceding to the EU (NMS). It aims to explain the differences in initial conditions. By comparing some crude structural indicators through different points of time, it tries to elucidate the pace of structural change and to point out the main similarities and differences in managing the process of transition. It attempts to provide a qualified assessment of the likely future trends in development of farm structures of the NMS and likely implications of these trends for EU policies dealing with agriculture, rural development and economic and social cohesion

It has to be accentuated that various aspects of structural change in agricultural and rural sectors of countries undergone transition to market economies have been extensively covered in reports of international organisations (FAO, World Bank, OECD, European Commission), and in scientific literature (Lerman 2000, Swinnen et al. 2005, Sarris et al. 1999, just to mention some). In this section, we derive from already published findings. On the other hand, statistical evidence about initial structural conditions in agriculture (Eurostat 2007; FAOSTAT 2007) is patchy and inconsistent. Comparable statistical data on farm structures can be found only from year 2000 on. It is due to this circumstance that, tracing statistical indicators on farm structures in CEE countries before this year and compare them with the latest available data (e.g. 2005 farm survey) is an appealing, but most often impracticable idea.

7.1 Points of departure / initial conditions

To understand the substance of farm restructuring in the transition process, we need to understand the conditions, in which both, economy in general and agricultural structures were evolving throughout the decades of socialist system.

Although rarely pointed out in discourse on agricultural structures, there was considerable heterogeneity between the CEE countries in terms of the level of economic development, land endowments, and relative importance of agricultural sector also prior to transition.

These differences can be illustrated by the fact that the pre-transition per capita GDP figures were differing within a range 1:4. The start of economic and political transformation after 1989 generated high hopes and expectations of fast improvement in living standards and of catching up with Western Europe. However, the first ten years of transition have only increased this gap. The first decade of transition has been characterized by highly divergent paths of growth among the transition economies (Figure 7.1). By 1999 the central European transition economies had either regained (Poland, Slovakia, Slovenia), were close to their pre-transition GDP levels (Czech Republic, Hungary), were starting to recover (Estonia, Lithuania, Latvia) or were still struggling with the transformational recession (UN-ECE 2000).

In most of the CEE countries, the share of agriculture in total employment was high in relation to the countries with high levels of GDP per capita (Lerman et al. 2002). Also here, differences between the CEE countries were pronounced. In Romania and Poland entered transition with over 25% share of agricultural employment. On the other side, share of agricultural employment in Czech Republic and Slovenia was below 10%, which still deviated from most of the Western European counterparts.

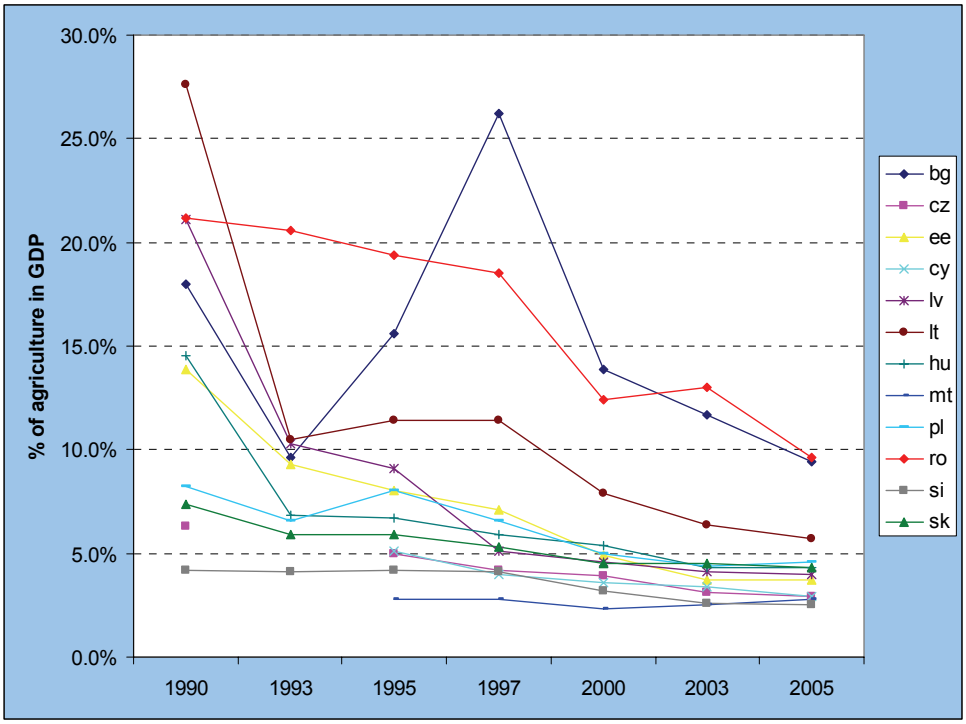
There were (and still are) no significant differences in the structure of agricultural land resources. The CEE countries have in general a relatively high proportion of arable land (in most cases, above 70%) and correspondingly low proportion of pastures and hay meadows. The only exception is Slovenia, where almost two thirds of utilised agricultural area is grassland.

As for the ownership of land and legal form of organisation of agricultural production, the countries of CEE entered the transition in similar conditions. Most land, regardless of its ownership, was cultivated collectively in large-scale collective and state farms. The commercial production from the collective and state sector was supplemented by subsistence-oriented individual agriculture based on household plots of less than one hectare. Product markets and input supply channels were largely controlled by the state. Only Poland and Slovenia deviated from this common pattern. Their agriculture remained largely based on small individual farms, although their development was disregarded in comparison with the so-called ‘socialised farm sector’ (Lerman et al. 2002).

In terms of land use, the so-called ‘socialised farm sector’ in most cases controlled about 95% of agricultural land and produced most of the commercially marketed output. Alongside these large-scale farms, there were numerous households cultivating household plots, mainly for subsistence reasons. Again, Poland and Slovenia deviated from this characteristic; in 1990, 77% of agricultural land was cultivated by individual farms in Poland, whereas the corresponding figure for Slovenia was 92% (Czaki and Nucifora 2000).

Agricultural production was thus in most cases collective, leading to inefficiencies due to free-riding, moral hazard and lack of individual incentives for effort supply, as well as investment. In large collective farms, lack of transparency added to high transaction costs of monitoring (Deininger 2002).

Figure 7.1 Macroeconomic significance of agriculture in NMS



7.2 Farm structures in transition economies

Land ownership, transferability of land. As pointed out by Lerman et al. (2002), transition of agricultural sector to market conditions is a multidimensional process. Main dimensions of transition include abolition of central planning, reduction of government intervention, and elimination of price controls, development of functioning markets for factors of production, emergence of credit institutions, new capital investment patterns, and agricultural labour adjustment. However, the major components of the transition agenda are land reform (i.e. establishment of private property rights in land) and the transformation of socialist farms to legal entities operating on market economy principles.

In most CEE countries (Bulgaria, Czech Republic, Slovakia, Hungary, Poland, Romania and Slovenia), private ownership of land was a norm also during the socialist period. The property of most individual landowners remained untouched, although most often land transactions were legally restricted and favouring the socialised farm sector. This resulted in decline and fragmentation of individual sector and, on the other hand, strengthening of the state or cooperative farms. Legal rules concerning land ownership and land transactions were developing differently from one country to another.[26] Crucially, there was no need to legislate for private ownership of land. It was only necessary to decide what to do with the ownership of state or cooperative land (typically created by

[26] Different approaches towards legislating land markets in CEE countries are described in Lerman et al. (2002).

confiscating the holdings of socially undesirable elements such as aristocracy, church, large farmers, or by different modes of land transactions).

Privatisation of land in CEE was typically based upon restitution to former owners. Between the NMS, only Hungary and Romania have decided to combine land restitution with distribution of land to agricultural workers in order to serve the interest of social equity (Lerman 2000).

Land restitution is based on return of agricultural land to the original (pre-nationalisation or pre-collectivisation) owners or their heirs. Of course, different restitution mechanisms were devised in different CEE countries: bidding for land through a market driven auction process for value-denominated certificate owners (Hungary), acquisition of (agricultural or urban) land and other assets by privatisation vouchers (Baltic states), or by returning land in original location (Romania, Bulgaria).

Yet the land ownership issue is only the prerequisite for further structural adjustment of agriculture. Another important source of productivity gains in agriculture is associated with the flow resources to more efficient producers through a functioning land market. This flow is enabled by a variety of land transactions. As Lerman (2000) points out, transferability of land and development of land markets are as important as privatisation of land. This flow is enabled by a variety of land transactions, which include buying and selling of land, as well as various leasing and renting arrangements. If land transactions are restricted, there are no mechanisms for transferring land to more efficient producers. The Polish and Slovene experience have proved that restriction of transfer rights throughout the socialist period is a serious obstacle to efficiency improvements, regardless the fact that agricultural land was mainly used by individual farms.

The land reform agenda in all CEE countries included liberalisation of legal regulations concerning land transfer (in both aspects, buying/selling, or leasing). There are now no legal barriers of land transactions, although various pre-emptive conditions still limit free functioning of the land market. According to results of the World Bank Survey carried out in 2000, land markets have not really developed across the region (Lerman et al 2002). The frequency of land transfers (from 1 to 5 per cent) appeared to be lagging behind the EU average transfer rate (7%).

Individual versus corporate farms. Privatisation, either by restitution or by distribution, involves allocation of land to beneficiaries. However, this does not necessarily mean that landowners decide to cultivate their holdings individually. Actually, it was fairly common that beneficiaries decided to lease their land to large corporate farms or invest it in the equity capital of cooperatives and shareholder structures. Swinnen and Mathijs (1998) discuss about different motivations driving towards such decisions, mainly based upon individual risk preferences, or absentee ownership situation (beneficiaries left farming long ago and have moved to urban areas).

Nevertheless, the share of individual farming has increased continuously since the beginning of transition (Table 1). Increasing 'individualisation' of farming is a pattern common to all CEE countries (Mathijs and Swinnen 1999).

Agriculture is now largely individualised in Slovenia, Latvia and Poland. The change has been particularly striking in Latvia, where prior to 1990 only a fraction of agricultural land was in use by individual farms. In remaining Hungary, Czech Republic, Slovakia, Romania, a considerable percentage of land use (and prevailing part of agricultural output) is attributed to a large corporate sector.

A more detailed insight to the trends of 'individualisation' of farming reveals that the shift towards individual farming was low in countries, where large-scale successor organisations

to the former collective and state farms still dominate (e.g. Slovakia and the Czech Republic). On the contrary, Latvia has sought a massive break of collective farming and corresponding rapid growth of individual farming.

Table 7.1 Percentage of land in individual use

	1990	2002
Bulgaria	13	98
Czech Republic	5	26
Estonia	6	100
Latvia	5	91
Lithuania	9	79
Hungary	6	51
Poland	77	85
Romania	12	82
Slovenia	92	97
Slovakia	5	23

Source: Czaki and Nucifora (2002)

Note: Data presented should be treated with some caution. The 2005 data derived from Farm structural survey reveal somewhat lower values for Bulgaria and Estonia.

Evidence acquired from survey work carried out in late 1990s in Romania and Hungary (Mathijs and Swinnen 1999),various determinants are involved in decision-making about the shift to individual farming. According to these results, the process is affected by human capital and capital endowments in the household, reflected in factors such as age, education and experience, by regional social and economic conditions, and by the market structure.

Also the diversity of corporate farm sector has increased since 1990. As reported by Mathijs and Swinnen (1999), a wide variety of farm organisations, such as (private) cooperatives, joint stock companies, limited liability companies, partnerships and individual farms have emerged following the transition. The dynamics and extent of restructuring of the corporate farm sector varies and is dependent from the initial structural conditions and selected pattern of land reform. Unfortunately, no comprehensive data are available on the management and operation of these new entities. But case studies (Lerman 2000) suggest that in Hungary, the Czech Republic, Estonia and Lithuania many of the large farms today are market-driven corporations. In Romania, at least some of the large farms have evolved by voluntary pooling of land owners into new associations and cooperatives.

7.3 Farm size structure

Although the CEE countries have all experienced considerable shifts in rural structure, and individualisation of farming can be seen as a norm, the extent of the transformation varies from one country to another. As a result, the diversity of farm structures today is much greater than prior to 1990.

Lerman (2000) reports about the changes in the average farm size and farm size distribution. He notes that also in the countries where non-individual farms dominate in agricultural production the newly emerged corporate farms tend to be considerably smaller than previous types of socialised farms. On the other hand, the average size of individual holdings has increased substantially. Various reports (EC 1998) and authors (Sarris et al. 1999; Mathijs and Swinnen 2000; Lerman 2000; Czaki and Nucifora 2002) note that a new group of larger commercially-oriented family farms is emerging and growing. Some of them (Sarris et al. 1999; Lerman 2000) foresee (speculate?) that the new 'intermediate layer' of larger family farms will, at least in a part, neutralise the sharply dual structure that traditionally characterised agriculture throughout the socialist period.

Agriculture in majority of CEE countries remains characterised by highly dualistic operational structure (small number of farms produces most of agricultural output). Lerman (2000) illustrated this by Lorenz inequality curves. According to him, three main structural patterns can be identified: (i) countries with sharply dual structure (Bulgaria, Hungary, Czech Republic, Slovakia), where about 90% of (small scale, mainly subsistence oriented farms) manage only about ten per cent of agricultural land; (ii) countries with relatively 'normal' size distribution (Poland, Slovenia, Estonia, to some extent Romania), and (iii) countries with 'over-fragmented size structure' (Latvia, Lithuania).

Trailable official statistical data on farm size distribution are unfortunately weak, at least as regards time series of comparable data.[27] Therefore, we present only the latest available data on farm size structure, expressed in European size units (ESU), based on attributed estimates of standard gross margin (SGM) at the farm level (Table 7.2).

As Table 7.2 shows, virtually all CEE countries have a large number of farms at the left side of size distribution (from 0 to 2 ESU). The same holds for countries where corporate farm sector dominates in agricultural production (Czech Republic, Slovakia, and Estonia). This goes on the account of household plots, traditionally strong group of subsistence oriented units. Understandably, there is a large discrepancy between significance of these farms and their economic significance. Even though their role is far from negligible (they often serve as a social buffer for some of the most vulnerable social groups), their contribution to the overall ESU number reaches nearly 50% only in Romania, whilst in Bulgaria, Lithuania and Latvia, production potential of these farms ranges about 30% of total. In other countries, their share lies at 10% or lower.[28]

On the other side, the number of large farms (most of them being non-individual) is almost negligible – only in Czech Republic and Slovakia, the share of farms above 100 ESU exceeds one per cent. Their significance in terms of economic size is of course rather opposite. Apart from above listed countries with a strong corporate farm sector, their economic significance is in a sharp contrast with negligible number in virtually all CEE countries.

[27] As a rule, most cited reports on agricultural transition in CEE (EC 1998; Csaki and Lerman 1999; Lerman and Csaki 2002) avoid presenting statistical data on farm size distribution. Rather, they refer to national statistical data and describe evolution of farm size distribution in qualitative terms.

[28] It has to be borne in mind that this discrepancy would be even higher if farm size structure would have been compared against the production structure of marketable agricultural output, for example gross agricultural output (GAO).

Table 7.2 Distribution of farms with reference to their economic size, and contribution to overall SGM by various size groups

	Total	Farms by economic size (ESU) in % of total number of farms						
		0-<2 ESU	2-< 4 ESU	4-< 8 ESU	8-<16 ESU	16-<40 ESU	40-<100 ESU	>100 ESU
	No. of farms							
Bulgaria	534,610	91.8%	4.9%	1.5%	0.7%	0.4%	0.3%	0.3%
Czech Republic	42,250	53.7%	12.3%	9.3%	7.8%	7.2%	4.0%	5.7%
Estonia	27,750	75.8%	11.6%	5.7%	2.9%	2.1%	1.0%	0.9%
Latvia	128,670	85.1%	8.4%	3.5%	1.7%	0.9%	0.3%	0.2%
Lithuania	252,950	79.3%	14.7%	3.6%	1.4%	0.7%	0.2%	0.2%
Hungary	714,790	87.0%	5.7%	3.6%	1.8%	1.2%	0.4%	0.3%
Poland	2,476,470	69.4%	11.8%	9.2%	6.0%	2.9%	0.5%	0.2%
Romania	4,256,150	91.0%	6.8%	1.5%	0.4%	0.2%	0.1%	0.0%
Slovenia	77,170	48.4%	24.8%	14.8%	7.7%	3.7%	0.5%	0.1%
Slovakia	68,490	90.2%	3.3%	1.8%	1.2%	1.2%	0.9%	1.5%
	ESU	*Contribution to overall SGM according to economic size (ESU)*						
Bulgaria	930,920	27.8%	7.6%	4.9%	4.6%	6.3%	10.8%	38.1%
Czech Republic	1,532,630	1.2%	1.0%	1.4%	2.5%	5.0%	6.9%	82.0%
Estonia	135,400	12.7%	6.6%	6.5%	6.7%	10.6%	13.5%	43.5%
Latvia	270,210	27.0%	11.0%	9.1%	8.9%	10.0%	8.7%	25.3%
Lithuania	552,280	31.7%	17.8%	8.8%	6.9%	7.7%	6.7%	20.4%
Hungary	1,912,560	14.2%	6.0%	7.4%	7.6%	10.6%	9.9%	44.2%
Poland	8,264,550	10.9%	10.1%	15.6%	19.9%	20.6%	8.9%	14.0%
Romania	4,700,060	49.3%	16.3%	7.3%	4.1%	3.9%	4.1%	14.9%
Slovenia	353,950	11.7%	15.1%	18.0%	18.7%	19.0%	6.7%	10.9%
Slovakia	519,200	5.7%	1.2%	1.3%	1.8%	3.9%	7.4%	78.8%

Source: Eurostat (2007)

Note: ESU = European Size Unit; SGM = Standard Gross Margin

Labour input, productivity. The CEE countries entered the transition with relatively high rates of agricultural employment (Table 7.3). The pre-transition share of agriculture in total employment varied from about 10% in the countries with the highest income per capita (Slovenia, Czech Republic), to over a quarter of total employment in Romania and Poland.

Same as other aspects of transition in agriculture, labour adjustment patterns have been diverse. Transition brought a sharp decline in agricultural employment to Czech Republic, Slovakia, Hungary, and Estonia. In contrast to this, agricultural employment even increased in some countries (Romania). Some countries sought increase of relative importance of agricultural labour in mid-1990s (Bulgaria, Lithuania), which can be, at least in a part, attributed to the 'transformational recession' in which the CEE countries found themselves in the first years of transition.[29] In general, labour outflow was considerably lower on

[29] There seem to be also problems with comparability of statistical data. This is best visible in the case of Slovenia with a sudden 'increase of agricultural labour in 2000, which is attributed solely to

individual farms than on corporate farms. Swinnen et al. (2005) attribute this to a combination of factors related to human capital, access to finance, and physical capital.

Swinnen et al. (2005) draw a distinction between two strands of literature describing determinants of agricultural labour adjustment. The first theory emphasizes the surplus of labour in agriculture as a result of the central planning system, subsidies, and controls on labour reallocation. The second theory focuses more on the transition process itself and argues how agriculture has played a buffer role during transition, absorbing labour laid off in other sector, as a source of income and social security during economic hardships of transition times.

Developing a theoretical model of different labour adjustment patterns during transition and analysing this empirically, Swinnen et al. (2005) found that the differences are due to variations in initial conditions and differences in reform policies and effects. The removal of price distortions and subsidies caused price and wage adjustments, which led to a reduction in labour demand in agriculture. Surplus labour outflow from agriculture was further stimulated by the privatisation of farm assets as they improve incentives for optimising factor allocation. The shift to individual farms, which was especially pronounced in labour-intensive production systems with low labour productivity of agriculture, has reduced the outflow from agriculture.

Table 7.3 Share of agriculture in total employment and GDP, in %

	1990		1997		2005	
	Employment	GDP	Employment	GDP	Employment	GDP
Bulgaria	17.9	18.0	23.3	26.2	8.9	9.4
Czech Republic	9.6	6.3	4.3	4.2	4.0	2.9
Estonia	12.0	13.9	8.0	7.1	5.3	3.7
Cyprus	…	…	…	4.0	4.7	2.9
Latvia	15.5	21.1	16.6	5.1	11.8	4.0
Lithuania	17.8	27.6	21.5	11.4	14.0	5.7
Hungary	17.9	14.5	8.1	5.9	4.9	4.3
Malta	…	…	…	2.8	2.0	2.8
Poland	26.4	8.3	19.8	6.6	17.4	4.6
Romania	28.2	21.2	39.7	18.5	32.3	9.6
Slovenia	8.4	4.2	5.6	4.1	9.1	2.5
Slovakia	12.0	7.4	8.9	5.3	4.7	4.3

Source: European Commission (2007)

As for labour productivity, Lerman et al. (2002) suggest that, in the absence of data on total factor productivity, a partial measure of productivity should be used, calculated as the ratio of agricultural output to agricultural labour. According to this data, agricultural labour productivity increased markedly and steadily. The improvement in agricultural labour productivity has been largely due to sharp reductions of agricultural employment,

methodological changes.

and less so due to growth of agricultural output. In the future, the ability to increase agricultural productivity depends from improving of land and factor markets (Deininger 2002).

8 METHODOLOGICAL RESEARCH APPROACH – COLLECTION OF PRIMARY DATA

Alastair Bailey, Gertrud Buchenrieder, Sophia Davidova, Lena Fredriksson, Matthew Gorton, Judith Möllers, Carmen Hubbard, Neil Ward[30]

SCARLED addresses a topic of wide interest with regard to the identification of past and future key social and farm restructuring processes for a living countryside in the NMS. Methodologically, the topic is approached by comparative, structured multi-country farm surveys. The surveys in the NMS will take place in Bulgaria, Hungary, Poland, Romania, and Slovenia. The data will be econometrically analysed with a specific focus on themes that are of utmost relevance for the agricultural sector and rural livelihoods (farm structure evolution, subsistence farming, co-operation among farmers, rural labour markets, income diversification). This will be complemented by an analysis of structural changes in the farm sectors of two selected regions with the agent-based simulation model AgriPoliS, taking special account of demographic changes.[31]

The comparative multi-country surveys rely heavily on WP4 'Design and implementation of a survey instrument'. The survey instrument to collect new, unique data on rural livelihoods, their engagement in different gainful activities, and barriers to commercialisation is designed in close cooperation with all project partners, particularly those in the NMS.

Often research on socio-economic and farm structure issues in the NMS excludes experience with rural development in the established Member States. We seek to avoid this short-sighted perspective by studying success stories of rural development in selected regions of five established Member States (i.e. Spain, Portugal and the new German *Bundesländer*) [32] and by analysing how previous accession processes have affected rural labour markets. This allows an improved understanding of past and anticipated rural restructuring processes to take place. Thus, SCARLED implements semi-structured expert interviews among relevant stakeholders in selected regions of five established Member States. The lessons learnt from the surveys in the NMS and the expert interviews in the established Member States are directly fed into the WP 9 ' Best practice lessons' of rural development and WP10 'Policy recommendation'.

Beside the lessons learnt on the basis of primary data, pertinent interrelationships are sought to be better understood on the basis of a panel data set of aggregated data in the rural economy of the NMS12. This is because policy makers at the EU-level need comparative, cross-country information about agricultural restructuring, labour adjustment needs and the creation of more economic opportunities. The database developed in WP3 'Socioeconomic, demographic and agricultural structures in the NMS12', will provide this information at a regional (NUTS3) level.

[30] The authors are in alphabetical order.

[31] This is relevant to WP5 'Farm structure evolution', WP6 'Subsistence farming and cooperation', and WP7 'Rural labour markets and diversification'.

[32] This is relevant to WP8 'Rural transition in selected EU15 regions' and WP9 'Best practice lessons' in the established Member States.

Furthermore, SCARLED intends to produce several methodological and theoretical improvements, which will contribute to the scientific base of decision-making in the European farm and non-farm sector:

- In many NMS farm restructuring is still at the core of rural economic development. In order to provide an appropriate tool for quantitative policy analyses, the microeconomic regional agent-based simulation model AgriPoliS will be further developed and applied to analyse the impact of policies and demographic developments of farm households on structural change in agriculture more realistically. The methodological framework for analysing farm exits and transfers will be improved.
- A methodological framework for studying the determinants of subsistence agriculture, including a non-separable agricultural household model, will be developed.
- Whereas it is commonly agreed that a lack of social capital hampers the co-operation of farmers (which is of particular importance for improving the competitiveness of small farms), social capital is difficult to measure. The methodological problems will be tackled by a country case study in SCARLED.
- As decision-making in farm-household systems, as well as in rural non-farm households, is subject to a large degree of uncertainty (regarding market developments and policy design), employment decisions are difficult to model and project. This methodological issue will be addressed by the introduction of Fuzzy theory.

8.1 Empirical research in the NMS[33]

Implementing a cross-country comparative survey in the NMS on a topic of high scientific and policy relevance is a promising endeavour. Admittedly, there are many more or less comparable cross-country surveys from the NMS accessible in the Internet, the best known of which is probably the Living Standard Measurement Study (LSMS) of the World Bank.[34] Nevertheless, while the LSMS surveys cover a much larger sample than the SCARLED surveys will do, they are more general surveys and not so much designed to specific and more probing research questions. Furthermore, while there is a relatively large consistency of questionnaire design, the surveys do mostly vary to some extent in terms of content and timing across different countries. This means that specific research questions can not be analysed so easily in a cross-country manner for any specific point in time. The SCARLED survey will provide comparable data for five NMS. The basis of analysis will be rural households[35] with and without farming activities.

Section 8.1 summarizes the sampling procedure for the empirical research in the NMS and the structure behind the rural household/farm survey.

[33] This section is designed within WP4 and fundamental for WP6 and WP7 (see Figure 1.1).

[34] The LSMS was established by the World Bank in 1980 to explore ways of improving the type and quality of household data. By now, over 60 LSMS surveys have been carried out in over 40 countries (http://www.worldbank.org/LSMS/, accessed in July 2007).

[35] A household is defined as an inseparable social unit living together, and could consist of a single person or several individuals, not necessarily related, who pool some, or all, of their income and wealth and who consume certain types of goods and services collectively, mainly housing and food.

8.1.1 Selection of regions and sampling frame for rural/farm households[36]

As a part of the SCARLED project, a survey of rural areas will be carried out in the selected NMS. The survey will be based on two questionnaires (see Section 8.1.2). The main questionnaire will survey rural farm households and jointly serve the research objectives of three WPs, namely WP5, 6 and 7: farm structure evolution; socio-economic functions of subsistence farming and co-operation among farmers; and rural labour markets and diversification of rural economies, respectively. A second questionnaire will cover the village level, capturing key statistics from the municipalities on village physical and market infrastructure, land and labour markets, public and private service provisions etc.

Rural farm household survey

For the rural farm household survey, regions and villages will be selected through a two-stage clustered sampling process. As a first step, three regions in each country will be selected according to their degree of economic development: (1) lagging behind, (2) average and (3) prosperous, corresponding to a GDP per capita below, average and higher than the national average. The survey targets rural areas, that is why the capital city and other large city regions will be excluded from the selection. The country average will be adjusted accordingly. Data from EUROSTAT at the NUTS3 level will be used as a first approximation for this selection.

In the second stage, three villages per NUTS3 region will be selected (again with a view to cover the variations within NUTS3 regions, namely a prosperous, average and lagging behind village in comparison to the regional average. As pointed out by Deaton (1997), this sampling design of first selecting clusters and then farms/households, has many advantages. First, it is very cost-effective since survey teams only will have to visit a few locations instead of visiting households dispersed all over a country. Second, clustered samples like this one also facilitate repeated visits. Third, clustered sampling serves very well investigations of pre-defined target groups, as in this case 'rural farm households'. For these reasons, clustered sample surveys have been widely used in developing country contexts. In the so far limited literature on subsistence farming in transition economies, similar selection procedures have been applied by Mathijs and Noev (2002) and Petrovici and Gorton (2005). Surveys with regard to the NFRE in Eastern European transition countries have also followed a similar sampling design (Möllers 2006).

The fact that the questionnaire is serving the objectives of three different workpackages raises the issue of whether the selection of households at the village level should be stratified or randomised. If stratified, what should be the criteria for a household's inclusion in, or exclusion from, the survey sample? The project proposal focuses mainly on farm households, those fully dependent on agriculture and those with diversified non-agricultural activities. These two types are in fact the predominant part of rural population in the NMS. A fully randomised sample may include a small number of households with no agricultural activity that will not allow for rigorous statistical analysis and in addition are of lower relevance to the objectives of the project. Therefore, only households which in two time points, the most recent year (2006/2007) and/or the last year before the accession to the EU (2003) were engaged in agricultural production, including from gardens or yards belonging to the house, will be included in the sample. A

[36] The responsible authors for this section are Sophia Davidova, Lena Fredriksson, Alastair Bailey, and Matthew Gorton.

household's participation in, or exclusion from the survey, will be determined by an entry question so that only households with agricultural production in either one or both reference points are included in the sample. In the end, this survey design will give a good representation of the prevalence of different types of farm households in the rural economies of the NMS. The sample will be representative for the continuum of rural farm households: from 100 per cent subsistence to 100 per cent commercial farm households, as well as farm households with other main gainful activities.

Normally, house gardens or yards cannot be traded separately without the house, and thus may have little relationship to structural change in agriculture. However, the production from these gardens may be important in the NMS in terms of welfare as an additional source of income, providing food security and a safety net.

The target sample size for each country is approximately 300 observations[37], meaning that 30-35 observations per village are needed. If this target cannot be reached, it is possible that the survey should extend to four villages per NUTS3 region lowering the survey target to 25 household observations per village. The person interviewed in the household should preferably be the household head, as this is the person who is assumed to know most about the household and also have the greatest influence regarding decision making within the household, especially as regards the orientation and diversification of household and farming activity.

Village characteristics. In each selected village, a separate questionnaire will be answered by a village representative/s. The aim of this questionnaire is to provide a picture of key village characteristics such as physical and market infrastructure, services, land market characteristics etc.

8.1.2 Design of questionnaire[38]

As explained in Section 8.1.1, the survey covering WPs 5, 6 and 7, will consist of two different questionnaires: one main farm household questionnaire and one complementary questionnaire at the village level. Pre-testing of the questionnaires is scheduled for early autumn 2007. The farm household questionnaire will be pre-tested by the partners concerned. The results and the experiences from the pre-testing will be reported in D.4.1 'Progress report: Design of questionnaire and experience from the pre-testing'.

The farm household questionnaire consists of a core set of sections that will be the same in all selected NMS. The core questionnaire will collect both quantitative and qualitative information. Information about the following broad issues will be collected through the core questionnaire (the list is not exhaustive):

- Household member characteristics
- Household income, employment and time allocation
- Agricultural land and non-land resources, production and sales

[37] Variations with regard to the sample size may occur, due to the national budget constraints.

[38] The responsible authors for this section are Sophia Davidova, Lena Fredriksson, Alastair Bailey, and Matthew Gorton.

- Household's perceptions of the present and future farming objectives; perceptions of drivers for and impediments to commercial agricultural activity; and perceptions for diversification to non-farm employment.

All sections may not be relevant to all farm households. A key objective is to capture switching cases, e.g. households who exited agricultural activities to undertake wage employment or establish their own non-farm businesses or who have moved from subsistence/semi-subsistence to commercial farming. Also successful cases of integration within the marketing food chain are of particular interest. The questionnaire is designed in a way to capture the characteristics of such households. A household's inclusion in, or exclusion from a section, will therefore be determined by switch questions. For example, households that have ceased to be involved in agricultural production since 2003, will be directed to a specific section which seeks to collect information on what factors have been influential in making the decision to give up agricultural production.

Besides the core questionnaire, there will be additional data collection in some countries in order to provide a deeper analysis of some relevant issues.

8.2 Success stories in the established Member States – Review of the methodological assessment[39]

WPs 8 and 9 will derive lessons from past EU enlargements. The 2004 and 2007 enlargements differ significantly from previous expansions of the EU, both in terms of the scale of accession and the nature of the political and institutional processes innolved. In the context of enlargement, agricultural and rural development policies play an important role. There is little doubt that accession to the EU and the adoption of the CAP and Rural Development Policy have an impact on people's livelihoods, particularly those who live in rural areas in new member states. The rural areas of what are now the EU-27 are very diverse in terms of territory, population, economic and social structures, and labour markets (European Commission 2006). It can be argued still that within the established member states (MS), the situation in rural areas is highly variable (Bryden 2003) and there is an uneven development of both rural and urban regions across the EU (Bryden et al. 1993; European Commission 1996; OECD 1996; European Commission 2001, Bryden and Hart 2004). Furthermore, in anticipation of accession the NMS have received EU support via a set of policy instruments (e.g. SAPARD and Phare)[40] which have already triggered structural changes in agriculture and rural livelihoods. Nevertheless, research, particularly on socio-economic and farm structure issues, on the NMS tends to exclude the experience with rural development among established Member States. Thus, lessons from past enlargements can still be learnt and experience from various successful Member States (e.g. Ireland) may help the new entrants to succeed more rapidly in the increasingly competitive environment of the EU.

The literature suggests the driving forces of economic performance of rural regions lie in the interplay between local, regional, national and global processes (e.g. Flynn and Marsden 1995; OECD 1996; Terluin 2003). The competition for rural resources by a variety

[39] This section sets out the methodological and conceptual basis for WP8 and WP9 (see Figure 1.1). The responsible authors for this section are Carmen Hubbard and Neil Ward.

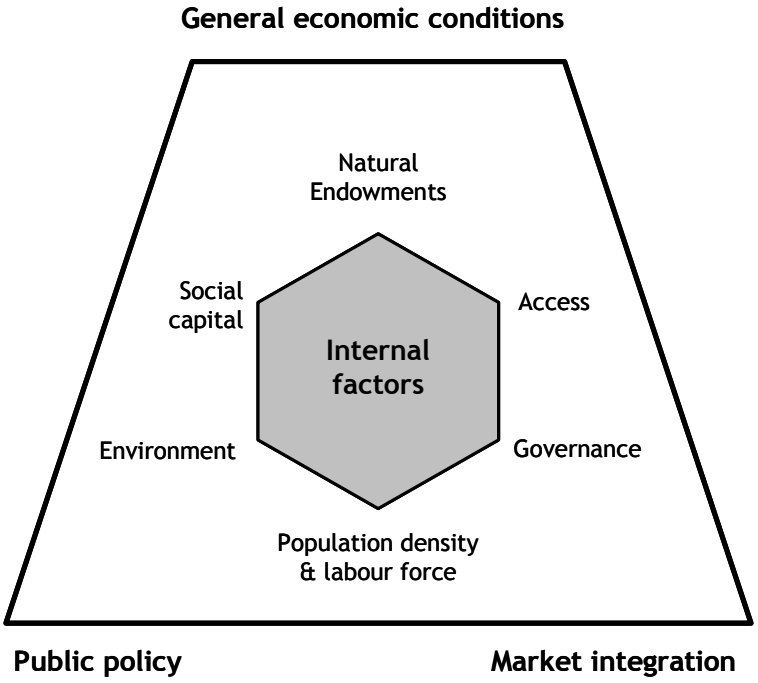
[40] Phare stands for 'Poland and Hungary: Aid for Restructuring of the Economies' and SAPARD stands for 'Special Accession Programme for Agriculture and Rural Development'.

of local (and external) actors has different implications in different places. The effects, however, are mainly depending on the aims and the magnitude of relationships between these players (Lowe et. al. 1993). Terluin (2003: 327) argues that "the image of rural Europe as … the scene of losses of population and jobs, largely associated with … a rapid decline in employment in a supposedly dominant agricultural sector" reflected in some literature (e.g. Bollman and Bryden 1997, European Commission 1997, Terluin and Post 2000) needs to be refined. Quoting Person and Westholm (1994), Terluin (2003) pictures rural Europe as a new mosaic of rural regions with winners, in-betweens, and losers.

Flynn and Lowe (1994) emphasised that the decline in importance of agriculture as a sector within rural areas alongside the restructuring process (in advanced countries) triggered, in various combinations, a complex new set of economic, social, political and cultural relationships. However, in the authors' view, these relationships are not necessarily dominated by economic parameters (e.g. the structure of local economy and employment) but also influenced by political and social factors.

In contrast, Cuddy (2005) highlights the 'creation of value added' within a sustainable and competitive market framework as the foundation of (economic) wellbeing in rural areas. He argues that the major problem of a rural economy lies in the "thinness or non-existence of markets" (e.g. labour, capital and goods and services), and "the imperfect performance of markets and information flows" (Cuddy 2005: 211). However, Cuddy (2005) consents that the rural space is a special type of geographic area to which a set of internal and external factors readily apply (Figure 8.1).

Figure 8.1 Factors influencing the market sustainability of rural communities



Source: Cuddy (2005)

The lack of accurate statistical information on rural areas is also highlighted by Tarditi (2000), as one of the factors which contributed to the slow adjustment of Italian agriculture. Tarditi (2000) stresses that after joining the European Community, Italy implemented probably the worst structural policy in Europe, with inadequate results for agricultural restructuring and rural development. He attributes the poor performance to both agricultural policy measures implemented by the regional and national authorities, and the local implementation of structural policy and rural development.

For a better understanding of the complexity of rural changes, Persson and Westholm (1994) focus on the identification of various needs and activities of major groups of rural inhabitants in Sweden. For each group the authors analysed and compared three major elements: (i) 'crucial resources'; (ii) 'leading policy'; (iii) 'collective networks and the functions of each group within the community'. A cluster of changes operating at different levels was identified with areas of similar economic conditions developing in divergent directions. This illustrates that economic variables alone are not sufficient; values, ideologies and cultural aspects are also important determinants of rural transformation. The authors emphasised that rural policies should not, however, be aimed at merely 'preserving structures from the past'.

Terluin (2003) provides a critical analysis of some of the relevant theories that conceptualise the triggers behind economic development in rural regions of advanced countries. Applying the method of pattern-matching to 18 case studies in 'leading' and 'lagging' rural regions in the EU, she shows that (i) the mixed exogenous/endogenous development approach, (ii) the community-led development theory, and (iii) the first hypothesis of Bryden's (2003) theory on the use of social and cultural capital are widely supported by empirical evidence.

Nonetheless, there is a debate amongst academic researchers in rural studies regarding the 'theories' or 'models' of economic development in rural regions and the role of rural development policy in stimulating economic growth in rural regions (Lowe et al. 1995; Cloke 1997; Ray 2001; Terluin 2003). The literature suggests three major approaches to rural development: (i) exogenous development approach; (ii) endogenous development approach and (iii) a neo-endogenous development approach (a mix of exogenous and endogenous development) (see Table 8.1).

Terluin's (2003) work originates in the RUREMPLO (Agricultural and Employment in the Rural Regions of the EU) project. This focused on employment performance and sought to identify the major factors that influenced job creation in 'leading' and 'lagging' EU rural areas. The distinction between 'leading' and 'lagging' rural regions was established by the number of non-agricultural jobs created in these regions. The study was based on endogenous and exogenous development theories, with a particular focus on the interaction between local and external forces. It combined a quantitative analysis of socio-economic characteristics for all EU regions between 1980 and 1990, with 18 case studies in 'leading' and 'lagging' rural areas in nine member states. The findings showed that there is no unique development pattern towards the creation of jobs but multiple development trajectories (Terluin and Post 1999).

Another project, DORA (Dynamics of Rural Areas), investigated the causes/factors of differential economic performance between rural areas which apparently possess similar economic, social and political conditions. The research was based on the hypothesis that the differential development of rural areas might be explained by the interaction of a combination of 'tangible' and 'intangible' factors and variables in specific local, regional and national contexts (Bryden and Hart 2004). Sixteen areas from four western countries (Scotland, Germany, Greece and Sweden) were analysed using a combination of

quantitative (primary) data and semi-structured interviews. Key factors were compared in two pairs of case-study areas for each country, one successful and the other less successful. The findings showed that the importance of different tangible and intangible factors varied between successful and less successful regions. Intangible factors, such as community and culture, networks, institutions and governance, linked to human resources (e.g. entrepreneurial qualities) and the 'ease of adaptation to the new political emphasis on market economy and devolved government' were crucial for the differential economic performance (Bryden and Hart 2004). Although there is no unique development pattern for successful rural areas in western countries, some potential lessons and inter-related factors that explain the differential economic performance are summarised in Figure 8.2.

Table 8.1 Approaches to rural development

	Exogenous development	Endogenous development	Neo-endogenous development
Key determinants	Economies of scale and concentration	Employing local resources (natural, human and capital)	The interaction between local and global forces
Dynamic force	Urban growth poles (drivers exogenous to rural areas)	Local initiative and enterprise	Globalisation, rapid technological change in communications and information Knowledge economy
Functions of rural areas	Food and primary products for expanding urban economies	Diverse service economies	Dynamic participation of local actors in local and external networks and development processes
Major rural development issues	Peripherality and low productivity	Limited capacity of areas/groups to participate in economic activity	Resources allocation and competitiveness in a global environment
Focus on rural development	Agriculture modernisation; encourage labour and capital mobility	Capacity building (skills, institutions, infrastructure); overcoming exclusion	Enhancing local capacity and actors participation to direct local and external forces to their benefit
Criticism	Dependent, distorted, destructive and dictated development	Not practical in contemporary Europe	Operates at a level of insufficient empirical evidence

Source: adapted from Ward et al. (2005)

A pan-European study – "The Nature of Rural Development: Towards a Sustainable Integrated Rural Policy in Europe"- led by the Institute for European Environmental Policy (IEEP) and Centre for Rural Economy (CRE) took place in 2000 to investigate rural development policies and practices in ten countries from whole Europe to improve understanding of approaches and experiences of rural development (Baldock et al. 2001). The study, the first of several supported by the World Wide Fund for Nature (WWF) and partners, aimed to develop a robust model for a sustainable and integrated rural development in the EU. As compared with previous projects, which focused particularly on a set of socio-economic indicators (e.g. employment) to define differential economic

performance in rural areas, this research had a novel focus on the role of actors, institutions and attitudes towards rural development policies. Attitudes and institutional behaviour were explored through a series of semi-structured interviews with key officials, stakeholders and experts. Workshops within each participant country brought together stakeholders and experts which commented on the national report. A synthesis report, providing a comparison across all countries, identified six areas of interest for rural development policy in Europe (Baldock et al. 2001):

(i) the driving forces for rural changes (i.e. economic, social, policy and environmental drivers);
(ii) institutions and institutional arrangements for advancing rural development;
(iii) the role of environment in rural development policies and outcomes;
(iv) the role of social values (e.g. participation and equity) in rural development;
(v) the urban-rural interface in rural development;
(vi) policy design , resourcing and delivery

Figure 8.2 RUREMPLO and DORA: Lessons and key factors for economic performance

RUREMPLO: Lessons	DORA: Inter-related factors
Job creation	Culture and society in the shift from state to market
- improvement of the capacity (skills, aptitude, knowledge) of local actors	
- a coherent territorial plan based on a SWOT analysis of the region	Peripherialty and infrastructure
- reinforcement of the cooperation of local actors inside and outside the area	Governance, public institutions and investment
Local resources	
- integration of investment in a wider development process	Entrepreneurship
- improvement of rural facilities/services	
Economic Activities	Economic Structures and Organisations
- a multi-sectoral approach by using both specialisation and diversification strategies	Human resources and demography
- supporting the integration of agriculture within the rural economy	
- enhancing facilities for new and small enterprises	
Actors involved	
- enhancing knowledge, skills, aptitudes	
- strengthen internal and external networks and attract new comers	
- encouraging part time labour and self-employment	

Source: Terluin and Post (1999); Bryden and Hurt (2004)
Note: SWOT = Strengths, Weaknesses, Opportunities, Threats

The findings illustrate that the development of rural areas across Europe is no doubt subject to highly diverse but specific economic, geographical and socio-cultural conditions with government structures (e.g. ministries of agriculture and environment) as key actor in developing and delivering rural development policy. Despite most countries following an 'Europeanised' approach to rural development, the EU policy goals are perceived differently amongst the EU nations and various approaches are applied at the local, regional and national levels. At the national level, however, each country tries to focus on their own concerns (e.g. agriculture modernisation, infrastructure development, rural economic diversification, social and economic cohesion, and landscape protection and management). The research also stresses the division of countries from agrarian and rural development perspectives (Figure 8.3), and the different emphases around whether rural space is mainly for 'production' or 'consumption/recreation'.

Figure 8.3 One rural world, two perceptions: Agrarian versus rural development

Agrarian	Rural development
• farmer's interests are the same as rural interest • multifunctionality of rural areas is a historical outcome of the traditional farming • viable rural areas depend upon farming activity, both economically and culturally	• local actors represent a broad range of interest according to their social affiliation and economic status • rural areas' multifunctionality is due to internal diversity and external expectations/pressures • a competitive farming sector is not always a prerequisite for viable rural areas

Source: Baldock et al. (2001)

To design and deliver rural policies both, 'top-down' and 'bottom-up' approaches were used across Europe, but a pattern of partial regionalisation with an oscillated local participation at various levels was distinctive. The study concluded that within the EU the Rural Development Regulation (RDR) was emerging as a significant policy instrument for rural development, but was designed to achieve different objectives in different parts of Europe.

The significance of the RDR within the creation of a model of sustainable rural development has influenced the WWF and the Land Use Policy Group (LUPG) to commission another study to a team coordinated by the IEEP and CRE between September 2001 and August 2002. This study built upon the previous one focused on the implementation of EU rural development policy instruments, particularly the RDR and SAPARD measures (Dwyer et al. 2002). The main objectives were: (i) to compare across thirteen EU countries (including three candidate countries) the approaches of various stakeholders (e.g. environmental, rural development and farming organisations) to planning, implementation and monitoring of RDR and SAPARD; (ii) to evaluate how these instruments deliver sustainable benefits from an economic, social and environmental point of view; and (iii) to promote examples of good practice. The complexity of the research and the involvement of a large number of countries as case studies requested the creation of an Agreed Common Framework (ACF) on which national reports were carried out. Moreover, a number of local and regional case studies were performed by the national teams. The methodology, although based mainly on a qualitative evaluation, combined secondary data with interviews with experts, officials and stakeholders. The findings stressed the

considerable potential of both instruments in the evolution of EU rural development. However, in both established Member States and the (then) candidate countries, the focus remained on agriculture, and the resources fell far short of needs, particularly with regards to rural environment and sustainable development of marginal areas. There are significant national differences in the patterns of expenditures, and often similar-sounding strategic aims for sustainable development were translated in rather different models of implementation depending mainly on past experience with domestic and EU funding programmes. There are also differences between countries who seen the RDR as a tool to promote environmental land management and those who focused on agriculture modernisation. Although the RDR is considered an innovative and ambitious instrument, which requires skills and imagination, the study emphasis the importance of supporting technical assistance, capacity building and facilitation in the development and delivery of effective rural programmes.

Synthesising, in the literature there is neither a single exclusive model nor technique behind the driving forces of rural development, but multiple development trajectories resulting from various combination of local, regional, national and global forces in specific circumstances. With regards to methodology, beyond simple statistics and official data there is a need to understand perceptions of various actors with regards to different factors and processes, and the magnitude of interaction between them. Despite the significance of economic and social variables that prevail in most of rural economic studies, there is a need for a better understanding of 'intangible' factors such as traditions and community, networks, institutions and governance.

Based on the existing literature and the presented Common Methodological Framework, the study of the success stories in rural development in the established Member States will follow the outline in Box 8.1.The five cases studies have a particular focus on the national level and one selected region. The same focused questions will be used to allow cross-countries comparisons. The research involves descriptive analysis (of socio-economic, agricultural and rural development conditions) based on documentary and secondary statistical sources and where possible personal interviews/telephone consultations with key actors (e.g. relevant government and public sector officials, key interest groups, non-governmental organisations and academic/policy experts in the field). The case study reports will be produced for: Ireland (acceded in 1973), Spain (1986), Germany's Eastern Länder (1990), Sweden (1995) and Austria (1995).

Box 8.1 Common methodological framework (CMF) for the analysis of rural development in established Member States of the EU

1. Introduction

- Briefly set the historical scene for accession and summarise the key features of the rural areas and rural changes
- Summarise the national picture (rural) in terms of main socio-economic indicators of the country since accession (e.g. population, GDP, GDP per capita, employment, structure of the economy and foreign direct investment).

2. Characterizing agricultural and rural conditions before and after accession and identifying national key features of rural transformation/changes

- Importance of agriculture (and forestry) within the economy (e.g. contribution to national GDP and employment, agricultural area, % of food expenditure of total expenditure)
- Agricultural production and land use (e.g. agricultural output evolution, structure of agricultural output)
- Farm structure (e.g. number of farms of different types: by size class, enterprise mix; % of total number, % of total Utilised Arable Area, % of agricultural output)
- Rural population, employment & income levels
- Rural population, employment & income levels
- Rural population, employment & income levels
- Sectoral composition of the rural workforce
- Extent of pluriactivity (e.g. multiple income sources for farming households)
- Approaches to rural development: defining rural areas within the national context, different perspectives at national level (e.g. agriculture versus rural development), rural-urban interface.

3. Most significant policy measures to manage socio-economic changes in rural areas

Summary description of key relevant national, regional and EU policies that have influenced rural changes since accession to the EU (e.g. social welfare policy; infrastructure; structural funds, spatial planning, agricultural and rural development polices, and environmental concerns etc).

Have agricultural/rural development measures played a distinctive role in the "success" story of the country as a whole or there are other elements too which contributed to and need to be mentioned?

Key policy measures

- Pillar 1 and Commodity Market Organisations (CMOs)
- Agricultural structures measures (e.g. early retirement, young farmers, investment in agricultural holdings, LFA)
- Agri-environmental measures
- Rural Development measures (Art 33 and LEADER)
- Regional cohesion /spatial planning
- Macro-economic measures

Box 8.1 continued

4. Particular experience in one case study region per country

This should follow Section 2 and 3, with a particular focus on those policy measures most relevant for the region.

Key Factor

- Agricultural land and land use
- Farm structure: (e.g. number of farms of different types: by size, enterprise mix, ownership)
- Rural population, employment & income levels
- Farming's % of rural employment
- Extent of pluriactivity (multiple income sources for farming households)
- Sectoral composition of the rural workforce
- Driving forces for rural changes (e.g. policy measures, market forces, environmental concerns)

5. Success Factors in Managing Rural Changes since EU Accession

- Systematically comment on and evaluate the success of the identified (national, sub-national and/or EU) policies measures with a positive impact on rural areas
- Identifying some factors of "success" which influenced positive changes in rural areas since EU membership.
- Summarising and debating what are the driving forces/factors that have had a positive impact on rural areas and why they are considered to be a 'success'.

6. Conclusions

Were 'successes' since EU membership (at the national level and the selected region) the result of conscious and dedicated (national/sub-national and/or EU) policy measures or the unanticipated consequences of other trends and factors?

Why focusing on national level and one region per country?

Undoubtedly, previous accessions to the EU affected the development of the EU polices, particularly on agricultural and rural development measures. These further had an impact on the socio-economic, agricultural and rural development conditions of the acceding countries. Hence, to identify patterns and lessons for best practice (of previous accessions) it is important to understand what happened at the national level in each case study.

Each country has its own specific rural characteristics, institutions and political systems and, as the countries chosen as case studies joined the EU at different time and level of CAP progress and rural development, their national experience with regards to agricultural structural changes and rural development transformation since accession to the EU will assist in drawing conclusions about the success or otherwise of measures to manage agricultural and rural transformations.

Analysis at the national level provides a benchmark for each country against which regional variations can be compared (in this case just one successful region). Choosing two regions within a country, without a focus on the national level, will somewhat limit the analysis to how these two regions will relate to each other, and risk missing on the comparison between the region and the national picture. The analysis of the national level and one region within the country will therefore ease the cross-country analysis.

The allocation of resources and the distribution to various levels is decided by the central governments (Keating 1999). Hence different governments imply distinctive resources

allocation. Moreover, the economic stability for both rural and urban areas is established through macro-economic policies (Terluin 2003).

Often research, particularly on socio-economic and farm structure issues on the NMS, excludes experience with rural development in established Member States. Thus, by identifying national key features of rural changes and the most significant policy measures to manage socio-economic changes in rural areas since accession to the EU, analysis of the national level will add to this rather limited literature.

9 CONCLUDING REMARKS

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Structural change in agriculture, let alone in rural economies, is a complex phenomenon. Structural change affects rural livelihoods through changes in agricultural productivity and profitability and in wider rural labour markets. There is little consensus on how to judge structural change. For instance, efficiency-increasing structural change, in terms of a better allocation of resources, might be desirable from a pure economic point of view. Yet, the loss in labour productivity among smaller-scale, part-time farm households may make them losers, especially if the wider rural labour market is weak. Furthermore, some argue, it is the smaller-scale subsistence and (semi-)susbistence farming households that contribute most to a living countryside. Whatever the effects of structural change in agriculture and rural livelihoods are and how might be judged, it is crucial to better understand the factors driving structural change and their interactions. Understanding the origins and dimensions of structural change is important to maintain a minimum level of social security for the losers from change. Often these are the semi-subsistence farm households.

Although large corporate farms continue to dominate agriculture, a downsizing can be observed since 1990. Overall, heterogeneity of farm structures in CEE countries has increased. Agriculture in the majority of CEE countries remains characterised by a highly dualistic operational structure (while a small number of farms produce most of agricultural output). At present, despite the fact that small-scale farms represent the majority of farms in the NMS of the EU, not much is known about their motivation, objectives and reactions in the light of market and policy signals and about the role of subsistence income to household welfare. However, without an understanding the reasons for the persistence of small farm sizes and subsistence, it is not possible to design effective policies aiming either at allowing agricultural households to exit farming or to move towards reasonable market integration. Therefore, rural livelihoods are rather approached analytically by a comprehensive than a specialized or sectoral approach.

If smaller-scale, part-time farm households (often semi-subsistence farms) cannot complement aggregate household income through non-farm rural employment (or public transfer payments), then livelihoods are at stake. In this context, it is of utmost importance to better understand the functioning of rural labour markets and the rural household decision making processes with regard to employment diversification.

Undoubtedly, the rural non-farm economy is crucial for successful rural development. It has a high potential to absorb social hardship from structural adjustment processes in agriculture, reduce overall rural poverty and thus keep the necessary structural change in agriculture going. Although, rural employment diversification is a widespread phenomenon in rural areas of the NMS, there is a lack of comparative cross-country information, its functions and effects on farm/rural households as well as its drivers and constraints. The conceptual basis to analytically capture rural employment shifts due to structural change in agriculture and other drivers of employment diversification recognizes that utility maximization overrides the income maximization function of multi-person households.

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Our literature review suggests that the livelihood concept appears to be well suited for the analysis of multi-person farm households or more general rural livelihoods and their interaction with structural change in the rural economy, particularly agriculture. The livelihoods approach deals with people, their assets (physical, human, natural, financial, and social capital assets) and the subsequent strategies to achieve certain outcomes. Livelihoods with effective social networks in the form of cooperation can increase their total pay-off by compensating, for instance for the lack of other assets. The way in which social networks influence rural livelihoods and structural change is not yet well understood. When considering livelihood strategies, it is important to recognize that people compete (for jobs, networks, natural resources, policy transfers, etc.), which makes it difficult for everyone to achieve simultaneous improvements.

Rural development policies should draw from both, detailed information on the motivation of rural people as well as information on earlier rural transition success stories. Even though the latter depend on specific historical, geographical and sectoral contexts there is much to be learned for the NMS12. Success factors that led to rural growth for example in Ireland, Spain or the German New *Bundesländer* might arise from consciously planned rural intervention measures; others not. Certainly the interaction of local and global forces (territorial dynamics, human dynamics, and globalisation) needs to be studied, but local resources and actors are essential, too. How rural success stories develop from intrinsic assets or intangible factors in rural areas such as culture, traditions and community, networks, institutions and government needs better consideration. Based on country and region specific information appropriate policies can be chosen, adopted, and implemented.

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