

ÚSTAV ZEMĚDĚLSKÝCH A POTRAVINÁŘSKÝCH INFORMACÍ

# ZEMĚDĚLSKÁ EKONOMIKA

## Agricultural Economics

ČESKÁ AKADEMIE ZEMĚDĚLSKÝCH VĚD

**10 - 11**

ROČNÍK 41 (LXVIII)  
PRAHA  
říjen-listopad 1995  
CS ISSN 0139-570X

Mezinárodní vědecký časopis vydávaný z pověření České akademie zemědělských věd a s podporou Ministerstva zemědělství České republiky

An international journal published by the Czech Academy of Agricultural Sciences and with the promotion of the Ministry of Agriculture of the Czech Republic

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**Periodicita:** Časopis vychází měsíčně (12x ročně), ročník 41 vychází v roce 1995.

**Přijímání rukopisů:** Rukopisy ve dvou vyhotoveních je třeba zaslat na adresu redakce: Mgr. Alena Rottová, vedoucí redaktorka, Ústav zemědělských a potravinářských informací, Slezská 7, 120 56 Praha 2, tel.: 02/25 75 41–9, fax: 02/25 70 90, e-mail: braun@uzpi.agrec.cz. Den doručení rukopisu do redakce je publikován jako datum přijetí k publikaci.

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**Periodicity:** The journal is published monthly (12 issues per year), Volume 41 appearing in 1995.

**Acceptance of manuscripts:** Two copies of manuscript should be addressed to: Mgr. Alena Rottová, editor-in-chief, Institute of Agricultural and Food Information, Slezská 7, 120 56 Praha 2, tel.: 02/25 75 41–9, fax: 02/25 70 90, e-mail: braun@uzpi.agrec.cz. The day the manuscript reaches the editor for the first time is given upon publication as the date of reception.

**Subscription information:** Subscription orders can be entered only by calendar year (January–December) and should be sent to: Institute of Agricultural and Food Information, Slezská 7, 120 56 Praha 2. Subscription price for 1995 is 118 USD (Europe), 123 USD (overseas).

# CULTURAL SPECIFICITY OF SUSTAINABLE AGRICULTURE A COMPARISON OF CHINA AND WEST EUROPE<sup>1</sup>

## KULTURNÍ ZVLÁŠTNOSTI TRVALE UDRŽITELNÉHO ZEMĚDĚLSTVÍ: SROVNÁNÍ ČÍNY A ZÁPADNÍ EVROPY

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**ABSTRACT:** Sustainable agriculture is the paradigm of the total process of sustainable development which has become a global idea for environmentally sound production and resource use. Universal concepts like sustainable agriculture or low-external-input-agriculture have to be unfolded within the frameworks of differing socio-cultural systems by making use of ecological knowledge and locally adapted production methods, as well as differing local cultures. We can look at agricultural development in term of two macro-cultural systems – the Chinese and the occidental, in the case, wester European. On this basis, we can trace the pathways of sustainable agricultural development. In this paper, the courses of agricultural modernization in the 20th century are analyzed; new forms of sustainable agriculture resulting from these processes are compared, and the requisite institutional and economic change in rural communities are discussed.

sustainable agriculture, sustainable development, socio-cultural system

**ABSTRAKT:** Trvale udržitelné zemědělství je paradigmatem celkového procesu trvale udržitelného rozvoje, který se stal globální ideou výroby a využití zdrojů odpovídajících potřebám zdravého životního prostředí. Univerzálně platné koncepty, jako je trvale udržitelné zemědělství nebo zemědělství s nízkými externími vstupy, se musí v rámci rozdílných sociokulturních systémů rozvíjet s využitím ekologických znalostí a lokálně přizpůsobených produkčních metod a stejně tak i rozdílných lokálních kultur. Zemědělský rozvoj můžeme porovnat v rámci dvou makrokulturních systémů – čínského a západního, v tomto případě západoevropského. Na tomto základě můžeme sledovat cesty rozvoje trvale udržitelného zemědělství. V práci jsou analyzovány směry modernizace zemědělství ve 20.století, komparovány nové formy trvale udržitelného zemědělství z těchto procesů rezultující a probírány nezbytné institucionální a ekonomické změny v rurálních komunitách.

trvale udržitelné zemědělství, trvale udržitelný rozvoj, sociokulturní systémy

“At present the sustainability community has not been able to advance a program of institutional innovation or reform that can provide a credible guide to organization of sustainable societies. We have yet to design the institutions that can assure intergenerational equity” (Ruttan 1994, p. 217).

### CONCEPT OF SUSTAINABLE AGRICULTURE

Most sustainability thought has not given much attention to the social imbeddedness of sustainable development beyond the implicit assumption that sustainable development is always based on a harmony of ecologi-

cal and social development, even when it can only be attained through conflictual political processes. The preponderance of natural scientific ecology, which produces the corpus of scientific knowledge on sustainable agricultural production, is accompanied by a reduction of sustainability to the biological, physical, and chemical dimensions of agricultural production. Thus, two variants of sustainable agriculture preponderate,

(a) an abstract, resource-optimizing production system based on complicated scientific knowledge which determines how the productivity of agriculture can be maintained in the face of stress or shock<sup>3</sup>, and, alternatively,

<sup>1</sup> Paper presented of the XVth Congress of the Rural Sociology, Prague, 31 July–4 August, 1995

<sup>2</sup> The authors owe special thanks to Prof. Bernhard Glaeser, Berlin and Göteborg, for his information and comments in his preparation of this paper.

(b) the marginal agricultural movements called organic or eco-farming which claims to be rooted in traditional, local knowledge.

Both variants do not cover the manifold forms of sustainable agriculture that evolved historically in many countries within specific socio-cultural context. In these contexts agriculture was never solely production related: production has always been a part of the social structure and there is no reason to suppose that sustainable agriculture can be conceptualized without relating it to social and cultural context of agriculture (cf. Smil 1993, Redclift, Woodgate 1994).

### Sustainability and culture

The concepts of culture and sustainability have a broad meaning and are used as imprecise terms in everyday and scientific communication. The concept will not be specified here by a new definition – only the starting points of discussion are described<sup>3</sup>.

The concept of culture proposed here is similar to that used in cultural anthropology, known as cultural ecology or the socio-cultural analysis of local societal accommodation to environment (cf. Steward 1977). In the cultural ecology approach, culture includes a set of integrated cultural values, social norms, orientations, practices, techniques and rules for the use of natural resources in agricultural and other economic production processes. The rules for resource use can be clustered in distinctive social practices which guide the development process and can be described in terms of culture specific practices<sup>4</sup>. Those instances of social practice related to agriculture evolving with historical agricultural practice can be called local agrarian culture.

The analysis of interaction between society and nature at local levels is designed to determine the conditions for successful adaptation to the ecological environment. Such an analysis is done holistically. The unifying knowledge can be described as a rule or institutional system of social and technical norms for the integration of local society and local environment. It can also be formulated as a set of conditions to be met in sustainable agriculture. Agriculture can be seen as the paradigm of social activity organizing the interaction between nature and society<sup>6</sup>.

Sustainability is usually understood as persistence of a production system over time under conditions of stress, as said above. The global framework for the discourse on sustainable agricultural and rural development is the discussion after 1992 Rio Conference, in "Agenda 21" and other documents, e.g. the NGO (Non-governmental Organizations)-treaty on sustainable agriculture. In this treaty, sustainable agriculture is defined as ecologically, economically, socially and culturally adapted and sound, that is, using a broad concept, including non-ecological components as well. These and other political documents – especially the regional adaptations and operationalizations of sustainable development plans, e.g. "China's Agenda 21" (1994) or "Sustainable Germany" – deal extensively with agriculture in global, national, regional and local frameworks. The idea of sustainability is always a broad one, entering political discourse as a set of normative premises and postulates. Very divergent and contradicting approaches and technologies have been subsumed under sustainable agriculture without evoking a debate on the compatibility of these approaches.

### Sustainability in global contexts

The lowest common denominator in the sustainable debate in the post-Rio process can be described as follows:

- Sustainable agriculture is an alternative path to the dominant modernization process in agriculture under the green revolution and modern, specialized intensive agriculture. The alternative can be described in a variety of approaches for reducing inputs, using adapted technologies and regenerative energies and strengthening the role of farmers.
- Sustainable agriculture is not just agriculture supported by marginal ecological movements like the organic farming movement and a socially accepted set of agricultural techniques. Furthermore, the following components become essentials of sustainable agriculture: poverty alleviation, participatory development, cultural diversity as well as bio-diversity, energy saving, reduction of greenhouse gas emissions and, as the most difficult process component, change of agricultural institutions from land tenure systems to agricultural markets – a coherent set of

3 "The stress may be growing salinity, erosion or debt that is a frequent, sometime continuous, relatively small predictable force having a large cumulative effect." (Conway, Barbier 1998, p. 653)

4 We start with some general concepts, follow the historical and social development of two different societies and try to find a concept of sustainable agriculture through comparative analysis. This paper was prepared of a discussion for future comparative research. It is not based on a single research project, hence its generic character. Since there are no sociological studies on sustainable agriculture in China, we refer mainly to the agronomic case studies and examples presented in Chen g Xu, Shi Yu an chun 1994.

5 Following this approach, culture has a broader meaning that in sociological concepts according to the Weber-Parsons traditions where it means a framework of symbolic values guiding social action and is constructed under a functional perspective as a social-integrative corpus of normative knowledge.

6 The application of cultural ecological analysis to present-day developed societies is still not advanced, but there have been some recent attempts (cf. Bruckmeier 1992, pp. 278). Cultural ecology was developed from the study of pre-industrial, non-western agricultural societies.

institutions is required which allows farmers to produce continually without ecological or economic stress. This broader concept includes societal, economic and ecological dimensions. Epistemologically the integration of knowledge from social and natural sciences in a co-evolutionary view is required. Various levels of development, local, national and global, have to be integrated to overcome the "limits of national development"<sup>7</sup> from which many present environmental problems result.

The points mentioned so far will be accepted by most protagonists of eco-farming, but there are some more in the UNCED-documents on sustainable agriculture which are highly controversial among environmentalists: UNCED-documents favor "integrated pest management", and there is some hope set in biotechnology<sup>8</sup>. Whereas the post-Rio agenda for sustainable agriculture and rural development (SARD) is still being outlined, the global movement for law external input agriculture (LEIA) has already build up transfer network to practice sustainable agriculture at regional and local levels (LEIA is a flexible concept and an "action oriented" one which allows adaptation to regional and cultural specificities of agriculture, based on regional experience). Within this network the inter-cultural communication and change of experience on sustainable agriculture are organized already.

Beyond the level of natural-scientific and technical criteria for sustainability which also dominate in the discussion of LEIA and LEISA (soil conservation, water use, fertilization, etc.)<sup>9</sup>, there are socio-cultural factors of sustainable agriculture. Sustainable agriculture as well as sustainable development in general requires constant societal and institutional support and institutional change to meet the changing demographic, economic and social conditions. This social accommodation of sustainable development is more complicated but more important than the ecological adaptation. It is the unsolved problem in most developing and industrial countries.

## AGRICULTURAL DEVELOPMENT IN EAST ASIA: CHINA

### Sustainable agriculture in history

Throughout the history of Chinese and East Asian agriculture there have existed sustainable agricultural systems which are in use until today. A well-known historical example of sustainable agriculture of East Asian origin is traditional wet rice cultivation<sup>10</sup>. The socio-economic as well as the technological basis for the development of agriculture was rather constant. Agriculture in China through the last two thousand years before the socialist revolution has been based on private, very unequally distributed property of land. The agricultural technology and energy systems hardly changed. The transport systems did not allow exchange beyond local dimension. Like in all traditional societies, economy and market were "inbedded" (Polanyi 1970) in a wider range of social systems and cultural rules. Western colonialism reached China only in the small coastal zones, mainly after the opium war in 1840, and it had hardly any influence on its agriculture and rural development which kept its traditional forms until 1949<sup>11</sup>.

The history of Chinese agriculture gives a broad range of regionally differentiated and ecologically adapted production systems which have been successful under pressure of large and growing population. Since long, Chinese peasants have been producing in situations where unfavorable natural conditions and scarce agricultural resources, especially scarce arable land, exercised pressure to optimize production systems. This fostered the development of sustainable systems. Agricultural production with limited land and a large population was supported by a socio-cultural element, the solidarity of peasants (cf. Bettelheim, Marchisio, Charriere 1969, p. 13 sq.), which was a necessary although not sufficient condition for the success of traditional Chinese agriculture. In economic terms, this success as one of the world's most

7 Smil 1993a uses this formulation as sub-title.

8 In chapter 16 of "Agenda 21" the agricultural issues are described (Bunzel 1994).

9 The natural scientific requirements of sustainable agriculture, e.g. of natural resource use, can be summarized as follows: "Farming in a sustainable manner cannot be done without respecting the limitations of particular agroecosystems, and without always preserving and preferably enhancing their critical environmental services rather than merely extracting their goods. These two grand strategies have the common denominator of diversification: in matching various crops with suitable growing conditions, in avoiding monocultures, in regularly inserting nitrogen-fixing legumes into cultivation cycles, in maximizing the recycling of organic wastes, in taking advantage of agroforestry benefits, in combining staple grain production with local animal husbandry aquaculture, and apiculture, and in finding appropriate uses (be it grazing, agroforestry, wood production, or permanent tree cover for lands not suitable for field farming." (Smil 1993a, p. 180).

10 Cf. Hayami and Ruttan (1985, pp. 280-298) and Ruttan (1994, p. 211) for the main characteristics of this production system, which gives an example of slow but continuous rise of yields also in a monoculture system. The main characteristic was the recycling of produced biomass. Mineral nutrients and organic matter were carried to the fields together with irrigation water.

11 Cf. Hesse (1992, p. 208), Polanyi (1970, p. 189f): The decisive difference to the modern capitalist market economy is the lack of price-defining markets. Towards the end of traditional society, in the 1930s, 40% of rural population have been proprietors, 25% partial proprietors and 29% leaseholders; landlords and large peasants (together 5% of total population) with more than 6 ha of land owned 43 % of the cultivated land; middle size peasant with 0.8-6 ha land counted about 50% of the population and poor peasants with than 0.8 ha 45% of the total population (cf. Kraus 1979, p. 29).

productive agricultures was based on a gradual intensification of land use of two agricultural inputs: recycling of part of the cultivated or collected biomass and higher labour inputs (cf. Smil 1993a, p. 36f; Debeir, Deléage, Heméry 1989, p. 81ff).

The ecological sustainability of Chinese traditional agriculture is based on complete integration of energy production into agricultural work. There is also a long experience of experiments with variants of organic farming<sup>12</sup>. The common elements of China's traditional agriculture included the following characteristics:

- substitution of intensive labour for the limited arable land;
- innovation of cropping patterns and farming systems to allow for multiple cropping and make better use of the growing season;
- a set of drought farming techniques that can make full use of low rainfall;
- advanced field irrigation and water conservation engineering.

The common quality of these techniques is the substitution of relatively ample resources (particularly labour resource) for rare agricultural resources (cf. Chen Xu 1994, p. 407f). From this experience basis of many generations of Chinese farmers the present experiments to develop sustainable agricultural systems can be derived.

### Modernization

A specific characteristic of agricultural development in China, high labour input, was already a constant element in rural history and has not changed until today (cf. Wang Weiji 1992, p. 57). Also after the socialist revolution in 1949 agricultural development was not accompanied by a rapid decrease of agricultural labour force (a main development pattern of Western, capitalist modernization). Although a relative decrease

of rural population from 90% in 1949 to 81% in 1979 is reported, the rural labour force has nearly doubled in absolute terms during these decades (from 165 to 306 million workers; cf. Chonchol 1986, p. 27). During the three decades of collectivization (1949–1978) environmental degradation has progressed rapidly as a consequence of deforestation and transfer of grassland into arable land, with rapidly increasing erosion. Experience based indigenous ecological knowledge which exists for many agro-ecosystems (cf. for example Yu Kongjian 1991) was often neglected<sup>13</sup>. Modernization of Chinese agriculture did not start before the 1960s with the introduction of high-yield varieties and increased use of agrochemicals (cf. Cheng Xu 1994, p. 408). A new development path was opened from 1978 onwards – decollectivization and strengthening of the responsibility of peasant families (cf. Chonchol 1986, p. 33; Findlay, Martin, Watson 1993, p. 15ff). This institutional reform was a late successful example of raising agricultural production and improving the status of agriculture within a rapidly modernizing economy.

The introduction of family contracts for production meant a de-facto privatization in agriculture; the only difference to private property remained that farmland could not be sold. The system may be called a patriarchal rural economy<sup>14</sup>; it resembles the one in existence during the New Economic Policy (NEP) in the Soviet Union in the 1920s (cf. Park 1986), although NEP was a policy following a severe food and economic crisis and did not indicate a transition to private and capitalist forms – both conditions being the reverse in China. The reform process has not simplified the process of achieving sustainability: This has become more difficult under conditions of fragmented use right and increased use of agrochemicals with new environmental problems<sup>15</sup>.

Present environmental problems of agriculture are the poor quality of arable land and grassland, the small forest cover and the continuing degradation of these

12 Cf. King 1968; Cheng Xu and Simpson 1989. For descriptions of the agricultural systems and the agricultural advances of China see the writings of Joseph Needham, esp. (1984). From the point of view of the development of energy systems, Chinese agriculture is analyzed in Debeir, Deléage, Heméry 1989, p. 80ff. For the development of agricultural ecosystems in Chinese history cf. Hu Angang, Zou Ping 1991, p. 50ff.

13 In this period falls a hard food production crisis in the 1950s, only minor environmental improvement as a reaction to overexploitation of natural resources in history, but also fundamental ecological destructions during the "Great Leap Forward" in 1958 and during the Cultural Revolution (1966–1976); cf. Wang Weiji 1992, p. 32. During the last thirty years one third of arable land has been lost through erosion and desertification and today also pollution of soil and water with agrochemicals is reported (cf. Glaeser 1994; Ross 1988).

14 The land is owned by the villages now and contracted to peasant households. "One of the most important policy reasons for the stable growth of agriculture production in China is the practice of returning the decision-making power to individual farmers while remaining a socialist economic system of public ownership. A household-based responsibility system has been introduced, under which the rights of the public-owned land are divided among the individual farmers' households; according to the contract made between the farmers and villages, after having fulfilled delivery obligation of farm produce to the state, to make some contribution to the villages and other purposes, farmers can keep the remained. Both the advantages of collective economy and the household-based management have promoted farmers to make the production arrangement according to the local conditions, and overcome the shortcomings of improper centralization." (Office of National Agro-Regional Planning Committee, 1992).

15 "At any rate, in the post-commune system of privatized farming, collective assets passing into private hands has produced some prosperity, while large-scale ecological projects have fallen into decay, class differentiation is reappearing, and a get rich quick mentality has shifted decision making away from sustainable models." (Haila, Levins 1992, p. 178); cf. Glaeser 1994, p. 9f; Wang Weiji 1992, p. 32; Hu Angang, Yi 1991.

resources (cf. Smil 1993a, p. 52ff for more details). Although the natural resources are distributed regionally very unequally and land productivity as well as resource carrying capacity vary from region to region, China quickly comes to an excess of total agricultural carrying capacity with continuing population growth being a major determinant<sup>16</sup>.

China's agriculture by continuing in the labour intensive production throughout this century has followed a development path which – in economic terms – is one of the rare examples of temporary successful counter-models of Western agricultural modernization. Such an example could contribute to find alternative development approaches for most developing countries, and also help to find models for sustainable agriculture in economical terms. In turns attention to a new discussion of the economic dogma of mainstream (Western) economics which seems to have built successfully on the substitution of labour by technology and capital<sup>17</sup>. Rural development is also the focus of present Chinese modernization policy and industrialization based on decentralization and small scale rural enterprises (non-agricultural enterprises or "township enterprises"; cf. Findlay, Martin, Watson 1993, p. 36f). However, this process becomes rapidly conflictful with the changes in rural economy and the adaptation to market structures.

#### Sustainability and ecological crisis

A generic model of sustainable agriculture and rural development originated in the late 1970s as a scientific concept, supported by a minority of critical agricultural scientists. This model became to be known as "Chinese Ecological Agriculture" (or CEA; cf. Cheng Xu 1994; National Environmental Protection Agency 1991) and has been practiced gradually, via experimental stations, in the 1980s. It is based on a social organization of farming with heterogeneous components: the family, the household, the co-operative and the village. The four elements are part of an autochthonous social system which develops without exogenous influence. Which one of the organizational factors is most favourable for sustainable agriculture cannot be said precisely, although it seems that the approach to include villages – not only single families or farms – in the development process is a specific efficient approach

which makes advantage of the present transition situation. Elements of the former collective organization (e.g. sharing of machinery and services which formerly have been organized by the commune) and the new household farming (e.g. increased production incentives to farmers and reduction of management costs) can be combined.

As an alternative to conventional modernization based on high input agriculture, the following elements of Chinese sustainable agriculture can be identified in the present experiment (which are also supported by government policies):

- control and stabilization of the agro-ecological environment (e.g. erosion control, afforestation);
- optimizing agricultural inputs at local levels (stabilizing high yields and ecological basis of production);
- building of bases for processing of agricultural products;
- collective and household management system with decentralization;
- diversification (combination of crop production, forestry, animal husbandry, fishing);
- introduction of marketing mechanisms;
- integration of agricultural development and poverty relief;
- promotion of agriculture through education, science and technology;
- extension of technologies and methods favourable to sustainable agriculture;
- enlarging international exchange and cooperation;
- legal guarantees and stabilization of the institutional system.

(Cf. Office of National Agro-Regional Planning Committee 1992, p. 10ff).

Such complex and integrated approaches are based on broad concepts of sustainability; they are holistically oriented and do not isolate ecological sustainability from other factors in the overall development process.

However, there are many questions unanswered regarding the future course of agricultural development. Thus also the transformation of the mass of agricultural production units into successfully producing, environmentally sound agricultural systems (beyond the scope of a limited number of villages and experimental stations) is the real problem. It has to be met in future under contradictory goals and requirements of economic development.

16 Cf. Wang Weiji 1992, p. 29ff, 119ff. "...the per capita availability of farmland steadily diminishes, yields of triple-cropped fields are still increasing because of intensive irrigation and fertilization. In many villages, all cropland is already irrigated, and average nitrogen application rates surpass 400 kg N/ha, unrivaled in Asia, but the continuing decline of cultivable land (resulting from the combination of actual land losses and population growth) will prevent the two agronomic practices essential in sustainable agriculture – cultivation of green manure and complex crop rotations including leguminous species. Instead, the need for higher yields of staple grain crops will lead to further intensification of inputs, further weakening the soil's capability to sustain long-term productivity" (Smil 1993a, p. 198).

17 Such an other model of agricultural development for third world would include: linking production growth and rural occupation; giving priority to peasant, small and medium enterprises; community development in the villages; cultural development; building of communication and transport infrastructure to overcome the isolation of rural areas (Pisani; cf. Chonchol 1986, p. 268).

History

The historical epoch which shaped traditional West European agriculture both socially and ecologically until is rapid modernization since 19th century lasted from the end of the antique Roman Empire to modern industrialization. Feudalism was the dominant socio-economic system of rural societies for most time of this period. Although this seemed to be a period with little changes, the dark Middle Ages, there have been remarkable social and economic changes in agriculture and society at large. These changes make the decisive difference to Chinese traditional agriculture. In West Europe, also during the long feudal epoch, there was no static structure of societal development as it has been discussed under the concept of the Asian type of production. With regard to energy production the technological changes in agriculture and improvement of use of biological energies have been remarkable throughout the Middle Ages (cf. Debeir, Deléage, Heméry 1989, p. 118ff; cf. Haila, Levins 1992, p. 202). The final barriers of development based on the traditional energy sources of water, wind and wood have been reached during the 19th century, when the traditional expansion mechanism could not be continued any longer (no new land reserves for settlement and cultivation; further and now rapid population increase; no more intensification based on traditional energy sources). The paradigmatic agrochemical revolution indicating the modernization of agriculture is associated with the name of Liebig and his scientific concept of plant nutrition. In Germany, the 19th century can be characterized as the take-off to a modern intensified agriculture which gradually lost the sustainability of former systems, that is, its local social and ecological accommodation and the close coupling of agricultural and demographic development (cf. Schramm 1987, p. 87f; Debeir, Deléage, Heméry 1989, p. 146).

The fundamental societal change process in (north-western) European societies which happened outside agriculture and before its last modernization was the superimposition of the city and countryside distinction by the new class-divided structure of capitalism which has become the dominant social structure (cf. Spybey 1992). With its final establishment through the industrial revolution, the rural society with agriculture and peasants became marginalized. Although this was a delayed process in Germany, it has been terminated until the middle of 20th century.

The evolution of property forms was characterized by the duality of peasant farm structures and large holdings of landlords or manorial estates. In Germany, this duality has existed until 20th century; in East Germany traditional structures of large holdings (East Elbian Junker) continued until the introduction of the socialist system after 1945, whereas the tradition of small scale peasant farming continued in West and South Germany mainly.

Many traditional agricultural technologies (such as organic fertilization) and forms of land use (such as crop rotation) allowed for ecological sustainability (cf. Schramm 1987, p. 87ff), although not all agricultural systems and practices can be characterized as sustainable (as, for instance, the ecological discussion on the "tragedy of the commons" indicates). A historical example of sustainable agriculture of European origin is the integrated crop-animal husbandry in the late Middle Ages<sup>18</sup>. This production system is closely linked with social and economic development and property systems. An important quality of traditional sustainable agriculture can be seen from this example as from the example of wet rice cultivation: sustainable systems in traditional agriculture have been successful solutions to rise of yields and intensification of land use – not, as it is the present conversion process after agricultural modernization and intensification, as extensification of land use. This and other components of traditional sustainable agriculture have to be mentioned here. Most of these are limits of these systems as well as their strengths:

- Agricultural systems were locally limited but adapted in social, economic and ecological terms.
- The energy basis was characterized by traditional physical and biological energy sources (wind, water, wood, animal traction and human labour). The limitation to these sources seemed to be a final barrier against unsustainable production.
- The linking of agricultural production and demographic development, however under conditions of relative low population density, was a stabilizing factor.
- The low degree of integration into markets, the local limits of transport, the preponderance of subsistence production and the local level of organization of production and exchange made it more easy to avoid man made environmental damages.
- A high degree labour input (however there was no preponderance of hired labour) had certainly ecological advantages by avoiding such environmental damages resulting from mechanization and use of heavy machines although the social and personal impacts of heavy work must be seen differently.

18 This husbandry system "emerged with the introduction and intensive use of new forage and green manure crops. These in turn permitted an increase in the availability and use of animal manures. This permitted the emergence of intensive crop-livestock system of production through the recycling of plant nutrients in the form of animal manures to maintain and improve fertility." (Ruttan 1994, p. 212).

- The special significance of peasant family farming as the dominant social organization of rural societies, which has survived until today although it changed its functions (cf. Gasson, Errington 1993), may also become a basis for the development of a new sustainable agriculture (although it will not be the only basis).

#### Modernization and the Common Agricultural Policy

The modernization process of agriculture in West Europe has not only led to an immense increase of yields within one century, from mid 19th century to mid 20th century. It has also changed production techniques and agricultural landscapes<sup>19</sup>. Germany was relatively late in agricultural modernizations: it became fully efficient after 1945 only, in two different socio-political systems, that of West Germany and newly developing socialist system of East Germany.

The dominant course of modernization has been the substitution of indigenous knowledge (based on individual experience of farmers and transmitted in oral traditions) by scientific knowledge for production, and, now, also for the organization and management of farms.

In the second half of 20th century agricultural development lost its national dynamics with unfolding of the system of Common Agricultural Policy (CAP) of the European Community. What can be understood as an extension of market systems mainly has become a threat to social and ecological sustainability for other reasons than in China. Agricultural production with the CAP-machinery was decoupled from the demand of food and from the traditional social structure of agriculture in peasant and family farming in Europe. It seemed that markets have become too big to unfold self-regulatory capacities and to stay in balance. Disimbedded productivism (cf. Goodman, Redclift 1991, p. 206ff) is not necessarily based on purposive action, but may also be, as in the case of the CAP, a negative feedback of a policy which tries to enforce agricultural modernization and institutionalize a certain price on farmers production decisions<sup>20</sup>. The over production as a consequence of "disimbedded productivism" could no longer be defended with traditional arguments of food security for the national population. CAP is weak in certain respects, e.g. it does not and cannot change property systems, but only influence lands use and production decisions. Also the politically initiated change to begin extensification policy is not mainly for reason of establishing a new production regime or returning to environmentally sound production in all European farms, but mainly for reasons of

reducing surplus production and reducing the market costs for CAP which had exploded in the 1980s.

The fundamental differences to the Chinese development path (beyond the differences of political and economic macro-frameworks, which are not discussed here) with regard to ecological determinants, are:

- the decreasing role of population pressure for agricultural production,
- the rapid reduction of agricultural labour force,
- the increasing amounts of overproduction,
- the rapidly falling demand of agricultural land,
- the ongoing decoupling of production from locally available natural resources and resource quality, now again enforced through genetic engineering.

The striking contrast between Chinese and West European agriculture seems to be that not only the pressure of increasing population is no longer valid in Europe, but the demand of agricultural areas for food production falls rapidly. If this becomes the dominant trend (presently its first and mild forms can be seen in political set aside programmes), and no new function for agriculture (as presently discussed, e.g. production of regenerating resources on agricultural areas) will develop, a ruin of most farmers still producing and the vanishing of agriculture from large territories may be the result.

#### Emerging forms of sustainability

Differing models for sustainable agriculture in the European context emerged during the 20th century. These do not represent the continuation of traditional production techniques, but mainly a reaction to the negative ecological impacts of agricultural modernization. The main models are

- organic farming (originating early in the 20th century as part of esoteric counter-movements to agricultural modernization and mechanization);
- integrated pest management (originating as a reaction to the defaults of green revolution and the new rise of organic farming since the 1970s; now, with the UNCED documents, this has chances to be backed by a majority of actors);
- extensive agriculture (emerging as a policy reaction within the European Community, understood as a partial return to traditional forms of agriculture).

The social organization, which is most favourable for sustainable agriculture, is not an uncontroversial issue. Small farms and family farms seem to be better structures for environmentally sound production, but this

19 The social element said to be a decisive factor for stability and success of European agriculture is peasant family farming, which, in its present forms in Germany, existed since the early 19th century.

20 Not just the political regulation and distortion of the market price mechanism through political intervention (through CAP), as a standard economic argument would say, leads to environmental externalities, but the extension of markets and a price mechanism which excludes environmental damages from economic accounting lead to ecological damages.

cannot be verified finally. To continue the discussion it may become necessary to leave questions of structure and organization and discuss critically processes, land use techniques and forms of energy use.

Since the late 1980s, with increasing amounts of overproduction in the European Community, a special form of agricultural development is supported by EU agricultural policy: production limits, extensification of production (reducing input of fertilizers and agrochemicals, reducing livestock per hectare) and set-aside of farmland become more and more important. This is a conversion of the hitherto dominant course of intensification, although not a consequent one. It happens parallel to an ongoing intensification and technical rationalization of agriculture. The main reason for this support of extensive farming is not reduction of agricultural pollution but market relief.

The top-down approach of the reform of Common Agricultural Policy of the European Union in 1992 is the paradigm of this extensification path and turns out to become a turning point in the development towards sustainable agriculture. Sustainable agriculture is no longer identical with the organic farming movement; it becomes part of government-supported agricultural policy and unfolds into a variety of approaches which share only some basic ideas. That agricultural concepts of environmental movements and governmental policies come closer is not yet a sign for breakthrough on the sustainability path, but only a step further in the policy discourse on sustainable agriculture (cf. Stobelaar, van Mansvelt 1994).

## COMPARISON AND CONCLUSIONS

Ruttan's conclusion (1994, p. 209; cf. *ibid.*, p. 216) that "sustainable growth in agricultural production should be viewed as a research agenda rather than as a package of practices that is available to producers whether in developed or developing countries" is not a clear answer to question of how to initiate institutional change towards sustainability: rather it evades the issue. A simple reference to institutional structures does not bring us much further<sup>21</sup>.

### Similarities of sustainable agricultural systems

Is there a common agenda of sustainable development in agriculture for Western Europe and China – for developing and developed countries in general? To overcome societal barriers against sustainability, two sets of factors gain priority:

- the "soft constraints" towards sustainable rural development, including the role of symbolic value of agriculture for society and its re-valuation for the future development of humankind;
- an institutional change or re-combination of traditional and modern production techniques. Whereas in Western Europe this is part of the extensification policy, in China the CES-model can take this function.

The meeting ground for debates on changes required for sustainable agricultural development in Western Europe and China can become the increasing significance given to "soft", subjective and social value based factors over "hard" technological and material (often subsumed under economic) factors in the development process. The pathways towards sustainable agricultural development include institutional development which can proceed in a "bottom up" approach from local levels, even when it is supported by global environmental policies and governmental regulation or international regimes (cf. Bruckmeier, Glaeser 1992).

The principles of sustainable agriculture (insofar as not only production techniques are involved, but also social knowledge and institutions) found in both western and Chinese agriculture during the present transition period towards a sustainable system are as follows:

- The idea of an integrated circular economy provides the epistemological basis for sustainable agriculture. The practical problem will be, at what levels – local, regional, national, or global – can economic circles be closed under the existence of world market.
- The concept of institutional development can be understood as a re-combination of traditional and modern institutional components of agriculture in manifold, locally accommodated variants of "ecological modernization" of agriculture.
- Indigenous or producer's knowledge and technology should be strengthened, practical experience of farmers as a basic of knowledge should be revitalized (cf. Curtin 1995).
- Although sustainable agriculture is based on research and scientists are included in the research and development process, it stands in sharp contrast to rural development processes based on intervention of external development experts or "rural tourists" making "fleeting visits to the countryside to perform cursory reality checks"<sup>22</sup>.
- Not only the role of labor, but also the role of people in the agricultural development process is reassessed under sustainability: participatory development and giving back decision power to farmers and peasants, become part of strategic orientation in the development of social subjects for sustainable agriculture.

21 "Of course do institutions matter. They are part of hierarchy of constraints that shape the actual process of innovative adaptation but they are not at the top of this hierarchy." (Hesse 1992, p. 208).

22 Gow 1990, p. 47. The last two points are of the "scientific or universal" versus "indigenous or local knowledge" debates. Although the conventional distinction between these two no longer holds, since the relationship is always one of interpretation (cf. Murdoch, Clark 1994, p. 6), the starting point is this dichotomy.

The main issue seems to be that Chinese and West European agriculture are different development phases – simply said, before and after conventional modernization or intensification. However, a more long term and adequate development concept (which tries to integrate ecological and social components and is more sensitive to the specific requirements of agricultural production), the concept of “ecohistorical periods” should be used (cf. Haila, Levins 1992, p. 190ff). The decisive problem in the short run becomes the fact that the ecological basis of Chinese agriculture is so fragile already, that people cannot advocate intensification<sup>23</sup>.

Differences in value systems and philosophically grounded concept of nature, production and agriculture are only loosely linked with the individual practice of farmers. How far do they count and influence institutional change? Chinese cultural valuation of agriculture is based on value-orientations which can be described in generalized sociological terms (using the traditional terminology of Parsonian pattern variables) as of collectivity, ascription, diffuseness, particularism, affectivity types, whereas the Western agriculture, during its modernization, has become an expression of opposite values like individualism or self-orientation, achievement, specificity, affective neutrality.

Although such theoretical categories may be too abstract and generalized, it should be mentioned that Chinese society throughout its history has been deeply influenced by abstract and generalized thinking and by – what we call today – naive philosophical viewpoints that have been operationalized directly<sup>24</sup>. Thus, a holistic philosophy (contrary to “western reductionism”) has also influenced the thinking of Chinese farmers and its message was understood concretely in form of action rules saying “make full use of everything by means of diligence rather than waste resources; prefer benevolence and righteousness rather than benefit when the circumstances require it; pay more attention to harmony between humans and nature instead of just emphasizing reform of nature”. For example, Chinese farmers understand well the necessity of nurturing land after each harvest; they never take any pattern of land utilization which may have a “rendering” effect.

– The paradigmatic role of agriculture and the agricultural population for development of the whole society seem to be decisively different: China is still an agricultural society and unique in its huge agricultural population. The dominance of rural population

and agricultural labour force in China, as in most developing countries, and the marginal number of agricultural labour force in Western countries, are quite different conditions for further agricultural development.

- The initial constraints and determinants of sustainable agriculture in China are the limits of natural resources (non-renewable energy, water and arable land) and the low capability of self-investing. Therefore, China cannot copy the conventional modernization approach of West, nor can it afford further heavy depletion of natural resource base as a concomitant of such agricultural development (Cheng Xu 1994, p. 407)<sup>25</sup>.
- Is labour intensive agriculture an ecological model for the modernization of China? The idea of substitution of the factor capital by labour as a concept for ecological modernization (which might be deduced from the Chinese case) is seen as unrealistic in the framework of present capitalist market economy in the West – even environmentalists do not expect such a “conversion” as a concomitant of sustainable agriculture. The only leeway to follow the argument of a labour-based ecological agriculture further is: The conventional economic argument against substitution of labour for land is based on (western) industrial economy and does not take into account the relative specificity of agricultural economy and specific historical situation in which further rural development in China starts in these years.
- Family farming of the West European type, although it is often said to present an universal phenomenon (cf. Gasson, Errington 1993, p. 9), cannot be advocated as an ideal social organization of sustainable agriculture, abstracting from its dependence specific social and cultural structures. In China the village is more a basic unit of development than a single farm or family, an orientation which also followed in the newly developed CEA-model (cf. Chen Xu, Han Chunru, Taylor 1992; Keeney in: Cheng Xu, Shi Yuanchun 1994, p. 522). The village is not only an administrative unit or traditional community and still the dominant form of settlement in China; it is also a complex ecosystem which, like in many developing societies, is a traditional collective actor for preserving or improving the local environment (cf. Agarwal, Narain 1989). Also the diffusion of ecological agriculture happens through experimental villages (cf. Cheng Xu, Simpson 1992)<sup>26</sup>.

<sup>23</sup> This is not a unique argument for China, but characterizes the situation for many regions in developing countries (cf. Goodman, Redclift 1991, p. 213, 215).

<sup>24</sup> However, if we regard the operational producers and technologies derived from such contrasting value and norm systems, it might be surprising, that they often do not differ substantially, as can be seen in many production techniques in agriculture.

<sup>25</sup> Whether an agriculture-driven development course of development is possible in the long run, one which allows to avoid the faults and environmental damages of the Western industry-driven model and nevertheless allowing for substantial development and improving bad living conditions, is still an unsettled issue.

<sup>26</sup> “...farms do not exist in social isolation but are integral components of communities, whose institutions, customs and systems of rights and obligations determine much of what farmers can and cannot do” (Conway, Barbier 1988, p. 665).

All traditional sustainable agricultural systems were linked to slow rates of growth and limited to local range. How far can they give lessons of experience for the transition to sustainability under present circumstances?

The new sustainability concepts emerging as a reaction to the modernization process and as a reaction to increasing environmental degradation are not yet socially established and still in an experimental stage. All the various approaches of sustainable development have the common goal of levelling inequalities between societies and cultures which presently show extreme differences in energy consumption and use of natural resources. But this levelling or "global ecological equality" cannot be said to have really begun with just a few global environmental programmes. Programmes like "Agenda 21" are only declarations of intent, with a low degree of obligation and enforcement. The dominant economic development trends are still the ones characterized by waste of energy and resources, and production of hazardous waste at both national and global levels. Global externalities like CO<sub>2</sub> and CH<sub>4</sub> emissions are still increasing. There are other, structural elements, of rural development which limit sustainability:

- The unequally distributed and fragmented land property and certain land tenure systems in agriculture (including leasehold for instance) may limit sustainable development at regional levels and through institutional barriers.
- Global limits to sustainable agriculture include not just the unequal distribution and availability of natural resources required for agriculture, but also the degree of dependence on a global agriculture-and-food-system which is more and more integrated into world market structures and no longer into local or regional structures (cf. Goodman, Redcliff 1991, p. 201ff).

What are the process elements of sustainable agriculture and rural development? It has been repeatedly stated that sustainable agriculture is a self-correcting or anticipatory system (cf. Wolf, Allen 1995, p. 11), but this is not enough. It has been discussing for over ten years the role of people, of the farmers and rural populations; their capacities have to be strengthened through participatory development (cf. Chambers 1983; Cernea 1985; Conroy, Litvinoff 1988), but this is not sufficient either. It seems that there is not sufficient knowledge for sustainable agricultural development, but the demand for knowledge has decreased in areas where it had been sought or generated up to now, in the natural sciences or in ecology. The social mechanisms of sustainable agriculture are just beginning to be identified and formulated.

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Arrived on 29th August 1995

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# REGIONAL SPECIALIZATION AND PRODUCTIONIST POLITICS IN AGRICULTURE VS. THE PRODUCTIVE AND REPRODUCTIVE STRATEGIES OF SOCIAL ACTORS. THE CASE OF FAMILY PRODUCERS IN A CATTLE RAISING REGION ON THE ARGENTINE PAMPAS<sup>1</sup>

## REGIONÁLNÍ SPECIALIZACE A PRODUKČNÍ A REPRODUKČNÍ POLITIKA VERSUS PRODUKČNÍ A REPRODUKČNÍ STRATEGIE SOCIÁLNÍCH AKTÉRŮ. PŘÍPAD RODINNÝCH FAREM V OBLASTI CHOVU SKOTU NA ARGENTINSKÝCH PAMPÁCH

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**ABSTRACT:** This work examines how small producers and their families in the Pampean Plains of Argentina have succeeded in maintaining independence despite defavorable policy and adverse structural conditions. The expansion process of a capitalist means of production on a world level, the integration of the region into the world market and the adoption of a political strategy whose goal is productivist agricultural development, has produced notable regional differences and regional specialization in agricultural activities, marginalizing and breaking up large sector of social actors. In our study area, Blanca Grande, this phenomenon was apparent in the cattle raising industry. Livestock are first raised using poor quality pasture. Later, before they are sent to market, cattle are sold and transferred to better quality pasture for fattening. In this process, "the breeder" (el criador) depends on "the fattening" (el invernador) to buy his or her product. In this context, small breeders and their families have developed a special way of life which includes complementary urban and rural activities, generating strategies whose objectives are family reproduction, production, and furthermore, production of a surplus. A number of adaptive strategies such as wage employment, reciprocal labor exchanges, and urban employment have been adopted, but at the same time rural production activities as a principal means of income have been maintained. The community adapted diffused technological packages as well as proposed productive models, but at the same time incorporated alternative products and conserved food production activities for domestic subsistence. This combination of strategies has made it possible for small producers to maintain themselves in a system which is in critical times.

productivist agricultural development, regional specialization in agricultural activities, small producers in agriculture

**ABSTRAKT:** Práce se zabývá zkoumáním toho, jak si drobní producenti a jejich rodiny dokáží úspěšně udržet nezávislost navzdory nepříznivým opatřením hospodářské politiky a strukturálním podmínkám. Proces expanze kapitalistických výrobních způsobů na celosvětové úrovni, integrace regionu do světového trhu a přijetí politické strategie, jejímž cílem je produktivistický rozvoj zemědělství, vyvolaly výrazné regionální rozdíly a regionální specializaci zemědělské činnosti, jež marginalizují a rozbíjejí značnou část sociálních aktérů. Ve zkoumané oblasti Blanca Grande se tento fenomén zřetelně projevil v odvětví chovu skotu. Stáda jsou zpočátku odchovávána na pastvinách horší kvality. Později, předtím, než se dobytek dostane na trh, je prodán a přesunut na výkrm na kvalitnější pastviny. V tomto procesu je „chovatel“ (el criador) závislý na „výkrmu“ (el invernador), zda odkoupí jeho produkt. V této souvislosti vyvinuli drobní chovatelé a jejich rodiny zvláštní způsob života, který zahrnuje komplementární městské a rurální aktivity, a tak vyvíjejí strategie, jejichž cílem je reprodukce rodiny, produkce, a nadto, produkce přebytku. Byla zde přijata řada adaptačních strategií, jako je námezdní práce, vzájemná výměna pracovníků a městská zaměstnání, současně však venkovské výrobní činnosti stále zůstávají základním zdrojem příjmů. Společnost se přizpůsobila rozdílným technologickým a produkčním modelům, současně však přijala pro udržení své existence i alternativní produkci a zachovala samozásobitelské aktivity. Tyto kombinované strategie umožnily drobným výrobcům udržet se v systému, který prochází kritickým obdobím.

drobní zemědělské výrobci, produktivistický zemědělský rozvoj, regionální specializace v zemědělských aktivitách, sociální aktéři

<sup>1</sup> Paper presented of the XVth Congress of the European Society for Rural Sociology, Prague, 31 July–4 August, 1995

Capitalist expansion process dynamics at the global level have brought about structural transformations among and within different social groups. The end result of this process has been the transformation of new distinct societies.

The problem which we wish to address pertains to agriculture in the Argentine Pampas, and cannot be understood if not put into the context of the processes which have characterized different stages of world capitalism development and its corresponding regimen of capital accumulation.

These processes have produced transformations in local societies and marked regional differentiation, marginalizing and segmenting geographic spaces and broad social sectors.

Pampean Agriculture is incorporated into the world market providing industrializing countries with raw material and food commodities. In the case of cattle raising, the commercialization of its products effectively began in the beginning of this century with the establishment of English cold-storage technology in Argentina. This brought about a series of changes in the Pampean Agro-Sector, modifying labor, imposing new techniques and deepening the processes of agricultural activity regionalization. In the 1930's, Argentina's agro-export model, which was previously aimed towards England, entered in a crisis and lost its importance.

In the 60's, the culmination of "development" models which were supposed to be a vehicle which would drive "undeveloped" societies to a state of progress corresponding to the models of the "advanced", "industrialized" societies of the west, provoked the implementation of politics in Latin America aimed at the modernization of agrarian society. One of these models was aimed at generating and diffusing technologies, forms of production and models, but neglected to address historical processes and the "logic" or "rational" of the different social actors. These productivist models, which favored the dominant economic system, tended to prioritize or intensify the most important commercial production, in this case cattle, in order to produce the significant volumes which were considered necessary for the national economy. However, this also signified a fierce competition among producers that were trying to be "modern", with a constant need for technical support and large loans in order to implement new technologies. This model has produced the disappearance of numerous independent farmers, migration

of rural population, sub-utilization of human resources, and the degradation and disappearance of natural resources.

At the global commercial level, the aggressive export politics of the United States and Europe has left the south without its old markets.

A new order in world food production seems to be manipulating "the level playing field" under the orders of global regulation mechanism and institutions like the World Monetary Fund (WMF), and GATT, which restructured the postwar systems, igniting a fierce competition for market control between countries of the north - Canada, United States, and Europe. This war strengthens North-South asymmetry (McMichael and Myre 1991).

In the case of Latin America, these transformations were quite dramatic thanks to international organisms which obliged implementation of adjustment politics for external debts payments in order not to block the financial flow to these countries.

However, as McMichael (1994, p. 279) has indicated: "the essence of global restructuring is precisely differentiation..." if one tries to subordinate areas which historically have been unequal to global competitive forces, and within a completely unregulated framework, the end result will be the generation of even greater social and economic ruptures. These processes manifest themselves in a great variety of responses (Lambí 1994).

As we previously stated, local societies have been transformed before these compromising processes and the politics which have been implemented. The transformations have not been uniform nor homogenous and have received a variety of responses on the part of the social actors involved.

The objective of this paper is to show, through a case study, how these global processes are manifested in a local society and affect a category of the social actors, in this case the farmers and their families in a zone of the Argentine Pampas: Blanca Grande, Olavarría<sup>2</sup>.

In the first section we will analyze how the region is integrated into national society and external markets, land settlement and distribution, and the structure of different farming operations.

In the second section we will examine changes in the world food commodities markets, the deterioration of the beef market, and state political policy inspired by modernization paradigms which have affected local

2 Olavarría is in the central zone of the Province of Buenos Aires (Argentina), mixed zone integrates part of Pampean Plains. Its surface area is 771,500 hectares and has a plains landscape. 65% of its watershed feeds the Rio Salada system. Infrastructure development, principally roads and railways, has modified the natural drainage which caused serious flooding in 1919, 1946, 1955, 1957, 1963, 1980, and 1985, affecting urban as well as rural areas and causing a high mortality of livestock and crops. 80% of the land is apt for cattle-raising. The Blanca Grande - Espigas zone is located in the North of Olavarría and a surface area of 97,000 hectares. It is crossed by Arroyo Brandsen, a small stream, which empties into Laguna Blanca Grand. Another stream, Arroyo Las Flores, originates in the northeast of the lagoon and running from west to east eventually empties into the Rio Salado. The majority of its soils are apt for livestock and crops, with a predominance of the former. The soils have limitations due to alkalinity and erosion. In the flatter part "tosca" or deposits of calcium carbonate are very close to the surface. A few sandy hills suitable for agriculture exist. Since it is located in an area which receives water from the Laprida depression from the Salada, it is always in danger of flooding. It is considered to be an floodprone area, on first order of susceptibility (INTA-ITAR 1966).

society in terms of land distribution and diffused production models.

Finally we will examine how in this context, which is characterized by economic instability and in the last few years by political economic adjustment, farmers and their families have developed a special way of life which has included complementary but not contradictory urban/rural relation, generating strategies whose objectives are family reproduction, production, and surplus production. The community adopted diffused technological packages as well as proposed productive models, but at the same time incorporated alternative products and conserved food production activities for domestic consumption and subsistence. This combination of strategies has made it possible for small-scale farmers to maintain themselves in a system which is in critical times, and today, in some cases makes it possible to support children who had previously migrated to work in factories when they found themselves unemployed.

#### INTEGRATION OF THE PAMPA REGION INTO THE WORLD MARKET. SOCIAL ACTORS AND THE REGIONALIZATION OF AGRICULTURAL ACTIVITIES

The Argentine livestock industry has traditionally been a provider to the external market. Beginning in the 17th century, the original indigenous of the Pampa and Patagonia practiced an intense business in cattle on the hoof (Mandrini, Ortelli 1992). These activities were associated with the conformation of the colonial apparatus and establishment of Spanish mercantile capitalism-oriented centers (Palermo 1988).

Later, in the first few decades of 19th century, large quantities of beef jerky aimed at feeding of slave labor in Caribbean colonies and towards the poorer sector among the wealthier countries, were being exported.

At the end of the last century and beginning of this century, the refrigeration systems introduced by English and American packers began to impose a series of new demands, most notably a "chilled beef", produced from steers preferentially of English stock which had to have a specific distribution of flesh and fat. The type of fattening that than the export-destined steers required could not be obtained on farms with natural grasses, which meant the necessity to plant alfalfa and prepare pasture. The farmer whose fields were not adequate for the incorporation of artificial pasture had to move his production to more apt lands. Breeding took place in zones with poor quality grasses. Calves were initially raised in these zones and were later transferred to fattening zones, which were regions with the best grasses or areas more appropriate for alfalfa. These

"fattening regions" are generally located in the Northern and Western zones of province of Buenos Aires and neighboring zones in the provinces of La Pampa and Cordoba. This process brought about the progressive regionalization of livestock production activities.

As a consequence of the process of inclusion of Pampean spaces as the principal supplier of raw materials and food commodities destined for the western world into international market, special production relations have emerged which no longer allow us to speak of "cattle farmers" or "livestock activity" as a discrete entity. Along with livestock breeders, "feeders" or "fatteners" were created, both being owners of a form of production "which is not produced and is relatively non-reproducible (being land)", and established a type of relation in which the breeder becomes subordinate to the "fatteners", being the ultimate link in a chain that connected the Pampa with external market (Vilafane 1990).

Based on extra profits which the livestock producers obtain through land of differing quality, these new relation dynamics favored and benefited the fatteners at the breeders expense. The extraordinary accumulation of capital in the Argentine agro-sector in the first decades of this century (Flichman 1986) explains differentiation at the international scale, and was reinforced by an internal profit differentiation, which within the Pampa region permitted capital accumulation which varied between the various categories of livestock production. This occurrence was also reinforced by a mixed production strategy combining cultivation and livestock production, which gave the "fattener", who possessed the best lands, an advantage in times of adverse livestock prices. The farmer, because of the quality of his land, is an obliged livestock producer (Vilafane 1990).

The problem of improving pasture in order to diminish risks and processing costs was solved by large rangers through the incorporation of new actors in the Pampean agro-sector: tenants and share tenants<sup>3</sup>. These were generally Italian or Spanish immigrants, to whom the livestock producer leased sections of land for three years with an agreement that fields later be returned cultivated with alfalfa (Benigno del Carril 1982).

#### Transformations in local society

##### *a. Land settlement, the immigrant settler and the livestock producer*

European division and settlement of land in what is now the district of Olavarria took place through diverse systems and much in same way as the rest of rural Pampa region. Up until the middle of the 19th century, the state gave away land to individuals under an "em-

<sup>3</sup> The tenant system consists of a legal agreement in which the tenant pays a sum for the use of a fraction of land. "Share tenant" is another form in which the tenant supplies his labor and the landowner seed, machinery, and traction, permitting them to control production. In return the land owner receives a percentage of the harvest.

phyteusis" program<sup>4</sup>. This effectively meant that large parcels of land fell into the hands of a few individuals. About ten properties, each consisting of between 6,000 and 30,000 hectares, were handed out under the old emphyteusis laws and were settled in Blanca Grande and adjacent regions in 1877<sup>5</sup>.

Later on the state implemented colonization plans which did not signify a modification in the size nor change in ownership of the land which had been distributed until then. In Olavarría's case, land which was occupied by Catriel indigenous groups was distributed to settlers of Russian and German origin from 1977 on. This land constitutes 6.8% of the District of Olavarría and was divided in 1,251 parcels, each consisting of 47 hectares.

Therefore there emerged two types of production in the region. There was the settler "chacra" of farm principally dedicated to cultivation and characterized by family labor. Also there were traditional ranches, being large extensions of land which were limited to livestock production without any additional activities other than the branding and castration of animals.

Another form of land settlement involved railway companies which bought sections of land in order to extend and lay down rails and establish railway stations, later selling adjacent properties. The area around the Espigas station was settled in this way and made the settlement of a large number of families possible.

#### *b. The transformation of form of production as a result of external market demands*

The form of production of exportable elements based on the extensive use of good quality land generated a considerable commodity volume which meant the necessity to restructuralize the transportation system. One of the consequences of this was the rapid unification of the internal market around centers with large export ports.

In 1883 the railway reached Olavarría and in 1910 Blanca Grande and Espigas, connecting them with the ports of Buenos Aires and Bahía Blanca.

Via the railway, products left Olavarría, incorporating it into the national and international economic system. Exported products included agricultural commodities – principally livestock, minerals, stone appropriate for construction, and later, cement<sup>6</sup>.

Olavarría plays an important role as a cattle producer in the Pampa agriculture industry. Since 1930 it has had the highest number of cattle in the Province of Buenos Aires and around 87% of its surface area is annually dedicated to this activity.

As we mentioned earlier, agricultural producers had to adapt their forms of production to the new imposed technologies in order to satisfy the demands of the external market. In respect to the cattle industry, this meant large investments of capital in order to adapt production to the breeding of animals of English pedigree.

As well, these changes brought about a market division of labor in the livestock production cycle (breeder, fatter, slaughter, packing, etc.), producing a regionalization of the distinct production stages necessary to produce "chilled beef" for the external market.

We can say that the transformation of forms of production constituted changes which were necessary in order to survive in the system, at the same time modifying the way of life of those individuals who made their living from agriculture.

Within a system in which economic competition is implacable and the independent producer exercises no control whatsoever, one is obligated to adopt continually new technologies in order not to be displaced from market. This is a "treadmill" type of technological change whose consequence provoke profound modifications of agrarian structure. In which Cochrane has called "canibalism", large enterprises buy neighboring lands that have been left outside of the technological treadmill (B u t t e l 1980).

In our case study the "treadmill" process was given more potential by the politics of foreign packer companies, who gave incentives to the process of technological transformation through loans and regional pricing, producing a super-production of beef that precipitated a fall in prices. As a result of the world economic crisis of 1921, 1923 and 1930, western countries who controlled the world economy and were the principal buyers of Argentine agricultural products implemented strong protectionist policies.

The worst victims of this situation were small and medium-sized producers who could not wait for prices to improve. The result was bankruptcy and eventually the sale of a large number of farms.

4 The emphyteusis regimen was a system implemented by the province of Buenos Aires in order to obtain income from lands which they could neither sell nor give away because they were collateral for the public debt. Large extensions of land with a minimum of 2,300 hectares were distributed through fixed royalty payments for twenty years, extendable for an additional ten years. The renovation of the contrast was not limited, was transferable to the descendants of the individuals who received land under the original emphyteusis laws and gave them priority purchase right if and when it became possible for the government to sell them. These individuals slowly became land-owners, and their large properties were the basis of land distribution in the Argentine Pampas.

5 Topographic plan of Blanca Grande, 1877. Direccion de Geodesia de la Provincia de Buenos Aires.

6 Initially three important factories were established. One of them was Loma Negra CIASA which presently produces 70% of countries' cement and was initiated by a French immigrant, an ancient "emphyteusis" land owner who in the 19th century possessed more than 30,000 hectares of land containing large deposits of limestone. Industrial and agricultural development in Olavarría and their associated activities means a series of economic and social transformations that distinguished the surrounding region and which signified an accelerated urban population growth in the 1960's and 70's.

Accompanying this situation, there were also a series of transformations in the forms of production and agrarian structure in the region.

At the property level one observes a concentration of ownership and at the same time an increase in land division. In 1920, 90% of the land in the region belonged to its original owners. Three individuals possessed more than 41% of the region's surface area. During the period of 1930-1950, 63% of the surface area had changed owners. The average farm size which in 1920 was 1,825 hectares was reduced to 334 hectares.

Two companies connected to multinational agro-industrial groups appeared in the zone, buying up large, medium, and small sized farms<sup>7</sup>.

These companies were dedicated to breeding, while fattening took place in other regions appropriate to these activities. Both possessed stock farms for the generation of their own livestock refining techniques using the most advanced technologies.

Based on salaried labor, these companies are directed by administrators and managers, with a hierarchy of other employees such as ranch managers and farm hands falling under their command. All other activities, the sowing of pasture, feeding of animals, etc., are contracted<sup>8</sup>.

The region's entrance into the world market was facilitated and was significantly more direct as a result of these large agro-companies, which already constituted links in the chain between the country and consumers established by the multinational agroindustrial groups to which they belong, taking control of production, processing, transport, and commercialization of food products.

There are also groups within the region whose activities are different from the agro-companies which specialize in cattle raising - producers who practice a mixed type of farming - cereals and cattle - which up until around the 1940s meant the possibility of the development of an incipient agriculture in the region<sup>9</sup>. As well as cattle raising, other activities are practiced, including the breeding of pigs and domestic fowl, especially turkeys.

In the 1940s wheat and barley production was very small, sunflower was introduced and there was a large increase in cattle production.

These data illustrate how production characteristics in the region were modified and how cattle production

maintained a high profile in the regionalization of agricultural activities.

#### WORLD CEREAL AND LIVESTOCK MARKETS, ECONOMIC POLICIES AND THEIR INFLUENCE ON LOCAL SOCIETIES IN THE LAST TWENTY-FIVE YEARS

Argentina's role as an important beef exporter has changed. Since the Second World War, the U.S. has adopted aggressive international politics in order to enter the world market and commercialize its agricultural surpluses. The European countries, formerly beef importers, have become exporters. These two powers have taken over markets which traditionally belonged to Argentina by offering beef at prices estimated at between one third and one fourth of those which prevail in the internal community markets. In the 1980s Brazil and Uruguay also took over a number of Argentina's markets.

While in 1977 Argentina was a supplier of 43% of the beef to international markets, in 1986 this figure had declined to 11%, with the European countries supplying 48% and Brazil 21%.

There exists a number of external and internal causes which brought about this decline, and this will be the subject of another study. What is of interest to this study is that during this time period (around 1977-1986) the depressed internal market absorbed 90% of beef production, while only 10% was sold for export.

Economically, the last two decades have been characterized by traumatic events for all of the social actors. The seemingly endless adjustment plans initiated in 1974, inflationary and hyperinflationary processes, as well as convertibility plans, have had selective effects on wide sectors of the population.

In agriculture, sectors related to the exportation of products such as soy and sunflower for oil production have profited, because the agroindustries involved in this industry have taken relevant positions on the theme of price fixing, affecting both food producers and consumers (B a r s k y 1993).

The elimination of "retention taxes" caused significant increase in food production which provoked a fall in actual income and in commodity prices, in the impoverished internal market, as was the case of beef.

7 One of these belongs to the Bunge Corporation which was part of the Bom and Hirsh Families of Holland, who installed themselves in Argentina in 1884 as grain exporters. In 1980 it was calculated that the Bunge Corporation's export sales to the U.S. were more than 2 billion dollars (B u r b a c h and F l y n n 1983).

The other is connected to a company which we have already mentioned, Loma Negra CIASA. A few years ago this company bought the railway which connects the south of the country with Buenos Aires and passes through Olavarría.

8 The "contractors" are owners of seeding, harvesting, and fertilizing equipment. They are generally family farmers who also own small parcels of land, and have invested in this type of equipment since elevated land prices make purchase of additional land impossible. They work other individual's fields, and are paid a percentage of the profits (T o r t 1988).

9 The shipment registers from the Blanca Grande and Espigas railway stations prior to this date show they were supplying 11% of the wheat, 16% of the barley, and 3.24% of the cattle shipped within the District of Olavarría. Data based on Shipment Register from railway stations.

When plans tending to modify agrarian structure recommended by the Alliance for Progress were implemented throughout Latin America, a number of measures which did not affect the agrarian structure as expected were undertaken in Argentina.

At the provincial level the "Law of Agrarian Reform and Settlement" was passed. This law was aimed at giving continuity to the "Agrarian Transformation Plan" which had originally been implemented in 1957, making it possible for tenants to purchase the land which they had been working. However, given high land prices, very few tenants were able to purchase their farmland and had to abandon them. The implementation of settlement plans within the framework of the Agrarian Reform and Settlement Law served in part as an escape valve for these situations.

As a result of the new provincial law of 1960, in Blanca Grande 12,000 hectares were expropriated and subdivided into 53 parcels of between 200 and 359 hectares and later allotted to fifty families. More than 90% of the settlers who received parcels of land were tenants or share tenants who had worked on other people's farms in distinct zones of Province of Buenos Aires.

In addition, in the 1960s the "Instituto Nacional de Tecnología Agropecuaria" (National Institute of Agricultural Technology), or INTA, intensified its activities in the region with the objective of diffusing technological models aimed at increasing cattle production yields. The models generated by INTA did not take the characteristics of different systems of production including the composition of land, capital, and labor into account, neither did they consider the characteristics of different types of Pampean agro-producers or value their cultural heritage.

Blanca Grande-Espigas and its inhabitants continue to be marginalized even though they live within the privileged Pampa zone of the province of Buenos Aires. Diverse causes are related to this situation. The railway branch which connected Blanca Grande and Espigas with Buenos Aires was discontinued in 1978 by the military dictatorship because under their economic politics it was not considered to be economically viable. This was obviously a shock to the regional economy since in the small villages and towns a number of businesses which previously supported and supplied railway passengers and personnel closed down. Since there was no longer a way of transporting products to large centers of consumption, a number of activities previously aimed at commercialization, such as turkey farming, became limited to personal consumption. In addition, the diffusion of productivist

models in the beef industry, along with a market with depressed prices, provoked an economic crisis among small and medium sized cattle farmers.

The resulting lack of work, along with the deficiencies in the railway, education and health systems, has led to the out-migration of large part of the population and impoverishment and isolation for those who have chosen to stay.

In order to cope with these circumstances, families have developed a new urban-rural lifestyle; they distribute or assign tasks aimed at reproduction or farming activities to family members; they modify or undertake strategies according to the situation of the family group, incorporating alternatives; and they continue the production of food for the subsistence of the family unit, adopting diffused technological packets.

### THE RESPONSE OF THE SOCIAL ACTORS: FAMILY PRODUCERS UNDER GLOBAL POLITICS

Production models spread by the dominant economic system tend to give priority to and intensify the production of those goods considered most important, in this case beef, through technological packages made for abstract productive systems. Family producers remake or adapt them according to their necessities and characteristics through diverse strategies, which tends to neutralize aspects which are not appropriate to their purposes.

Through the development of a way of life which relates rural and urban in a complementary form and by combining strategies, groups of farmers and their families are able to carry on with production, reproduction, and at time are even able to produce a surplus. These achievements have taken place within the context of unfavorable economic politics, in a system which promotes and awards extensive type production strategies<sup>10</sup>, and along with a depressed market and precarious living conditions in the rural areas.

This study took place among a group of family farms in Blanca Grande-Espigas<sup>11</sup>. All of the farms possess similar natural resources, consisting of an extension of between 200 and 370 hectares, soils apt for cattle production and to a lesser extent for cultivation. There is a limit to the quality of cultivation because of the quantity of calcium carbonate deposits lying a few centimeters below the surface. Floods are frequent since there is very poor drainage for waters originating in elevated areas and from a stream which crosses the region. Forms of production<sup>12</sup> are based on the number

10 According to the economic conditions of the cattle industry in Argentina it is considered that there exists a great relation between farm size and profits. In order for the breeding industry extensions to be profitable they need to exceed 1,000 hectares (Gallacher 1989).

11 Our field work was carried out in Blanca Grande and Espigas on 43 farms of between 100 and 400 hectares. The unit of analysis is the farmer and his family, and the farm is the unit of economic production. Field work took place during distinct times of the year in order to visualize the zone and work processes during seasons. Research techniques were principally unstructured observation, interviews, and closed surveys.

of laborers in the family unit, and differ in terms of access to and possession of expendable capital and technologies, which effects one's capacity to reproduce and to adopt and develop the best means of production.

### Family producers and their farms

The majority of the study families are ex-tenants who became land-owners under the 1960 settlement plan which we referred to earlier. Some are the descendants of those who were able to buy parcels of land when railway company sold properties surrounding the Espigas Station. There is a small group made up of farms which, in earlier times, belonged to settlers and had been acquired by agro-companies planning to expand or purchased by professionals, business people, etc., as an investment.

*Category 1:* This category includes farms which possess enough capital to guarantee the production process. Labor is provided by the family, and reproduction is ensured. They exercise real control over decisions, means of production and natural and human resources.

On the average, three or four family members work full-time on the farm. This generally includes a father, mother and male child, who often continues living with his parents when he marries. Unmarried daughters are usually given incentives to continue studying, and are typically sent to the nearest city with this goal in mind. In contrast sons are usually incorporated into the operation after receiving a basic education. In many cases elderly members of the family move to the city due to the poor quality of life for them in the country. There is often a tacit agreement among the family members when the family unit is very large and there is not enough room for everyone. One son remains in charge of the farm, maintains some of the older family members, and distributes an annual sum to his siblings according to his abilities. The objective of this agreement is that the farm should not be divided into non-productive units and to ensure that it stays in the family.

Their activities include cattle and feeder cattle production, and also sheep for personal consumption. A number of families have adopted alternative production such as hog raising. Some crops are cultivated for feed. Corn, wheat, and winter and summer vegetables may also be grown. Any grain surpluses are sold in the neighboring areas. Cattle are fed on natural grasses and perennial pastures. Calves are weaned<sup>13</sup> in April,

which is the beginning of autumn, and are transferred first to sorghum and later on oat pasture.

When families own their own machinery, seeding and harvesting is performed by family members. Otherwise neighbors who own equipment are contracted to do this work. There are cases when neighbors exchange labor for the use of machinery.

The most important activity is cattle production, and the family earns most of its income and monetary security from this activity since it is an easily executable capital reserve. That is to say that cattle raising provides financial resources for maintenance, farm improvements, and of all the elements necessary for the reproduction of the farm. We have called this *Monetary Income I*.

The animals are commercialized at cattle auctions which take place in nearby villages. We have called this formal commercialization space *Market I*.

Homestead-level production, a women's activity, is intensified, and other members of the family, especially the male children, generally work on other farms, whether it be looking after them, performing tasks such as sheep shearing or working the land with own machinery, etc. Income produced outside of the family farm, along with income generated by hogs or sheep and obtained from homestead activities, is destined to the reproduction of the family. We have called this income *Monetary Income II*.

Surplus products are commercialized among neighbors, in general stores, bakeries (cereals, eggs), butcheries (pigs, lamb), tanneries (leather and wool), and in country markets and fairs. We have called the space used for the commercialization of small and surplus quantities of various products (cereals, lamb, pigs, ducks, etc.) *Market II*.

44% of the farm studies fall within this category, and are described according to land use, improvements, and animal population in Plan I as Farm Type A and B.

*Category 2:* This category includes farmers who, due to the lack of capital, are forced to lease land, and income is used to acquire additional animals, new constructions necessary for production, etc. Since they are tenants, there is a part of natural resources over which they exercise no control.

The productive activities which they undertake are similar to the first category but in a lesser scale. Three or four members of the family work on the farm. The rest of the family, if there are others, continue living in the city without completely disassociating themselves from the farm.

12 The organization of production forms varies according to how productive factors are combined: a) resources in the larger sense include land and water in quantity and quality; b) means of production, tools, etc., provided by capital, and c) the labor of society members. Strategies refer to processes through which the social actors adopt distinct actions pertaining to an objective in the context of different social, political, and economic situations.

13 Weaning consists of separating the calf from the mother so that it becomes accustomed to eating grass and that the mother can give birth again. Weaning is done when a calf reaches approximately 180 kilograms.

I. Plan 1: Land, installations and livestock, farms based on family labor, Blanca Grande

Farm type	A	B	C	D	E
Area	370 Ha.	248 Ha.	273 Ha.	188 Ha.	234 Ha.
Aptitude	Livest./Cult	Livest./Cult	Livest./Cult	Livest./Cult	Livest./Cult
Area leased out			83 Ha.	35 Ha.	180 Ha.
Area leased		71 Ha.			
Area worked	350 Ha.	319 Ha.	191 Ha.	181 Ha.	54 Ha.
Natural fields	150 Ha.	260 Ha.	0	61 Ha.	234 Ha.
Permanent pasture	50 Ha.	35 Ha.	273 Ha.	34 Ha.	
Winter vegetables	60 Ha.	15 Ha.		20 Ha.	
Summer vegetables		7 Ha.			
Forage cultivation	20 Ha. corn			10 Ha. oats	
Commercial cultivation				25 Ha. wheat	
Corrals	11	5	12	10	5
Cattle chute	1	1	1	1	1
Loading ramp	1	1	1	1	
Bathing tanks	1	1	1	1	
Silos	2				
Cows	104	150	65		50
Unbred heifers	28	35	60		7
Calves	95	125	55		5
1-2 yr steers					
2-3 yr steers					
Bulls	10	6	2		1
2-3 yr heifers				110	
Sheep	270	257	100	150	45
Lamb	90	45	141	70	21
Gelded sheep		40	4		
Ram	10	7	4	11	2
Dairy Cattle				20	
Pigs	80				

This category represents 18% of our sample, and is represented in Plan 1 as Farm Type C.

*Category 3:* This includes farms whose greater part of family members have left to reside in the city, generally not very far from the farm. They generally do not completely disassociate themselves from the farm. At least one of the family members works on and manages the farm, and neighbors are concentrated to help in its operation in exchange for either a fee or are permitted to graze their animals on a portion of the land. They are expected to divide their time between their farm and that which they are looking after.

In very few cases a family garden is maintained, with the abandonment of the majority of the activities dedicated to the family subsistence.

The sample includes 14% of this farm category which is indicated in Plan 1 as Farm Type D.

*Category 4:* This category includes families which had to lease the larger part of their farm except for their

homestead and a few hectares where the parents live. The rest of the family migrate in search of new horizons: "the pigeons flew for lack of land" is the explanation given by one father who now lives alone with no additional labor. Female children marry or go off to work in the city, and at sometimes, but with much difficulty, are able to continue studying. The male children look for work on other farms or in the city. In some cases the estrangement of family members takes place as a tacit agreement, but in the majority of situations results from conflicts ending in the expulsion of some of the members.

They consist of 12% of the farms in our sample, and are described as Farm Type E.

*Category 5:* These are farms which have been bought by farmers who have farms in other areas where cultivation and fattening is feasible, and on poorer quality land they breed cattle. These farms are usually run by one of the neighbors or someone else hired to look after it. They constitute 12% of the sample.

## II. Strategies developed during production factor imbalance

Problem	Strategy	Objective
<b>Labor</b> Scarcity of family labor: - due to aging - due to absence of head of family due to generation change - due to the inexistence of family members to continue the operation	Contract external labor, either salaried or bartered.  Leasing part or all of the property	Continue producing and maintain possession of the land until a generation change occurs
Family labor in excess of farm reproduction possibilities.	Migration/expulsion of unuseful family members. Agreements among family members about who stays and who migrates.	Not to compromise the possibilities of the reproduction of the family and farm. Maintain family ownership of land.
Migration of family members due to structural deficiencies in the country (studies, health, etc.)	Participation/labor on weekends and vacations Participate in special and traditional tasks: branding, vaccinations, slaughter, sausage and preserve making, etc. Take part in rural cultural and recreational activities.	Socialize and include youth in a rural lifestyle so that they will later return to the country.  Transmit a cultural heritage.
<b>Capital</b>		
Lack or reduction of initial capital.	Leasing out of part of the land.	Direct lease income towards new installations, animal purchases.
<b>Land</b> Scarcity, need for expansion.	Lease land Barter labor for use of land.	

Problem	Strategy	Objective
Income insufficient for family reproduction.	Temporary employment on other farms for some family members, generally male children, working with family machinery, looking after or managing other farm.  Intensification of production within the subsistence cycle, usually the work of women.	Complement family income. Obtain personal income. As much as possible provide nutritional necessities for the family. Distribute products within the domestic cycle to family members residing in the city. Sale of surplus in the city, among neighbours, country fairs etc. and with this money obtain daily family necessities apart from foodstuffs.

### Response: proposed productive models, adoption of new diffused technology packages and productive and reproductive strategies of family producers

From the time it was installed in Blanca Grande, INTA has promoted a productive model which combines dairy with beef production.

The first project abandoned by producers was the dairy. A number of factors which had not been evaluated by INTA technicians provoked this abandonment.

Problems surging from soil with rock deposits only a few centimeters below the surface resulted in the continuous flooding of land. This same feature meant that land deteriorated rather quickly from the continuous movement and trampling by the animals. Roads rendered impassable during the rainy season made transport of milk frequently impossible.

In a few cases dairy production was replaced by an intensification in cattle, sheep or pig production, or sometimes an increase in crops, etc., in order to complement family income, but this time not under the direction of INTA.

In cattle production the diffused technological models combined rotation practices with pasture production. The end goal was to augment the per hectare animal receptivity, retaining the animals for the longest possible time, maintaining a good weight increase rate and controlling all of sanitary factors which bring about a strong and healthy animal. A group of these techniques imply a greater per hectare capital investment, for example the planting of artificial and non-perennial pastures, fertilizer use, improved watering stations, corral construction, etc. Others pertain to cattle breeding techniques such as seasonalizing breeding, early weaning, etc.

As we have indicated, families have adopted a series of strategies, above all in times of economic crisis or insecurity, and the objectives of these adaptations are as much family reproduction as they are for exploitation. In order to achieve these objectives, the majority of the producers incorporate new systems which are not promoted by the dominant economic system, some in a very small scale, and adapt new diffused technologies to the characteristics of their operations and family needs.

### III. Adaptation of productive models and technological packages

Model	Problem	Strategy	Objective
Dairy	Inappropriate soils. Transportation deficiencies.	Abandon dairy farming and dedicate to livestock production, introduction of alternative activities: pigs	
Cattle raising	Activity subject to strong cyclical variation. Low profitability.	Compensate with alternative activities. Pursue external work (for example contract labor)	
Technological packages	Implementation difficulties due to lack of capital		
Pasture implementation	Costly loans which compromise possibilities to maintain the land	Lease other land for fattening  Looking after other farm in exchange for use of pasture	Establish pastures after a few years through obtained income, without having to mortgage land
Forage reserve in the form of bails	Purchase of bailing equipment not financially accessible	Organization of neighbouring producers in order to buy equipment cooperatively	Bail at the appropriate moment and bail for other producers for a fee
Herd management			
Early Weaning	Increase in the mortality of calves due to the impossibility of constant veterinary control and attention.	Weaning of calves when they reach 150 kilos (9 months)	
Sale of calves all at once	Due to the characteristics of these farms more frequent income is needed.	Sale of calves at weaning.  Sale of remaining herd at heavier weights.  Introduce alternative activities.	Compensate low calf prices at weaning with the sale of heavier, more mature calves.  Receive more frequent income.

One can separate these strategies into three types in order to better illustrate their differences: a) strategies which are individually developed in order to overcome problems which present themselves at the production factors level, which, given the delicate equilibrium which exists among production factors in these types of farms, can compromise the possibility of reproduction; b) those strategies which emerge in a context of economic crisis or to face adverse economic cycles characteristic to principal activities, cattle breeding, which puts the viability of these types of farm in jeopardy; c) those which have been implemented with the objective of adapting new diffused technologies to their own characteristics in terms of capital endowment, land, and labor.

When situations of global crisis or adverse economic situations present themselves, the family reorganized its form of production and shows a great capacity to adapt (Buttel 1980, Lamarche et al. 1992) and undertake a series of activities, labor, etc., in order to recompensate the volume of family economic activities (Chayanov 1974).

As we mentioned previously, family producers have adopted proposed productive models as well as diffused technological packages.

Faced with productionist models that prioritized cattle production, and expected the farmer to concentrate in this activity and produce nothing else, producers conserved subsistence practices (cereals, gardens, or-

chards). They continue to produce sheep, which is primarily aimed at family subsistence and the sale of wool or perhaps a sheep or lamb not destined for personal consumption. And they have introduced new activities, for example hog production. In this manner they have been able to overcome the deterioration of beef prices, adverse cattle production cycles, and the burden of food procurement for the household.

In terms of diffused technologies, herd management is not rejected by producers but is complemented by their knowledge and readapted according to their needs and farm characteristics.

The most questioned technologies, not for their efficacy but for their suitability to farm characteristics, are those aimed at making breeding and calving seasonal<sup>14</sup>, the weaning of calves at six months of age since they never reach the 180 to 180kilogram weight recommended in this time period, the sale of production only once annually, due to income limitations; and the replacement of cows which can no longer be bred for new heifers, which they try to do but generally are not able to do for economic reasons.

The sale of products is dispersed throughout the year; a part of animals are sold at weaning, while others are kept to be sold at heavier weights (220-260 kg). This way the family receives income more than once a year.

As one can observe, economic necessity is the first factor as much in production as in commercial deci-

<sup>14</sup> Seasonalizing service means that cows are not with the bulls year-round, but in determined months. Less than one half (41.66%) of the farmers breed in October, November, December and January. A large percentage (37.5%) keep their cows with the bulls all year. The rest do it for six months, from October to February or March, or from September to February.

sion-making. This situation is compensated by the family developing a series of activities involving various family members, as we have earlier mentioned.

#### CONCLUSIONS: RESULTS OBTAINED

At this point we would like to examine the extent to which farm families have been able to achieve their objectives.

Table IV is a summary of income, costs, and net profits of families included in our study.

Table V shows investments with income generated from agricultural activities in the last fifteen years for the family farms studied, according to the categories which we described in section "Family producers and their family".

As one can see, when a surplus was obtained, none of the families were able to buy additional land even when it was an objective priority. This of course would be due to high land prices in relation to the profitability of cattle raising. The average yield per hectare in the zone from 1970 to 1990 was US\$301, which is equi-

valent to 663 kilograms of calves. The average from 1984 to 1993 was US\$300 and is equivalent to 505 kilograms<sup>15</sup>. The extremely high loan interest rates and the fact that the minimum quantity of land which can be sold is around 200 hectares makes it extremely difficult for farmers to acquire additional land.

Farms in category 1 made investments which allowed them to incorporate new means of production and maintain the smooth function of the rest, which is to say that they have achieved reproduction objectives<sup>16</sup>.

In the case of category 4, the principal income of the family is acquired by leasing of their land. Evidently this income is completely consumed in order to satisfy basic family necessities and it is these farms which are in the most danger of disappearing.

In category 2 we find farms who have leased out their land because they lack capital or in order to incorporate improvements, acquire new machinery or enlarge their herd. One can observe that their objectives are being achieved.

If the results summarizing income, expenses and profit margins shown in Table IV are compared with estimates of other studies<sup>17</sup> which estimate that the an-

IV. Summary of income, costs, and net profits (Blanca Grande-Espigas) Deflated Values in \$ according to IPMNG 1994

Farm category	A	B	C	D	E
<b>Net income</b>					
Calves	15,167	4,056.5	7,874		3,937
land 2yr. old					
Heifers		11,174.4			
Cows			1,365	12,177.5	
Other cows	2,871	4,307	2,728		
Sheep		419		279	
Lambs		1,904			
Ewe Lambs				465.6	
Wool	2,661	2,933	1,138	2,095.2	314
Pigs	8,870				
Hogs	972				
Wheat				1,974	
Land lease			2,267.5		4,917.6
<b>TOTAL</b>	<b>30,541 \$</b>	<b>24,794 \$</b>	<b>15,372.5 \$</b>	<b>16,992 \$</b>	<b>9,168.6 \$</b>
<b>Expenses</b>					
Feed	2,799	2,975		833	
Home purchase				14,045.6	
Health	1,218	1,246	1,559.5	351.6	241
Labor				1,606	
Commercializa- tion	966.5	1,035	562	621	
Interest	3,791	3,351	3,438	3,627	948
<b>TOTAL</b>	<b>9,756.5 \$</b>	<b>8,607 \$</b>	<b>5,559.5 \$</b>	<b>7,038.6 \$</b>	<b>1,189 \$</b>
<b>Net profit</b>	<b>20,784.5 \$</b>	<b>16,187 \$</b>	<b>9,813 \$</b>	<b>9,953 \$</b>	<b>7,979.6 \$</b>
<b>Net profit/hect</b>	<b>57 \$</b>	<b>51 \$</b>	<b>36 \$</b>	<b>55 \$</b>	<b>34 \$</b>

15 "La Nación" Journal 7-1-1995

16 "Reproduction" is understood as the capacity of farmers to maintain themselves as independent producers (Buttel 1980).

17 Interamerican foundation cited in "Reconversión en el Agro: el caso de la pequeña explotación pampeana" (Csecon 1994).

V. Number of farms which have made investments in the last 15 years according to investment type and farm category (Blanca Grande-Espigas)

Type	Farm category			
	1. (44%)	2. (18%)	3. (14%)	4. (12%) Investment
Internal investments:				
Land purchases	0	0	0	0
New installations	11	3	4	0
Animals: purchase	3	0	0	0
retention	6	2	0	0
Machinery	1	1	1	0
Maintenance: improvements	9	1	1	0
machinery	2	0	1	0
Vehicles	3	0	1	0
External investments				
Real estate	4	0	1	0
Furniture	2	0	0	0
No investment	0	1	3	8

nual net income needed to remunerate family labor is \$10,000, we can observe that cases C(2), E(3) and D(4) are below this limit.

However, if we analyze Table V, one observes that with the exception of category 4, investment during the last 15 years was possible. This signifies that if investments were possible it was because family needs were covered, which is a possibility I believe no one rejects when they study family farms.

Farmers have developed a form of production in which they generate strategies in times of crisis, self-exploiting their labor efforts, in sense of Chayanov, like that of auto-exploitation of their economic unit converting commodity production into subsistence production, as Buttel would say.

Since the family producers perceive their destiny to be tied to the farm they not only transmit economic heritage to their members but also a cultural heritage, consisting of values, norms, knowledge and in general the necessity to conserve a way of life which is characterized by the working of the land and for rural labor. This has enabled them to make difficult decisions and find alternative solutions in front of diverse demand of imposed politics which do not take the lives of social actors into account.

We do not want to give the impression that rural life in Argentina is an idyllic life. A number of macroeconomic indicators show that the viability of small farms is rapidly decreasing.

Survival under the present global economic conditions depends on the reaction capacity which social actors possess in order to implement responses which allow them to remain in the system.

These responses do not have to emerge at the individual level but should also include new collective strategies, defining needs, techniques, management, commercialization, and utilizing comparative advant-

ages which no longer come from "the best land", but from a flexible form of production, providing products to a society which prefers quality over quantity. If families utilize this potential they will be able to implement solutions which they consider most advantageous, reconstructing the damaged social fabric which global processes constantly erode.

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Arrived on 29th August 1995

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*Redakce časopisu*

# AGRARIAN POLICY IN BULGARIA: CLASH BETWEEN VIABLE INDIVIDUAL MODELS FOR SURVIVAL AND CONTRADICTIVE STATE POLICY?<sup>1</sup>

## ZEMĚDĚLSKÁ POLITIKA V BULHARSKU: STŘET MEZI ŽIVOTASCHOPNÝMI INDIVIDUÁLNÍMI MODELY PRO PŘEŽITÍ A PROTIKLADNOU STÁTNÍ STRATEGIÍ?

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**ABSTRACT:** Decollectivization and privatization in agriculture of the countries from Central and Eastern Europe are difficult to explain in theoretical and practical models of imitation in the period of transition to market economy. In Bulgaria the search for strategies for survival of agriculture and rural areas after the crash of the centralized economy is difficult because it is in conflict with non economic political and ideological postulates often in opposition to the economic rationality and market economy. For instance there is no other country from the Eastern Europe (except Russia and ex soviet republics) where the question of the ownership of land is put to such a sharp political partiality and the whole agricultural policy is dealing just only with it. The process of restructuring of agriculture continues and the new social actors in private areas are established; private farm operators, small commodity producers, family farm owners, land lease of big areas, entrepreneurs in agribusiness, private companies for joint cultivation and other teamwork. Although relatively small and heterogeneous as a structure, motivation, adjustment, long-term strategies for work etc., group is the mainstay of the new free entrepreneurship and initiative generalized image of the people that dare to "dive in cold waters" of the emerging market economy in condition of general crisis. Observations and survey results show that they are young people (including the youngest) without prejudices, inclining to risk, that have strategies for their own business but unfortunately are in discrepancy with the state agrarian policy. In addition, the concept of "sustainable rural development" is not mature enough for legislators and government that make "piecemeal policy" without continuity and sustainability. A question arises: What about the individual or the group of people? How to construct and keep their own strategy and plans in this chaos and instability? Politics run over sociology but I would say (it is temporary) because the movement of transformation and restructuring of these "closed societies" can delay but cannot stop. These statements will search for an answer in the paper based on sociological survey and observations of the author.

restructuralization of agriculture, social agents, long-term strategies, sociology

**ABSTRAKT:** Po pádu centrálně řízené ekonomiky je v Bulharsku obtížné najít strategie pro přežití zemědělství a rurálních oblastí. Mimoekonomické politické a ideologické postuláty jsou často v opozici k ekonomické racionalitě a tržnímu hospodářství. Otázka vlastnictví půdy je stále předmětem vyhraněných politických diskusí a zemědělská politika se prakticky ničím jiným nezabývá. Vznikli noví sociální aktéři, především mladí lidé bez předsudků, ochotní převzít rizika. Mají vytvořené podnikatelské strategie, avšak dostávají se do rozporu se zemědělskou politikou státu. Pro tvůrce legislativy a pro vládu není dostatečně zralá koncepce trvale udržitelného rozvoje. Dnešní zemědělskou politiku lze charakterizovat jako dílčí neprovázaná opatření bez kontinuity a dlouhodobé udržitelnosti. Potom se nabízí otázka – jak mohou noví aktéři vytvářet a uplatňovat své nové strategie a plány v tomto chaosu a nestabilitě? Autorka se v tomto příspěvku, jehož zdrojem jsou vlastní sociologické výzkumy, snaží hledat odpovědi na položenou otázku. Soudí, že transformace a restrukturalizace bulharské venkovské společnosti je opožděná, ale nemůže se zastavit, i když probíhá v dosud v značně uzavřeném sociálním prostředí.

restrukturalizace zemědělství, sociální činitelé, dlouhodobé strategie, sociologie

### INTRODUCTION

Decollectivization and privatization in agriculture in the "New Democracies" are difficult to explain in theo-

retical and practical models of imitation in the period of transformation to market economy.

In Bulgaria the search for strategies for restructuring of agriculture and rural areas after the crash of cen-

<sup>1</sup> Paper presented of the XVth Congress of the European Society for Rural Sociology, Prague, 31 July–4 August, 1995

tralized economy has continued already for five years. The difficulty comes of the conflict with non-economic political and ideological postulates often in opposition to the economic rationality and market economy.

Historically, Bulgarian agriculture was based exclusively on private (family) farming, a tradition interrupted during the communist rule. Now, in a period of deep transformation of agriculture and of restoration of property rights on land to the previous owner and heirs, farming in private sector represents an alternative form of production – moreover at a time of the collapse of collective farms system.

This paper deals with some problems of agrarian policy in Bulgaria and with development of private sector agriculture in the transition to a market economy. The stress falls on the attitudes and opinions of the actors in private sector agriculture towards the strategies and changes in agrarian policy.

Open interviews and survey results serve as a basis to illustrate the attitudes and orientation of the people engaged in private farms or in other agribusiness activities.

#### AGRARIAN POLICY UNDER THE TRANSITION

In opposition to the theoretical conception of “productivism” and market economy, the agriculture as whole economy in “real socialism” was based on, an abstract, devoid of sense political slogan “for more full satisfaction of the growing needs of the population.” Instead of “sustainable rural development” the formula had been worked out of “bridging the gap between the village and town and reducing the differences between them” through their urbanization and as a result the conception had been created of “dying villages”, which in practice meant the conscious wearing away of a number of very small villages and hamlets. Thus the result was an “unsustainable”, even “destroyed” rural development.

Since the beginning of the changes, during the last five years the agrarian policy of the state has been characterized by inconsistency, lack of continuity, changeability occurring frequently and it resembles a “piecemeal policy” rather than a long-term, stable conception-program for reviving and stabilizing the sector.

For instance, there is no other country in the Eastern Europe (with the exception of Russia and ex- Soviet republics) where the question of the ownership of land is put to such a sharp political partiality and the whole agricultural policy is dealing just only with it.

For five years of political changes five stages in agrarian policy can be outlined – each of them rejecting or radically changing already passed laws, what hinders the constructive course of agrarian reform.

The first of these, *the year 1990*, was the period of status quo in term of existing and management of collective farms. All political forces acknowledged the necessity of reform in agriculture. Controversies arose on the issue of land ownership, and the alternative solu-

tions stressed political rather than economic aspects. The Socialist (former Communist) Party was in power, having gained the majority in Parliament, and was reluctant to introduce rapid and fundamental changes in the existing structures. Hence, in 1990 virtually no change occurred in agriculture.

Agricultural restructuring began with the Land Reform (LR). For this aim new Land Law – Law of Ownership and Use of Agricultural Land (LOUAL) was passed in *February 1991*. The key element of the institutional reform was related to the restoration of property rights to the original owners and their heirs.

Certain essential imperfections of law (ban of land sales for three years after appropriation and restriction as to liable customers; no changes in the nature of the plots – field, meadow, orchard etc.) gave rise to *1992 amendments*, aimed at eliminating of these restrictions which made unfeasible to achieve real structural changes at a market orientation of agriculture.

Definite changes and amendments in LOUAL have been made by the new government of the non-communist coalition – the Union of Democratic Forces (UDF) the policy of which was strongly oriented to proceeding and accelerating the restitution of the land and the land reform. This political force also could not escape from the politicization of the problem perceived by some people as a firm and staunch determination of restoring the private sector in the agriculture of the country.

For this aim, responsibility for execution has been given to the Ministry of Agriculture and the Municipal Land Commissions (MLC). Both of them were authorized to restore the property rights to the owners and their heirs in the status of “old” (real) or restorable boundaries or under plans for land reallocation.

One of the most radical provisions of 1992 LOUAL was the liquidation of the existing collective farms (TKZS). Specifically the liquidation meant dividing in the most fair and adequate way the non-land assets of the TKZS (incl. machinery) into shares among the members of the TKZS. Liquidation Councils (LC) were appointed for each village to carry out liquidation; to account for the assets and liabilities; to manage co-operative activities until the structure is completely deleted. This aspect of the land reform caused many conflicts, slowed down the reform and did not bring the desired effect.

With all these steps it was expected that Bulgarian agriculture would enter another stage of development and should speed up both the process of restoring the land to the previous owners and structural changes in agriculture through private farming or other free dispositions of productive forms/units.

In practice this process was slowed down in *1993–1994* due to a new change in government which declared in principle the continuity of the process of de-collectivization and the restoration of the land but also passed some amendments in the norms which slowed down the Land reform. Essential reasons for slowing down the pace of the Land reform are the long and

complex procedure of passing the decisions of MLC concerning the restoration of ownership rights, the slowing down of the land division by means of a plan for land division, the indication of the land by claims as well as some financial and technical reasons.

The present (5th) stage of LR began with a new political change – new socialist government and new majority in the Parliament at the beginning of 1995. One of their steps was the total revision of the main points of the LOUAL.

The most important changes and amendments to LOUAL (passed in May 1995) primarily concern some of its articles:

- an owner can only sell his/her land to a specified list of buyers in a specified order of preference – in this list the municipality and state are in the third and fourth place;
- the rights of prior land owners have been reduced in relation to so called “users” (those who were granted rights to the land by the state and built houses or villas). Whereas previously users were given rights to the land only if they had built upon it, changes give users rights to buy the land even if it is just a plot;
- the new co-operatives received the right to accept land collectively from owners without it being individually divided/allocated;
- immediately the activities of the LC were suspended, even if the liquidation of THZS assets remained incomplete.

The President and the Parliamentary Opposition appealed about the majority of the changes to the Constitutional Court (CC). The decision of the CC of June 19, 1995, was to cancel 19 amendments on constitutional grounds.

From the above account it can be concluded, that property rights to land continue to be “a bone of contention” more for political reasons than for economic ones. The use of property rights as a non economic instrument for psychological manipulation and for regulating relations between landless villagers, petty land owners and more wealthy villagers, is a major obstacle to LR and a primary cause of reversals.

This is the current situation in Bulgarian agrarian legislation and policy. Obviously, such instability and short-sightedness do not favour the stabilization of agrarian sector or the resolution of current crisis. The gross agricultural product for the period 1990–1994 dropped approximately 34 percent, which is the largest decline among various sectors of the economy.

Despite being an enormously complex and nearly impossible task, LR is very important in developing an economically viable farm structure, which will provide a stable foundation upon which those involved in agriculture can develop appropriate economic strategies.

## SURVIVAL AND VIABLE STRATEGIES DURING THE TIME OF TRANSITION

After the enactment of the new LOUAL (1991, amendments in 1992) different structures in private sector agriculture (PSA) have been created.

About 1/2 of the arable land in the country is found in the private sector (the total arable land in the country amounting to some 4,642,700 ha). In 1994 the arable land in the private sector of agriculture increased to about 2,000,000 ha, versus 1,038,100 ha in 1991 (Statistical handbook 1995). In 1994 the total of 72.2 percent of agricultural production of the country had been produced in the private sector (including 91.0 percent of potatoes, 86.2 percent of tomatoes, 70.0 percent of corn and over 80.0 percent of meat and milk) versus 59.7 percent in 1993 a 34.6 percent in 1991 (Statistical handbook 1995).

Irrespective of the 50 years of dominance of the socialist forms of agricultural production (something that has left a profound imprint on the psychology and behaviour of villagers thus making them apt to leave decision-making to others), in 1991 and 1992, when things were not clear yet as to the course of development of the Bulgarian agricultural sector, 11.6 percent of the whole population already cultivated their land privately. The corresponding figures for the village households as a whole and for the village households possessing (well above the average) over 8 ha of land respectively are 19.7 percent and 13.9 percent. According to the data from 1994 survey on social conflicts in the transition, 17.1 percent of rural respondents were willing to private farming (according to the data from the 1992 Census).

The orientation motives toward private sector can be relatively shaped in two groups:

- Searching the possibilities for simple survival (SS) (the strategy arises because of increasing unemployment, result of restructuring the whole economy. This strategy was typical (wider spread) in 1991–1992, when the land reform was not yet started with the restoration of property rights to the former owners.

The varieties of SS can be found mostly among the villagers possessing the smallest, so called Personal Subsidiary Farms (PSF) and/or small private farms.

As the people go on waiting for the final completion of the land restitution<sup>2</sup> procedures, the PSF continues to exist within the limits of the small private plots adjacent to the family houses or villas. Especially they are producing mainly for the sake of meeting their own needs and only rarely and occasionally for the market. Usually these are households owning land up to 1 ha and the land is cultivated by the household members. In 1992 the income earned in more than 1/3 of rural households running these small PSF, is just additional source, and only for 7.7 percent of rural households PSF is the main source of income.

- Strategy opened to the establishment of market-oriented farms motivated their owners working for

<sup>2</sup> The average size of the land expected to be restituted in the country is between 1.8–2.5 ha.

themselves have appeared. Running a farm business with long-term perspective may be called a kind of viable strategy (VS).

This type of strategy concerns mainly market oriented farms – middle-scale and large-scale family farms, middle scale and large-scale land leased farms, agrobusinessmen of different branches. Now about 13 thousands farmers cultivate land between 1–5 ha (owned and rented) which is higher than an average. 4,000 farmers manage land of 10 ha and over. They represent 1 percent of all private farmers but cultivate 27.0 percent of all privately managed land (Savova 1995). All these market oriented private farms are commodity enterprises producing entirely or predominately for the market. They are actually business enterprises. Profit and not merely income is expected from them. What is the actual result, depending on market conjuncture and on other economic factors and on whether they are able to reach this aim, is another thing.

Some enterprising mostly younger people and at mature age were the first to take the risk of running a farm, family farm or larger/land lease farm etc. as a business. They saw themselves as economically independent producers working exclusively for profit and they find in agriculture a fast and easy way of making a lot of money.

An important factor that rather forced than stimulated the villagers, and not only them, to farming is unemployment which has been growing in the country since 1990 following the collapse of the planned economy. This is especially true for the greater part of rural population. The rate of unemployment is especially high in mountainous regions where unemployment in the separate villages reaches 90.0 percent of the working population.

The index of unemployment in the villages is 27.3 percent versus 18.0 in the town and 20.5 total for the country. It is almost equal for the rural men and women (Statistical handbook 1995).

According to the statistics at 31. 12. 1994 of totally registered unemployed people 86,788, unemployed higher educated people (university graduates) amounted to 22,340. 10,485 from them are engineers, 2,336 are agricultural specialists and some 2,931 are economists (Statistical handbook 1995). Many of these qualified people (not necessarily in possession of agricultural skills and knowledge) took the change of joining the private farming sector when they found themselves unemployed.

The survey (May 1995) carried out with the agrobusinessmen<sup>3</sup> confirms this issue. Main research findings showed that agrobusinessmen interviewed are recruited mainly from among the office employees (half of them) and intellectuals – mostly engineers, followed by agrospecialists who lost their job for one or another reason.

Some of them opted to stick to a strategy of survival though not always having a clear idea of the hardships and risks that would follow. "I had no other choice", i.e. mere chance has motivated one third of them. The majority started running a farm/agrofirma as a well-known business from before, completely with a clear aim. In spite of it, more of them manage small or medium sized agrofirms (Fig. 1).

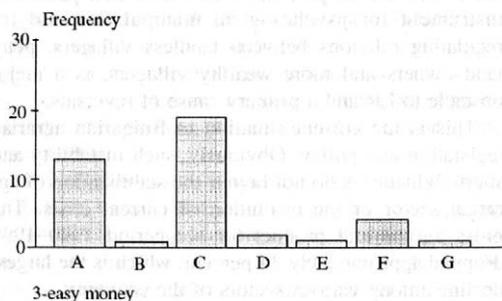
The majority of the respondents define state agrarian policy as "ruining" agricultural production, the private sector in particular.

"There is no clear government strategy and a consistent policy of agriculture. Obstacles are deliberately put in the path of private producers and entrepreneurs in agriculture. There is no fellow-feeling, our activity is intentionally impeded" (agroentrepreneur Plovdiv).

At the same time agrobusinessmen themselves attach an exceptionally great or a great importance to the future as well, to this sector of agriculture (more than two of the persons interviewed).

Conversations and interviews I have had with farmers outline the following picture of the circumstances facing them in running a farm in a period of transition of the society to a market economy and sharpening the individual strategies of the people engaged in private sector agriculture:

- More of the entrepreneurs in PSA cannot extend their activity because of waiting for land-surveying to be completed and also because of uncertainty of agrarian policy.
- The tendency of renting land for the sake of increasing the size of the farms is there but this process is hindered by the lack of corresponding legislative regulations. The rent is usually bargained privately which makes the tenant farmer feel insecure and unable to plan for a longer period of time. That is why he is unwilling to make big investments in the rented land, to take care of its ecological condition, etc.



#### 1. Motivation

A = 1 – no other choice; B = 1, 2, 3; C = 2 – business know; D = 4 – lived in a village; E = 4,5; F = 5 – other; G = 6 – cannot say

<sup>3</sup> It is a part of an on/going project entitled "The Actors in the Bulgarian Private Sector: Agriculture in the Transition to a New Economic Order".

Some of them have rented (mainly for financial reasons and because of the fact the agrarian reform has not yet been completed) 1–5 ha in average of other people's land. Fewer are the cases of renting over 5 ha of land for the sake of setting up a FF. Rare are also those who rent hundreds of hectares of land and who have created large tenant farms, similar to the big agribusiness the west.

- The intention to rent out land as a sort of income is still scarce (Table I). Anyway, there is a certain re-orientation towards such kind of business. If in 1992 only 1.4 percent of rural households have been intending to rent out, in 1994, according to the Conflict survey – they form already 7.5 percent.
- Constraining factors such as the fear of risk-taking, the sense of instability, the absence of a consistent agricultural policy and the lack of support from the state might pose restrictions on the development of private farming too.

*"One can make a living from agriculture if an adequate policy is followed by the state. Otherwise farmers won't do it..."* (a farmer from the village of Luybenova mahala).

The relations between the actors in private sector of agriculture and the state resemble the relations between a child and its step-mother. This holds true of the whole agrarian policy which has been wavering for 5 years under the influence of the political situation. The conflict between the private sector (the family farming inclusive) and the state is enclosed within the vicious circle formed by:

- high inflation and interest rates;
- the low sale prices (that cannot cover the expenses made by the farmers), especially those of cereals, milk and meat;

*"At the present our state is a 'zero'. It does not have an agricultural policy. No protective prices are imposed."*

- the lack of barriers against the cheap import of agricultural products;
- the tacit introduction of a state monopoly on purchase of some most important products and raw materials (meat, milk, cereals);

*"Some people want to see the private farmer to the utmost dependent on the monopolistic organizations. ...This is not what market economy should represent"*.

*"It is the milk-marketing organizations and the slaughter-houses that dictate the sale prices. The veterinarian services have interdicted us from selling our products on a market by ourselves. How comes that the milk that I and my family consume is OK but when I sell it to my neighbour it turns out contagious. This is a vicious circle formed by the monopoly of the state-owned dairies and the butcheries"* (a farmer from the town of Sopot).

- the mode of determining the export quotas and the customs duties which has always been to the disadvantage of the farmers and in favour of the traders, as well as the absence of a consistent policy of subsidising the agricultural sector, respectively of applying adequate mechanism for the purpose.

*"The most important thing for the state to do would be to secure certain quotas for each producer, as is the case in Western Europe"*.

The sale of the agricultural products is seen as the main source of income for many agricultural producers. In some farms this is actually the only source of income. It is difficult now to estimate how many of the private farms are making a profit, how many sustain a loss and how many break even. Many farmers in the interviews I had taken told me about the uncertainty they feel – one year turned out successful for them, the next one proved to be unsuccessful. They see the reasons for this in the sale prices, in the high inflation rate and in the speculative character of the retail prices.

*"The sale prices have fallen too low. Our deliveries of milk have not been paid for two months and we have no other purchaser to resort to... As far as the stock is concerned I will sell it to the private firm since it is paying immediately. 'Rodopa' (the state-owned firm for marketing animal products) has been for an year in delay with paying for the deliveries we have done. People do not know when they will get their money from it."*

I. Citizens with agricultural lands property and plans for its use (in %)

	Total	Land in decars (10 dec = 1 ha)				Total	Land in decars (10 dec = 1 ha)			
		1–10	11–30	31–80	80 and over		1–10	11–30	31–80	80 and over
		all citizens					citizens from rural areas			
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
To rent out	2.2	3.0	4.8	4.2	8.5	1.4	1.3	2.1	1.9	4.8
To give the land in a cooperative	18.4	23.5	41.4	47.2	38.3	23.1	20.2	37.5	44.6	39.0
To cultivate the land on their own	10.6	28.5	13.1	10.2	13.4	16.7	32.6	17.3	10.4	14.7
To cultivate the land in a cooperative	8.7	12.7	18.4	21.3	18.4	16.6	17.7	24.3	27.7	25.5
To sell the land	0.6	1.0	1.4	0.7	1.8	0.4	0.5	0.5	0.3	0.8
No plans	12.5	31.3	20.8	16.4	19.5	14.3	18.2	18.2	15.1	15.1
No land possessed	46.9					27.5			..	

The economic instability, the frequent legislative changes, the piece-meal approach in the agrarian policy-making, the absence of a state strategy for the agricultural sector, etc. make it difficult now for the PSA farms to take long-term strategic decisions.

*"We cannot run the risk of undertaking something big. I have bought a large agricultural building but I don't dare to expand my production."*

Summarizing the above discussed situation in private farming in Bulgaria, we can say that viable strategy is hardly to be defined properly as such, at the present period of crisis and economic instability. Viable strategy can be called a strategy which gives the chance for success. It aims to opening and extending not only to new activities, but also to the way of thinking of the individuals, of their inclinations towards changes, innovation and taking a risk.

Unlike VS, simple survival strategy is more passive and closed in an elbow-room of the existence, of everyday life and in concern and troubles for survival. SS could turn to VS under a protectionistic state policy, subsidizing the agricultural sector of all existing structures in the most important aspects, as well as with alternative occupations in rural areas according to the existing local natural and human resources (rural tourism, handicrafts etc.).

In my opinion viable strategy (as I defined it) can be intertwined with the concept of sustainable development (SD) – SD as a new paradigm of development "that meets needs of the present without compromising the future generations to meet their own needs" and to extend "to all the opportunity ... for a better life" (Brundtland Commission 1987).

At present the meaning of SD as a linkage of economic growth and social concern with environmental concerns is something like a "foreign body" in the individual simple survival or viable strategies for the great majority of private farmers and not only for them, oriented to earning an income or a profit or to other existential problems. It is understandable for people living in a society under transition. That is why it is very important for the idea of SD to be promoted among the people by the state through all possible ways of education, training and so on.

## CONCLUSION

Now private sector is passing through a difficult period of restructuring. The lack of adequate governmental strategy, of a policy of support and preference for the private producers may annihilate what has been accomplished so far in the private agricultural sector.

That is the reason that viable individual strategies of rural people "do not fit" to a nonviable state agrarian policy. Even if they could be viable as a project in the

long-term they fail as a practical realization or they put the farmer on the verge of collapse with a permanent risk of failure.

The clash between people working in PSA and the state concerns mainly the pace of land reform state agrarian policy and mostly the attitudes of the state towards PSA and its representatives. The clash between them is first of all in the willingness of the former to continue working in that sector and unconscious or conscious misunderstanding, lack of help and underestimating of PRA on the part of the state. At present these people do not rely on the state and everybody is doing in his own way. This is discouraging and sad. Farmers do like farming. They simply need support from the state in a clear strategy, supporting fiscal and credit policy and a stable legislation which can provide stabilization of private farms and hence the development of rural areas.

In this respect I see also the role of international institutions and organizations as United Nation, European Community, PHARE etc. and their assistance in restructuring the agricultural sectors in promotion of sustainable development in agriculture and in rural areas in New democracies.

European Community Agreement signed with Bulgaria and several other East European countries is a significant step in improving the economic relation under the condition of a united Europe.

## ACKNOWLEDGEMENTS

This paper is based on research work on the project "The Actors in the Bulgarian Private Sector: Agriculture in the Transition to a New Economic Order" granted by Research Support Scheme of the Open Society Institute, 1994.

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Arrived on 28th September 1995

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# ROZLIČNÉ ŽIVOTASCHOPNÉ MODELY A STRATEGIE PRO ČESKÝ VENKOV

## DIFFERENT VIABLE MODELS AND STRATEGIES FOR THE CZECH COUNTRYSIDE

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**ABSTRACT:** Until 1989 there had been basically one strategy for the countryside. This strategy could be labelled as the socialist productionism (orientation toward self-sufficiency in food through intensive large-scale farming in centrally planned economy, and political preferences of agriculture and farming population. The doctrine of socialist productionism governed economic behaviour of rural population and interfered with other spheres of rural life as well. The changes after 1989 gave the possibility for other strategies for the Czech rural and farming development to emerge. Hitherto negotiations concerning strategies do not indicate, for a while, the support for new views existing within fan of possible solutions. Under strong reduction of the role of the state the socialist production was altered by a kind of post-socialist post-productionism (oriented toward economic competition in market economy, politically proclaimed similarity of agriculture and industry). The habits in economic behaviour of rural and farming change very slowly under the pressure of this new orientation. Although the role of state minimized, the reliance on the state is deeply rooted in this behaviour. Post-socialist post-productionism is typical by discernible domination of economic points of views over other ones (ecological, cultural, social) in thinking over the future. The paper addresses the impacts of the new prevailing economic orientation on life in rural communities. The impacts are confronted with intentions of policy-makers. Also the question how far policy-makers reflect the impacts of agrarian policy is discussed. The paper also deals with the issue whether the prevailing strategy (compared to other variants) is a viable model for the countryside of the XXIst century.

the countryside, agriculture, agrarian policy, local agrarian structure, local development

**ABSTRAKT:** Do roku 1989 existovala pro české zemědělství v podstatě jediná strategie, kterou lze označit jako „socialistický produkcionismus“ (orientace na soběstačnost prostřednictvím intenzivní velkovýroby ve státně řízené ekonomice a politická preference zemědělství a zemědělců). Jeho doktrína ovládla nejen hospodářské jednání venkovanů, ale zasáhla i ostatní sféry venkovského života. Změna po roce 1989 dala možnost objevit se různým strategiím vývoje českého venkova a zemědělství. Dosavadní vyjednávání o těchto strategiích vývoje neukazuje zatím na podporu nových pohledů existujících uvnitř variantního vějíře možných řešení. „Socialistický produkcionismus“ byl pod vlivem silné redukce role státu v zemědělství nahrazen jakýmsi druhem „post-socialistického post-produkcionismu“ (orientace na ekonomickou konkurenceschopnost v otevřené tržní ekonomice, politicky proklamovaná podobnost zemědělství s průmyslovými odvětvími). Pod tlakem této nové orientace se návyky v hospodářském chování zemědělců a venkovanů přetvářejí jen pomalu. Přestože role státu je minimalizována, spoléhání na stát je v tomto chování hluboce zakořeněno. „Post-socialistický post-produkcionismus“ je typický výraznou dominancí ekonomických hledisek nad všemi ostatními (ekologické, kulturní a sociální) při přemýšlení o budoucnosti. Článek se zabývá dopady této nové převládající hospodářské orientace na život ve venkovských obcích. Tyto dopady jsou konfrontovány se záměry decision makers. Pozornost je věnována i otázce, jak dalece reflektuje decision makers dopady zemědělské politiky. Zároveň se článek zabývá otázkou, zda je tato současná převládající strategie (ve srovnání s dalšími variantami) životaschopným modelem vývoje venkova pro 21. století.

venkov, zemědělství, zemědělská politika, místní agrární struktura, místní rozvoj

Státem řízená a podporovaná ekonomika je nejvýraznějším rysem strategie vývoje, který jsme nazvali socialistickým produkcionismem. V zemědělství se k této obecné charakteristice připojuje orientace na soběstačnost ve výrobě potravin, koncentrace zemědělství, to že i za cenu nerentabilního hospodaření. Postupující intenzifikace zemědělské velkovýroby nerespektovala ekologická hlediska hospodaření s přírodními zdroji na ven-

kově. Zemědělská velkovýroba mnohdy překročila únosnou mez z hlediska optimální organizace práce. V souvislosti s politickou preferencí zemědělců, výraznou od 70. let, prudce vzrostl sociální status zemědělského povolání. Na konci 80. let shledáváme skupinu zemědělců jako jednu z nejvíce spokojených se svou životní situací. Od dělníků, nejpodobnější sociální skupiny podle charakteru práce, se zemědělci nepříliš od-

lišovali v podmínkách práce, odměňování a v úrovni hmotné spotřeby.

Obecná tendence k destratifikaci české společnosti podle kritéria příslušnosti k ekonomickému sektoru byla provržena diferenciačním procesem, probíhajícím podle teritoriálního kritéria. Ve venkovském území a sídlech se projevovaly nepříznivé především následující fakty:

- v důsledku centrálního řízení společnosti stagnovala urbanizace venkovských sídel především v oblasti občanské vybavenosti a lokálních občanských iniciativ;
- v důsledku koncentrace národní ekonomiky stagnovala síť závodů tradičního venkovského průmyslu a nový prakticky nevznikal, rozvoj služeb na venkově se povětšinou omezil na základní služby komunálního charakteru a pro osobní spotřebu;
- v důsledku strategie socialistického produkcionismu v zemědělství pozbyla malá venkovská sídla poslední zbytky vlastní hospodářské infrastruktury – střediska zemědělské výroby; malé vesnice se staly „nochehárnami“ s omezeným spojením s regionálními centry.

Potom vývoj kvality života, měříme-li ji příležitostmi zaměstnání, vzdělání a možnostmi plnění dalších každodenních či pravidelně se opakujících potřeb, ukazuje více na růst rozdílů mezi měšťany a venkovany než na sblížení, což bylo od socialistické společnosti očekáváno.

Po roce 1989 se paradigma socialistické organizace české společnosti obrací jinam, k historicky osvědčenému principu liberalistické organizace. Dále budeme sledovat, jak se tato změna projevuje ve venkovských komunitách a jak se promítá do zemědělské politiky.

První náraz změny lze pozorovat ve společenském ovzduší na prahu nové etapy vývoje. U nás má dnes místo jakási verbálně proklamovaná, v praxi ne zcela realizovaná podoba thatcherismu<sup>1</sup>. Uchytila se na většinovém odporu ke státnímu kolektivismu, který v minulosti bránil jakékoli osobní a místní iniciativě. Dnešní reakce na nadměrný paternalismus a kolektivismus spojený s všudypřítomnou státní kontrolou je přehnaná. R. Dahrendorf ji pojmenoval jako „agresivní individualismus“. Můžeme se tedy domnívat, že jeden extrém (státní paternalismus) vystřídal druhý extrém (agresivní individualismus)? Nemá to tak jednoduché. K soudobému českému agresivnímu individualismu totiž také patří: „Co si dovoluji já jako hráč, upírám tobě jako protihráči“. Jestliže hráč nezvládne situaci ve svůj prospěch, dovolává se pak státních institucí jako rozhodčích. Zkrátka, rezidua státního paternalismu se mísí s narozeným agresivním individualismem. Chybí umění vyjednávat a hledat dohody partnerů. Osobní zisk bez ohledu na zájem a prospěch druhého patří k nejčastějším motivům chování. Jen ti nejdůležitější se dnes neobávají proklamovat solidaritu a jiná než ekonomická hlediska věcí.

Takové společenské klima je na venkově modifikováno vlivem sociálních vztahů, které nejsou anonymní

a vlivem husté sociální sítě, v níž hraje stále velkou roli příbuzenství a sousedství. Typ solidarity na venkově a neformální sociální kontrola členy venkovského společenství mají moc omezit agresivnost individualismu. Na venkově (ve srovnání s městem) se tudíž méně setkáváme s dravostí včetně větších hospodářských deliktů. Nechybí tam běžné lidské nedostatky v hospodářské etice – „šizení v malém“, nepříliš velký ohled k zákazníkovi... Jednou z velkých brzd rozvoje podnikání na venkově je neumění přemýšlet dopředu a překonat mentalitu tzv. „melouchářů“.

Mezi zjevné bariéry místní iniciativy v hospodářské i občanské oblasti života na venkově patří:

- Illner (Illner 1992) poukazuje na to, že střední vrstva podnikatelů na venkově nepůsobí jako opora místního politického a sociálního života. Naše výzkumy potvrzují, že to platí dodnes. Pro nároky kladené na firmu ve fázi ustavování se místní podnikatelé v občanském životě angažují minimálně.
- Po polovině roku 1991 (etapu „euforickou“ vystřídala běžná každodennost) se zmenšuje skupina ochotných participovat v místním veřejném životě. Někteří z aktivistů z let 1989–1991 odešli do centrálních politických nebo administrativních funkcí či do sféry soukromého podnikání. Občanská angažovanost se dnes jeví jako nevděčná (finančně nepříjemná a sociálně obtížná).
- Kulturní kapitál, jímž místní aktivisté disponují, má slabiny. Oni mají často relativně nízké subjektivní dispoziční a tým z malých obcí chybí často i nezbytná profesní kvalifikace. Přítomnost není rozvinuta síť služeb regionálního správního poradenství. Navíc, pro důležitá rozhodnutí o místní politice chybí informace o strategiích regionálního rozvoje.

V této nesnadné situaci se rodí nové strategie pro rozvoj venkova a zemědělství, odlišné od minulých strategie socialistického produkcionismu.

Na celostátní úrovni se vytváří zemědělská politika. V současné době je vypracováno šest jejích variant. Liší se od sebe podle váhy, která je přisuzována potřebě stanovit práh potravinové bezpečnosti a potřebě plnit prostřednictvím zemědělství takové funkce jako je např. ochrana krajiny, stability sídla a další. Lze pak v zásadě rozlišit tři skupiny mezi účastníky diskuse o zemědělské politice. Jeden proud tvoří část politiků, kteří se domnívají, že opatření k podpoře zemědělství mají být stanovena až po přímé konfrontaci s vnějším trhem. Druhý proud (odborníci) lze označit jako globalizačně ekonomický. Propaguje vysokou produktivnost zemědělství a jeho konkurenceschopnost za cenu zrušení zemědělské výroby v méně příznivých podmínkách. Řešení nepříznivých sociálních dopadů ponechává na nástrojích sociální politiky. Je ochoten do značné míry respektovat ekologické aspekty výroby

<sup>1</sup> Jeho pravá anglická forma je označována jako autoritativní populismus, apelující na lidové sentimenty mnoha způsoby – útoky proti státnímu kolektivismu, podporou svépomoci a individuálních iniciativ (populistická orientace), pokusy zdisciplinovat odbory, drsnou ekonomickou medicínou, podporou státu práva a pořádku (tj. autoritativními podtóny k populistickým sentimentům – Giddens 1989).

potravín, pod tlakem legislativy EU. I pro třetí skupinu je prioritní ekonomická rentabilita zemědělství. Nazvali bychom tento proud jako regionalizačně humanistický. Bere v potaz také regionální a sociální aspekty, které by neměly zůstat stranou cílů a nástrojů zemědělské politiky. Druhý ze jmenovaných proudů (globalizačně ekonomický) je většinový.

V restrukturalizovaném zemědělství pokračuje tendence k intenzifikaci. Její prosazování může ohrozit vznikající drobný a střední stav. Odborníci ze třetího proudu (regionalizačně humanistického) soudí, že při této tendenci bude pokračovat sociokulturní úpadek venkova, nastartovaný v minulém období. Zdá se, že dřívější malé akcentování ekonomických principů je pouze nahrazeno malým akcentováním ostatních aspektů zemědělského hospodaření (ekologických, sociálních). Proto soudobou převládající strategií nazýváme „postsocialistickým postproduktivismem“.

Obecná situace je reflektována na místní úrovni. O současném stavu vytváření místních rozvojových strategií můžeme říci, že jsou vytvářeny více na základě intuitivního tušení a „zdravého rozumu“ než s oporou o odborné analýzy komplexnějšího charakteru. Nechybí urbanistické studie, chybí ostatní. Pokud jde o hospodářský vývoj, je víceméně spoléháno na rozvoj soukromého podnikání, kterému obce pomáhají tím, že poskytují stavební parcely či objekty a nebrání podnikatelům uskutečňovat jejich záměry, případně poskytují úlevy na daních či v nájmech. Vznikající podnikatelský stav však není schopen pojmut pracovní síly uvolňované ze zemědělství a příp. z blízkého průmyslu. Zemědělci jsou navíc handicapováni ztíženou schopností rekvalifikace. Všech venkovanů se dotýká omezování místní dopravy, což nedovoluje přizpůsobit se pracovnímu režimu zaměstnavatelů ve městech.

Prostředí, které se vytvořilo uplatňováním principů liberálního hospodářství v zemědělství, způsobuje, že venkovské obce nespátňují jádro svého příštího rozvoje v zemědělství<sup>2</sup>, ať jde o obec jakkoli velkou a s jakoukoli geografickou polohou a přírodně klimatickými podmínkami. Hlavními argumenty v tom jsou postavení zemědělství v soudobé společnosti obecně a nestabilita zemědělské politiky v ČR konkrétně. Na takovém postoji nic nemění ani historické dědictví – bohatá rolnická minulost, která je v některých obcích dodnes patrná. V největší nevýhodě jsou dnes totiž obce, které byly pracovními příležitostmi odkázány právě na zemědělství, zároveň jsou vzdáleny od regionálních center, mají nepříznivou polohu ve vybudované dopravní síti a nejsou turisticky atraktivní (příp. jsou atraktivní jen v sezoně). Obce samy pokládají za své nejhůře řešitelné bolesti následující záležitosti:

– nedostatek pracovních příležitostí v místě (na nich závisí životaschopnost místního trhu);

- technická infrastruktura vyhovující potřebám podnikatelů (je podmínkou pro případné záměry vytvořit v místě více pracovních příležitostí);
- údržba místního stavebního fondu, zejména kulturních památek (lákají turisty, ale účelové státní dotace jsou naprosto nedostačující);
- infrastruktura pro bydlení na úrovni městského standardu (obce mají zájem o udržení atraktivního bydlení).

Z uvedeného vyplývá, že ve venkovských obcích (kromě malých satelitních sídel) je jádro oživení spatřováno hlavně v pracovních příležitostech v místě. Jaký je vývoj v tomto ohledu?

V zemědělství jsme pozorovali několik typů dosaďadního vývoje, které se dělí na podtypy:

1. typ (běžný, týká se pouze obcí, kde hospodařilo ZD)

*„Kolektivní forma hospodaření zůstala zachována“*

- podtyp 1.a (méně častý): v místě vznikla konkurence dalších, privátních forem hospodaření
- podtyp 1.b (častější): v místě nevznikla konkurence dalších, privátních forem hospodaření<sup>3</sup>.

Tento typ vývoje je charakteristický tam, kde novodobé družstevnictví založilo dobrou tradici, kde členové managementu v transformačním období neprojeřili snahu rozbit družstvo. Dnešně fáze vývoje směřuje buď ke druhé transformaci (tj. k přeměně družstev na obchodně společnosti) nebo k relativně stabilizaci družstva. V horizontu dalších 5–10 let se pravděpodobně projeří, zda tato tendence ke stabilizaci je trvalá či přechodná („zatím družstva ještě žijí z dřívě vytvořeně podstaty“).

2. typ (méně běžný, typický pro případ státních statků a část ZD)

*„Kolektivní forma se rozpadla a byla nahrazena privátním hospodařením většího (cca 500 ha a více) a středního rozměru (cca 100 až 500 ha) ve formě podnikání fyzických osob, jejich sdružení a společnosti“*

- podtyp 2.a: v místě vznikla konkurence více subjektů
- podtyp 2.b: v místě nevznikla konkurence více subjektů.

Tento typ vývoje je charakteristický pro případy privatizace státních statků a pro ta ZD, kde některý z členů managementu uplatnil snahu získat pro sebe lukrativně část sdruženěho majetku. Téměř vždy při převodech majetku došlo k jeho obrovskému znehodnocení („výprodeji“). V obou případech vznikly „pocivě“ a „nepocivě“ nové podnikatelské subjekty, pokud jde o jejich skutečný zájem hospodařit či jen nabytí zisku dalším vykořisťováním získaněho majetku.

3. typ (nejméně běžný, typický pro případ státních statků a část ZD)

2 V rámci řešení dvou výzkumných projektů („Agrární změny v kontextu obnovy a rozvoje venkova“ a „Zaměstnanost na venkově a obnova venkova v postsocialistické středně Evropě“) jsme sledovali celkem 14 obcí.

3 Za konkurenci nejsou považována samozásobitelská hospodářství.

### **„Kolektivní forma se rozpadla a byla nahrazena privátním hospodařením malého rozměru (cca do 100 ha)**

Tento typ vývoje je charakteristický tam, kde se nenašli aktéři, kteří by pro osobní prospěch či pro prospěch nějaké korporativní formy chtěli udržet větší zemědělský podnik.

Pro všechny typy vývoje všeobecně platí, že za vznikem větších a středních zemědělských hospodářství stojí zemědělství aktéři minulého režimu (vrcholový a střední management). Vznik menších zemědělských hospodářství vyrábějících pro trh (cca od 10 do 100 ha) je častěji podmíněn restitucemi, které se zpravidla kombinují s praxí aktérů v zemědělství (v dělnických povoláních nebo ve středním managementu). Každý z uvedených typů přeměny místní agrární struktury znamenal hluboký zásah do místního života, přinejmenším do zemědělské zaměstnanosti. Místně se snížila o polovinu až o dvě třetiny. Ti, co v zemědělství stále pracují, přeměňují pomalu pracovní návyky k větší odpovědnosti a výkonnosti. Je časté, že část zemědělského majetku (půda, objekty) leží ladem. Nepoctivost provázející vznik nových firem je většinou spojena s aktéry, kteří nepatří (příp. patří jen krátce) k místní komunitě.

Výrazná změna v zemědělské zaměstnanosti má spíše výjimečně zřetelný dopad na místní nezaměstnanost. Výjimku tvoří obce s výše uvedenými charakteristikami. Částečně je to tím, že privatizace místního průmyslu není ukončena. Od ní se také očekává uvolňování pracovníků. Poptávka po pracovních silách v rámci celé oblasti vyjždění za prací se prakticky nesnížila. Dochází jen ke změně její struktury (podle firem, podle profesí). Nové pracovní příležitosti mimo zemědělství vznikají přímo v obcích v počtu, který zdaleka nevyrovnává počet rušených pracovních příležitostí v zemědělství.

Jestliže tedy hypotézu o jádru místního rozvoje v místních pracovních příležitostech přijmeme jako opodstatněnou, musíme připustit, že se dnes potvrzuje tendence k upadání venkovských obcí. Rozvoj drobného podnikání, který se omezuje na oblast řemesel, obchodu a každodenních služeb, je spíše jen kosmetickou úpravou obcí. Dodejme ale, že zmíněná tendence je ovlivněna privatizací, která již proběhla v zemědělství, ale často ještě neproběhla v průmyslu. Vzhledem k tomu, že české a moravské obce mají smíšený (průmyslově zemědělský) charakter, bude možné tuto tendenci potvrdit či vyvrátit cca v horizontu do pěti let.

### **ZÁVĚR**

V jednotlivých obcích se v dnešní fázi vývoje vynořuje mnoho nepředvídaných faktorů, které souvisejí s privatizačními hospodářstvími. Působí tak, že mohou zvrátit

trendy vývoje obcí, odhadované na základě minulé a současné situace.

Je příznačné, že faktory materiální povahy jsou v obcích zřetelně uvědomovány jako prorozvojově nebo protirozvojově působící. Již méně jsou takto pojímány faktory patřící ke kulturnímu kapitálu (profesní kvalifikace a subjektivní dispozice reprezentantů obce). Co je pak zcela nedostatečně uvědomováno, to jsou faktory sociálního kapitálu vázané na moderní typy sociálních sítí (na nich jsou budovány funkcionální sociální kontakty a vztahy). Výsledkem potom je vytváření místních rozvojových strategií podle zdravého rozumu, bez opory o fundované poznatky z řízení územního rozvoje a rolí obecní samosprávy v tom. Takový nedostatek má charakter „postsocialistický postproduktivistický“. Vychází totiž z návyku na všeobjímající centralizaci lidských činností, akcentu na materiálně a z návyku na preferenci politického před kulturním a sociálním kapitálem.

Z celostátní úrovně proniká na venkov zejména zemědělská politika. Většinový příklon ke globalizačně ekonomickému pojetí se promítá v neochotě uznat polyfunkčnost zemědělství (tj. výkon jeho mimoprodukčních funkcí v oblasti životního prostředí a rozvoje venkova). Stát nemá zájem výkon těchto funkcí hradit. Ekonomický přístup neochotný kompenzovat ekonomickou ztrátu mimoprodukčního typu hospodaření může vést k opuštění půdy. Tento zatím vítězný extrémně ekonomický přístup k zemědělství považujeme za postproduktivistický fenomén.

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Došlo 29. 8. 1995

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# FARM WOMEN IN CANADA, NEW ZEALAND AND AUSTRALIA REDEFINE THEIR RURALITY<sup>1</sup>

## ZEMĚDĚLSKÉ ŽENY V KANADĚ, AUSTRÁLII A NA NOVÉM ZÉLANDĚ REDEFINUJÍ SVOU RURALITU

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**ABSTRACT:** This paper focuses on rural women's networks in Ontario, New Zealand and Australia. It investigates three issues: the social contexts in which farm women in Canada, Australia and New Zealand have developed new networks since the late 1970s; the responses of farm women in each country to the changes in the agricultural industry in the last two decades; and the way farm women's organization are responding to contemporary changes in rural society. In the concluding section, the farm women's movement is interpreted in terms of agency and structure. It is suggested that the establishment of organizations that can speak for farm women at government levels has countered their deep sense of marginalization and alienation within their industry. In keeping with the dynamic nature of contemporary society, farm women's organizations will need to be flexible and adaptable in order to facilitate quick responses to rapidly evolving economic and social issues.

farm women, rurality, networks, rural society, agriculture

**ABSTRAKT:** Práce je zaměřena na zájmové skupiny rurálních žen v Ontariu, na Novém Zélandě a v Austrálii. Zkoumá tři okruhy: sociální kontext, v němž zemědělské ženy v Kanadě, Austrálii a na Novém Zélandě budovaly od konce 70. let své nové zájmové skupiny; reakce zemědělských žen v těchto zemích na změny v zemědělské výrobě v posledních dvou desetiletích a způsob, jakým odpovídají organizace zemědělských žen na současné změny rurální společnosti. V závěrečné části práce je hnutí zemědělských žen hodnoceno z hlediska činnosti a struktury. Autorka dochází k závěru, že vytvoření organizací, které jsou schopny hájit zájmy zemědělských žen na vládní úrovni, vyrovnávalo jejich hluboký pocit, že jsou přehlíženy a trpí odcizením v rámci vlastního odvětví. Organizace zemědělských žen budou muset, v souladu s dynamickým charakterem současné společnosti, být flexibilní a adaptabilní, aby pomohly rychle reagovat na prudce se vyvíjející ekonomické a sociální problémy.

zemědělské ženy, ruralita, zájmové skupiny, rurální společnost, zemědělství

### INTRODUCTION

Mormont (1990) argued that 'rurality is a state of mind'. Family farming in the advanced Western economies has been in a state of fundamental restructuring for the last couple of decades. Individuals, families and communities in rural areas have needed to respond to developments in biotechnology and in world trade patterns, and to economic policy shifts of governments. As in all epochs, change begets resistance, and people with interests in common band together to defend and promote those interests. But economic and technological changes have not been the only transformations affecting rural society during the last generation. Western society has also seen a fundamental shift in how women are perceived, and perceive themselves. Thus, within the farm and agricultural context, these

difficult economic times have been compounded by new challenges and opportunities for individuals and social structures at all levels, as women seek to explore new relationships and roles.

Since the late 1970s, the concerted actions of certain farm women in Canada, New Zealand, and most recently in Australia, have demonstrated a dramatic shift in their relations with the conditions of rurality in which they live their daily lives. This paper describes the various ways in which farm women in these countries have sought to mobilize, through old and new networks for women, around issues of concern to them. It then compares the farm women's movement in the three countries by posing three questions:

— What were the social contexts that gave rise to new farm women's movements?

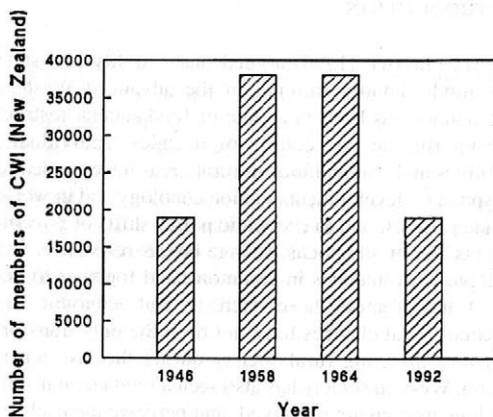
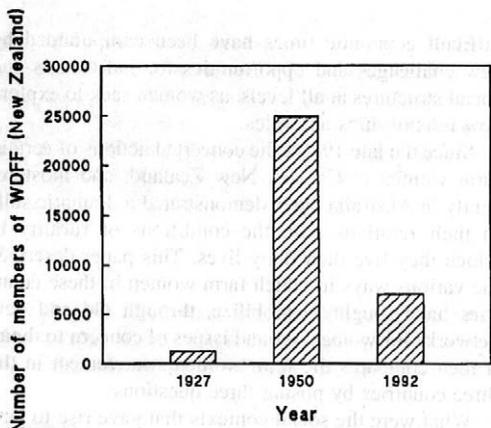
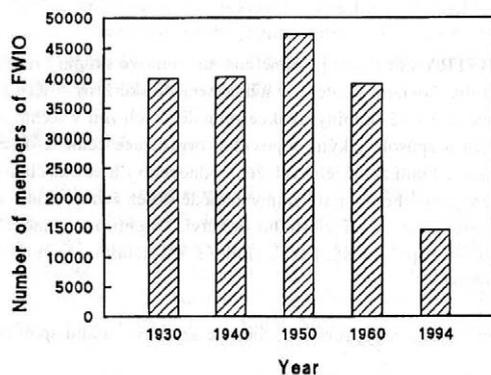
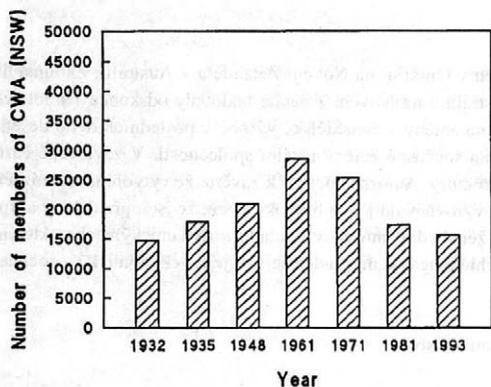
<sup>1</sup> Paper presented of the XVth Congress of the European Society for Rural Sociology, Prague, 31 July–4 August, 1995

- What were, and are, farm women's responses to changes in the agricultural industry in the 1980s and 1990s?
- How are farm women responding to contemporary changes in rural society?

Rural women in all three countries have a long tradition of commitment to rural women's organizations (Theather 1995). Ontario saw the establishment in 1987 of the Women's Institute (WI) movement (A m b r o s e 1994), which spread to England and Wales during World War 1. This movement was established in New Zealand in 1921 by Elizabeth Jerome Spencer, who had seen it in operation in England (S m i t h 1993a). The Country Women's Institutes, as they are now known in New Zealand, were less politically active than Women's Division of Federated Farmers, which has worked alongside, but independently of, the CWI since its establishment in 1925 (S m i t h 1993b). In Australia, Grace Munro, who knew about the WI movement but refused to acknowledge it as her inspiration, established the Country Women's Association in New South Wales in 1922 (T h e a t h e r 1992a, 1992b and 1994a). Formal links between these four organiza-

tions have existed since 1929, when the Associated Country Women of the World (ACWW) was founded. Organizations inspired by the Women's Institute movement, and others that were similar but developed independently, both within and outside the British Commonwealth, liaise regularly under the auspices of ACWW, which has constituted status with certain United Nations agencies and meets in Conference every three years (ACWW 1994). The affiliated organizations tend to be hierarchically organized, are open to all rural women, and to be dominated by the domestic ideal. In Canada, Australia and New Zealand, they flourished and grew until the 1960s, when membership began a decline that continues today (see Figure 1).

In the 1970s, it was again Ontario that saw the establishment of new organizations for rural women. Farm women began to see themselves as potentially powerful social agents at levels beyond the local, traditional sphere at which rural women's organizations had operated. Through the Canadian Farm Women's Network and provincial organizations such as the Ontario Farm Women's Network, they now play a far larger part in national and federal rural and farm policy for-



1. Membership trends, selected rural women's organizations.

Sources: CWA of NSW Annual Reports; Smith, 1993a and 1993b; Harper, 1958; FWIO, 1961; FWIO, 1994

mation (Mackenzie 1992a and 1992b; Carbert 1994a and 1994b).

In New Zealand, efforts to foster a network for women in farming and associated employment were begun in 1980 with the establishment of Women in Agriculture (Glendinning 1993). Strong local groups failed to materialize. The embryo movement was swamped by the industry-wide crisis following the removal of farm subsidies and guaranteed minimum prices after the Labour Government was elected in 1984. During this period, in contrast to farm women's responses in Ontario during a severe farm crisis in the late 1970s – i.e. to network in order to lobby on behalf of their farm economy – it seems that New Zealand women in the late 1980s saw their priorities as to see their family through the crisis using existing networks. For example, with no strong competitor, the seventy year old organization of rural women, Women's Division Federated Farmers, has absorbed some of the agenda of Women in Agriculture, but it retains, and insists upon, its role as the voice of rural rather than exclusively farm women.

In Australia, the farm women's movement scarcely existed until the 1990s, except in sporadic and uncoordinated ways in Victoria (Williams 1992; RWN Victoria 1994). Government-funded programmes for rural women were founded in 1986 and 1992 respectively. In 1992, a Victorian dairy farmer, fired with enthusiasm after attending the Fifth Farm Women's Conference in Canada, resolved to try to put farm women firmly in the public eye, and to encourage the embryo movement, by staging an international conference. Eight hundred and fifty women attended this conference in July 1994 (Alston 1994a). Australian Women in Agriculture was founded in 1993 and now has representatives throughout the nation. It should be noted that Australian Women in Agriculture's recent task force on membership decided that there was 'virtually no support for the idea of a farmer only organization' (McGowan 1994, p. 3). All women involved or interested in the agricultural sector are, therefore, welcome to join, but it is clear that farm issues will remain central to Australian Women in Agriculture's agenda at least in the near future, despite the fact that the organization has more general concerns about rural communities.

The response of the older rural women's organizations in Canada and Australia to the establishment of the newer networks has been one of consternation, despite the fact that Australian Women in Agriculture, and organizations affiliated to Ontario Farm Women's Network, number their members in the hundreds rather than thousands. Because the long-established Federated Women's Institutes of Ontario, and Country Women's Associations in Australia, are finding it difficult to recruit new members, they see the effort to set up new women's networks as disloyal; as damaging to the struggle over issues concerning quality of rural life for which they have fought for so long; and – although

they would be reluctant to admit it – a portent of an end to an era in which three or more generations of women have invested creative energy and scarce time into these organizations which, to varying degrees and possibly most of all in Australia, have become part of their nation's popular culture. In New Zealand, the situation is rather different. Women's Division Federated Farmers, which is far more active in influential policy-making and lobby groups than Australia's Country Women's Associations or the Federated Women's Institutes of Ontario, is incorporating the concerns of contemporary farm women into its agenda, and its executives can see no point in an organization specifically for such women. Every support is given by Women's Division Federated Farmers to those members who wish to become active executives of Federated Farmers, New Zealand's powerful, and male-dominated, farmer organization, as it is felt that the transformation of federated Farmers, which many women feel is necessary, may thereby begin from within.

The lack of sympathy with which the older organizations regard the younger is symptomatic of the degree of transformation in rural society which has accompanied the technological and economic changes mentioned above. The rest of this paper will discuss the way in which women's organizations in rural areas have reflected the changes in their social contexts, in the agricultural industry, and in the rural sector during the latter part of this century.

#### WHAT WERE THE SOCIAL CONTEXTS THAT GAVE RISE TO THE FARM WOMEN'S MOVEMENTS?

The preoccupation with the impact of commoditization on the future of family farming overlooks the potential significance of challenges from within by women, particularly younger women, for whom the gender regime of family farming is becoming increasingly archaic and insupportable in the light of developments on the wider social canvas of gender relations. (Whatmore 1991, p. 75.)

The 'challenges from within' mentioned by Whatmore (above) involve not only challenges to how the family farm operates but also to other social structures that are part of rural society and the agricultural industry. This section will examine five different aspects of the social context, particularly relating to gender, within which the three farm women's movements developed: generational cohort differences; developments in the laws of each country; the dialectic between feminism and deep-seated beliefs about 'right and proper' relationships between the genders; instinctive responses to a sense of powerlessness and alienation; and government sponsorship.

*Generational cohort differences:* It is significant that in all three countries, the farm women's movement began in the 1970s, with the daughters of the baby

boomers. 1975, the International Year for Women and the subsequent Decade for Women, were possibly an influential stimulus. The domestic ideology had survived in the late 1940s and 1950s largely as a result of the potential for peaceful and prosperous family life to be re-established after the social dislocation of the Second World War. But, in general, the cohort of women that attained adulthood in the 1970s had different expectations from those of their mothers. Cebotarev has compiled a very clear picture of this for women in southern Western Ontario. In the words of one of her interviewees, who married in 1967, 'The older generation...did a lot of sewing, canning, knitting and other things to save money, but they did not want to be bothered with farm management problems' (Cebotarev, forthcoming, p. not yet available). But by 1984, McGhee, surveying rural women in Ontario, commented: 'the generation gap among rural women is even more pronounced than among their urban counterparts' (McGhee 1984, p. 4). A parallel situation can be identified in New Zealand. Parker (1988, p. 184), who studied the 1950s experiences of pakeha (non-Maori) women of the Waikato, argues: 'for them, the 1950s were...a continuum of cocoon subservience to an inherited set of patriarchal and matriarchal requirements'. She adds, 'When a woman through ill health or exhaustion failed to measure up, women's organizations gladly came to her aid. Few, if any, rural women, dared defy the guardians of rural standards' (Parker 1988, p. 186). The organizations to which she implicitly refers would have been Women's Division Federated Farmers and the Women's Institutes. But women's experiences in New Zealand were about to change. 'Of all those who entered secondary school in 1960, about 1 in 5 girls and 3 in 10 boys remained at school to form six...By 1974, the likelihood of girls remaining to the senior level had doubled, while for boys, it had increased by half' (Statistics New Zealand, 1993, p. 59. Form six is the twelfth year of schooling). It was in the 1960s that membership of the rural women's organizations founded two or three generations earlier had peaked (Figure 1).

To sum up, it was the young women who reached adulthood in the later 1960s and afterwards who had values and aspirations beyond the domestic sphere, and an education to match.

*Developments in the law:* It is not surprising that the late 1970s saw the establishment of Woman in Agriculture in New Zealand, as it was a decade that saw major legislative developments in that country, significantly improving women's rights and their economic and social status (Magee 1991, p. 147). Pomeroy discusses the position of farm women in the light of the 1976 Matrimonial Property Act and subsequent legislation and legal decision involving recognition of non-monetary contributions to a family business. After political pressure, in 1983 'the way was made clear for married women to have equal ownership and control of the farm business' through taxation changes (Pome-

roy 1988, pp. 8-10). For Canada, Mackenzie (1992a) discusses unjust Supreme Court decisions regarding farm women on marriage breakup that go far to explain the mobilization of farm women, a situation resolved to some extent by the Family Law Act in 1986. Shortall (1994, p. 281) agrees that gender inequity in Canada's legal system was significant, commenting: 'The combination of the Murdoch case (in 1973 Irene Murdoch was awarded a monthly payment from her husband that was below the poverty line, after contributing to the family farm for twenty years, a decision revised substantially three years later), the women's liberation movement and the motivation to organize around the farm crisis have been key features in the development of farm women's groups'. Women for the Survival of Agriculture, one of the earliest farm women's groups in Ontario, lobbied in the mid-1980s to change the policy of Revenue Canada so that a farm spouse could claim a wage for farm work and therefore contribute to the Canada Pensions Plan (Mackenzie 1992a, p. 699).

In Australia, with the farm women's movement on a national scale or even a statewide scale still in its infancy, a 1992 Joint Select Committee (JSC) of the Australian Parliament recommended treating farm property differently from other property under the Family Law Act 1975, because of the 'expectation that the farm remains in the family for several years to come' (JSC 11.47 and 11.1, quoted in Voyce 1993, p. 124). Voyce sees this recommendation as retrograde and discriminatory, and discusses the situation at length, commenting that the JSC 'is supporting the patriarchal notion of male inheritance of land and the notion that women are inherent dependants' (Voyce 1993, p. 124). The stand of the JSC is likely to be increasingly out of touch with actual income sources on farms, with off-farm income likely to continue to increase its contribution to farm family finances. What role Australian Women in Agriculture will play in this context remains to be seen. If the Canadian example is followed, considerable pressure can be expected to make the legal and financial situation of Australian farm women more equitable.

*Feminism and deepseated beliefs about appropriate gender relations:* The influence of the feminist movement on farm women is not easy to evaluate, and, in Canada, varies from province to province (Rankin 1987). Of the three older rural women's networks, only Women's Division Federated Farmers has been openly sympathetic to feminist goals. Indeed, members of the Federated Women's Institutes of Ontario are concerned about the effect of Ontario's Employment Equity Legislation on men, their preferred position being that every job should be filled 'by the best qualified person' (FWIO 1992, p. 31). Newer farm women's networks have espoused feminist causes, but with great diplomatic skill. Mackenzie (1994) has provided a detailed account and analysis of their strategies and tactics. Australian Women in Agriculture, its public image

still to be established and promoted, is already claiming 'We are not a feminist organization – we evolved in order to actively pursue any course necessary which will benefit our families and rural communities' (AWiA 1994). This commitment to farm business, family and community is the same tactic adopted by Australian Women in Agriculture's Canadian forerunners. The caution shown by farm women, when it comes to being seen as assertive, is not only because of fear of rejection by conservative farm communities. There are several additional points of view meriting serious consideration.

Farm women are concerned about diminishing – by their own emancipation – the public status and private ego of their menfolk, fragile enough, as testified by suicide rates, in the current precarious nature of agriculture in all three countries in this study without having to interpret this in gender or psychoanalytical ways. Webster (1988) draws attention to the image of the male farmer as a central symbol of American culture and masculinity. Williams (1992, p. 14) quotes an Australian farm woman as saying: 'I don't want him to be less, I just want to be more'. To take another country by way of additional evidence on this point, Brandth (1994, p. 142), studying farm women in Norway who regularly operate farm machinery, found 'several examples...of women taking responsibility for their men's masculine dignity'.

Poiner's (1979) argument is a different one. She suggested that women in Marulan, a small New South Wales country town, felt that the patriarchal system was right and appropriate simply because it was traditional. Related to this is a third consideration – that of the persistence of the domestic ideology. In 1984, McGhee found that the idea that women's appropriate place was in the home remained significant in rural Ontario.

To summarize, for all of these reasons, the new farm women's organizations have constantly stressed their loyalty to the family in order to try to avoid being labelled as radical and disruptive, a strategy that Mackenzie describes as a 'manipulation of two historically contradictory ideologies: a feminist challenge to male hegemonic control over land, labour and its product...premised...on the survival of the family farm, the site of reproduction of gender-based hierarchy' (Mackenzie 1994, pp. 101–102). It seems that this is related to sensitive motives related to the male ego, to female support of long-established views about masculinity, and to an awareness of 'old-fashioned' attitudes of many rural residents. Organizations such as Ontario Farm Women's Network, while having a clearly feminist agenda, mask their feminism. '...we are not a feminist organization' (OFWN member, quoted in Mackenzie 1994, p. 113). Women's Division federated Farmers, established since 1925 and for decades part of New Zealand's popular culture, can afford to be more assertive about gender-related issues, at the risk of arousing the ire of some of its older members, but again

selects its tactics with immense care, preferring to negotiate, within existing structures, rather than confront. I have the impression that the low key nature of the Women in Agriculture movement may reflect a greater degree of mutual understanding and support between men and women in New Zealand society than in Australia, so that confrontationalist approaches would be inappropriate and insensitive.

There has been – until the research on farm women published in the late 1980s and 1990s – misunderstanding by urban feminists of farm women's lives. Nevertheless, Carbert (1994a, p. 28) found that nearly all the farm women she interviewed in Huron and Grez Counties, Southern Ontario, 'could speak articulately and intelligibly on the subject of feminism'. However, they saw it in terms of the narrow sphere of their own domestic relations rather than as a public, political or partisan type of activity. Alston (1994b) argues that farm women in Australia – and her arguments can be extended to all farm women actively participating in running their family farm – derive occupational definition, personal fulfilment and private power from their role as pivots of the farm business and family. Rankin (1987, p. 124) echoes this for Ontario's farm women. A final, telling word on the complex nature of farm feminism can be left to Shortall (1994). She points out that the undeniably feminist goals of the Canadian Farm Women's Network are compromised by its fighting to maintain two sources of women's unequal status in the family and national contexts: the traditional family farm and the agricultural industry.

*Powerlessness and alienation:* The newer farm women's organizations should not be seen solely in terms of 'the challenge from within [family farming]' as Whatmore puts it at the head of this section. Their existence involves far more than frustration at male-dominated structures. At least two other factors should be considered. The first relates to the farm sector as a whole, not just to women. It concerns the growing sense of powerlessness that farmers, and long-standing rural residents, often feel because of current and projected future trends. Apeaile (1994, p. 400) comments 'The underlying malaise of rural life is the sense of disorder and lack of understanding about where events are leading people'. He goes on to account for some of the 'disorder and uncertainty' by the increasing juxtaposition of urban values with long-established rural ones. This can be compared with comments in a New Zealand Ministry of Agriculture and Fisheries report (1992, p. 44) that 'significant changes to the character of rural life...appear to be affecting...the sense of choice and control, for many rural residents'. Significantly, the authors go on to suggest that 'ensuring that agencies and networks are in place and sensitive to the fine line between hope and despair is important for the continuation of viable rural communities'. It can be argued that, in establishing the new farm women's organizations, women have put structures in position that enables them to combat their sense of powerlessness,

because they have created a public identity from which they can lobby collectively. And these new organizations stand for their members' mutually agreed values from the start, whereas the pre-existing rural women's organizations would have had to radically revise their image and agenda in order to incorporate those values. The current tensions within Women's Division Federated Farmers reflects precisely this problem. Of course, rather than set up or join the new farm women's organizations, many women have chosen to channel their energies through other agencies where pressing issues relating to changes in rural facilities can be directly addressed, eg. New Zealand's Plunked Society where infant health is concerned, or ad hoc pressure groups with specific foci.

The second challenge posed by newer farm women's organizations arises from the very real sense of psychological alienation that many farm women feel in the context of legal and decision-making structures concerning farming. Dickens (1994) mentions five types of alienation. Three are relevant here. One of these is alienation resulting from having little control or influence on what happens to the product of one's labour. This has been expressed by Canadian farm women in deputations to public officials, in regular 'Farm Gate Feasts' to demonstrate the price differential between farm gate and supermarket prices, and in the efforts to gain greater farm women's representation in the decision-making processes of the agricultural industry's infrastructure, including commissioning research to demonstrate and interpret the gender imbalances, e.g. *Breaking Barriers* (University School of Rural Planning and Development 1990).

The second and third types of alienation are shared by all farmers, male or female. There is frustration and anger at the power of agribusiness to control many aspects of the farm scene. Here, the time-space distanciation of Giddens seems to be the type of alienation at work. This stems 'from our knowing about global impacts but remaining relatively powerless to do anything about it' (Dickens 1994, p. 375). Finally, farm women have combated a third form of alienation, i.e. the social division of labour, by insisting on the indivisibility of social and agricultural issues, which will be discussed in section 4 below.

*Government sponsorship:* Sympathetic assistance from government has been fundamental to the progress that Canadian farm women have made towards achieving some of their goals. For an interest group to become a significant agency, it has to develop links with social structures – specifically, government – in an attempt to influence policy. Carbert (1994b) has traced the relationship of the farm women's movement with government structures set up to respond to pressures from the feminist movement in Canada. It emerges that, in 1981, just after the farm women had started to develop their networking and lobbying, Agriculture Canada established the Farm Women's Bureau in order to put into effect Ottawa's Status of Women policies as they

applied to agriculture. Carbert explains that the Farm Women's Advancement Programme, the goals of which are to highlight women's contribution to agriculture and to promote legal, political and economic equality for farm women, is now the main focus of the Farm Women's Bureau. Carbert goes on to argue that Ontario Farm Women's Network itself came into existence because of government's need for a reference group representing farm women at a provincial level. At least one key mover in the farm women's early days is now on the staff of the Farm Women's Bureau (OFWN 1991, p. 19). It was not so much a case of a lobby group trying to gain a hearing and insert its agenda into an existing one, than as the group being a vociferous section of a bigger movement – feminism – to which the Canadian Government felt it necessary to respond, ensuring all departments set up structures to implement new policies. Australian Women in Agriculture is currently exploring ways of participating in influential government advisory groups such as the Federal Government's Office for the Status of Women. Programmes funded through Ministries or Departments of Agriculture, such as the Rural Women's Networks of New South Wales, Victoria and Queensland (Australia – see Hogan 1994, and Mitchell 1994), advise rather than lobby governments. Their vulnerability is demonstrated by the significant weakening of New Zealand's Women in Agriculture when government subsidy of *WAgMag* ceased. An advantage of being self-funding, such as the Australia's Country Women's Associations (and Federated Women's Institutes of Ontario since the recent phased withdrawal of funding from the Ontario Ministry of Agriculture, Food and Rural Affairs) is the freedom to become a political lobby group if they so choose. Ontario Farm Women's Network has been in the unusual position of being funded by government to challenge government policies.

To sum up this section, it is clear that the social contexts in which the farm and rural women's organizations operate, despite their complexities, are worthwhile trying to grasp in some totality. Despite living in three different countries widely separated from each other, farm women in Canada, Australia and New Zealand, in many respects, have much in common: the cohort of women who reached adulthood around the 1960s, and now their adult daughters, both have a good education and share a determination to find a mode of life that is fulfilling and neither restricted largely to the domestic sphere nor to a form of drudgery. They participate in a petty commodity farm economy in a state of long term crisis; are applying a high level of biotechnology to their farm enterprises; are subjected to a patriarchal system of gender relations; and are caught in legal systems that are in a state of transition towards more just treatment for men and women. Within every one of these structures – from the family through agricultural regulatory boards to national legal systems – farm women's organizations in Canada have been ac-

tively attempting to bring about change that will empower them. Australian Women in Agriculture may well follow this well-marked trail when the social contexts are appropriate and when committed individuals emerge onto the public arena. And, in the formal legal system, once de jure rights are established, judicial bias in applying them may need to be addressed. As suggested by Whatmore in the quotation heading this section, neither farm women, nor the rural society of which they are a part, can expect to be immune from the progress made in transforming gender relations in Western society as a whole.

#### WHAT WERE, AND ARE, FARM WOMEN'S RESPONSES TO CHANGES IN THE AGRICULTURAL INDUSTRY IN THE 1980s/1990s?

A meaningful political economy of agriculture must incorporate an analysis of gender, centred on a theory of patriarchal gender relations. (Whatmore 1991, p. 72.)

Farm women in Ontario, Australia and New Zealand have responded to agricultural changes in the last two decades by increasing their labour and/or financial contribution to their farms; by coping privately with their own and their partners' stress; by forming their own support networks; and, in Ontario, by challenging the masculinist discourse of farming.

Whatmore (1991, p. 73) suggests that 'the farm labour process can be taken, for analytical purposes, to comprise potentially four labour circuits; agricultural labour, domestic household labour (DHL), non-agricultural farm labour and off-farm labour. The first two of these represent the principal labour circuits characteristic of farming, and the latter two (are) secondary. But this in itself is currently undergoing change with the growth of part-time farming.' Indeed, in each country the typical family farm is becoming a part-time business, or a business run by at least two people on top of other paid or non-paid, caring work.

In Canada, 40 per cent, and in Australia, 60 per cent, of family farms have at least one operator or spouse working off-farm (Fuller and Bollman 1992, p. 262; Males et al. 1987, pp. 3-5. Note the latter's reservations about the definition of 'family farm'). Motives for off-farm work may vary from personal satisfaction, to having cash in hand to buy groceries when the farm cash flow dries up (Pomeroy 1988; Walton 1991; Shaw 1993). However, 30 per cent of farm women in New Zealand considered their off-farm income essential to support farm income (WDFW 1993). A detailed analysis of Canadian farm women's contribution to the farm was made by Smith (1987) who concluded that women contributed 15 per cent of all agricultural hours worked on family farms and that 79 per cent were not paid. It is clear that spouses often replace a hired hand with unpaid labour.

Psychological support in times of stress is another crucial contribution made by farm women to their com-

munities, businesses and partners. Fairweather (1989, quoted in Gray and Lawrence 1992) draws attention to the reluctance of male farmers to seek assistance from counsellors in times of intense personal stress. Clearly, most men will turn instead to their wives or partners, if they have one, although sometimes the stress will be expressed in drink, violence or, in extreme but not rare cases, suicide. It is not surprising that some farm women's organizations were established in times of peak rural stress (e.g. the Victorian Mallee Group of Women in Agriculture - Williams 1992, p. 5). 'In difficult economic periods it would seem that it is often the women who can see more clearly the decisions that need to be taken and who provide the focused energy to bring about changes' (Webber and Rivers 1992, p. 36). Women who keep farms and communities together in times of stress themselves need networks of support, and where governments are committed to maintaining a somewhat viable farm sector, such networks need fostering and their projects need practical and financial support. It is, therefore, appropriate that in Victoria, Queensland and New South Wales, Australia, state governments have set up and financed Rural Women's Networks within the last ten years in the context of rural recession. In contrast, in New Zealand, limited government support to Women in Agriculture was withdrawn in 1991, despite ongoing severe rural community and farm stress. Independent organizations that are free to lobby politically, such as Australian Women in organizations that are free to lobby politically, such as Australian Women in Agriculture, will have to compete for government funds with official 'programmes'.

Farm women's organizations, not surprisingly, reflect rural and farm stress in their programmes. Southland's Women in Agriculture activities frequently feature stress management sessions of various kinds, and not all such events are limited to women. 'Oomph!' days (designed as morale-boosters, as indicated by the name) are well attended. In Canada, Ontario Farm Women's Network's 1993 research project into Mental Wellness was used to develop a workshop series and booklet, Voice of Needs. This aims to empower women to identify, and find strategies to deal with, problems in rural communities that give rise to individual and community stress (OFWN 1993). Farm women, through their organizations, are prepared to name problems that many rural communities would prefer not to acknowledge publicly, such as domestic violence. Indeed, it is only a farm women's group - Canadian Farm Women's Network in this case - that could have produced a video on farm domestic violence (*Fear on the Farm*, Birdsong Communications 1994) and that could be piloting ways of using it in rural communities, as it is currently doing. Other sensitive and stress-inducing issues that Canadian farm women's organizations insist on keeping in the public eye are estate planning (plans for handing over the farm), and the nature of the legal partnership between family members, including

spouses. A revised version of *Cover your Assets. A Guide to Farm Partnerships*, was brought out recently (OFWN 1994).

Not all farm women are family members. Some farm on their own. Leckie (1993) has analyzed the 1991 Census of Canada to find that there are 13,400 female farm operators in Canada, 5 per cent of the total. With the long-established farmer organizations being male-dominated, it may be surmised that some lone female farmers will find farm women's organizations to be useful support networks. Leckie argues that 'the social relations of gender (are) perhaps the most significant influence upon their daily lives as farmers' (Leckie 1993, p. 222).

In the light of recent research, it is now clear that farm women's contribution to the farm sector has long been underestimated. It is in this context that the gender imbalances on the various specialized agricultural boards and farmer's organizations on Ontario, Australia and New Zealand must be seen. Of 237 executive positions on Canadian Marketing Boards and Commissions, only 10 (4 per cent) were filled by women in 1990 (Niemán 1993, p. 27). The Ontario team that researched *Breaking Barriers* (University School of Rural Planning and Development, 1991, pp. 1-9; Mackenzie 1992a, pp. 105-106) identified various constraints preventing women from playing a more significant role. The first of these was a 'situational constraint', consisting of childcare and the triple burden of family care combined with on- and off-farm employment. The other two, 'institutional' and 'dispositional' constraints, are, perhaps, the more intractable. Their existence indicates that informal attitudes remain very powerful in the context of the agricultural industry, and that the structures that a new interest group has to consider and confront may be deep-seated structures of beliefs and conventions, in this case, relating to gender roles. Examples suggested by the research team were lack of women's inclusion into both formal and informal 'networks', social stereotyping, and women's lack of self-confidence. The editorial in the Ontario Farm Women's Network *Newsletter* that introduced the results of the study also raised the notion, held by many in rural communities, that family life and public life are not compatible, and suggested that guilt feelings, while trying to respond to all demands of 'husband, children, work, farm, friends and the woman self', were felt more deeply by women than by men (OFWN 1991, p. 2). One of the most recent publications of OFWN is a handbook of biographical data on ninety farm women, all of whom are prepared to be nominated to Committees and Boards (OFWN 1992). The Canadian Farm Women's Network has also prepared a computerized database of such women nationwide (CFWN 1994, p. 1).

In New Zealand, out of 29 Boards, Councils and Committees concerned with the agricultural industry, women were only represented on eight in the early 1990s (Ministry of Agriculture and Fisheries, 1992, pp. 34-37 and Appendix 1, p. I-II). Women's Division

Federated Farmers is encouraging members to register under the Ministry of Women's Affairs Nominations Service. The current generation of young women will need opportunities to participate more fully in the agricultural sector. Of enrolments in the Bachelor's degrees of Agricultural Science and Agricultural Economics in 1991 in New Zealand universities, 29.2 per cent were female, compared with 15.6 per cent of the total who completed those degrees in 1982 (Ministry of Agriculture and Fisheries, 1992, p. 40).

As for Australia, a feature of the opening event at the International Farm Women's Conference in 1994 was the challenge to the guest speaker, the Minister for Primary Industries and Energy, to appoint more women to producer boards, and in early 1995 he announced the Federal Government's intention to have women as 50 per cent of the representation on agricultural boards by the year 2000.

Fairweather (1992) argues that the changes in New Zealand between 1984 and 1990 amount to 'the feminization of agriculture'. Whatmore (1991, p. 71) argues that 'to understand the position of women as farm wives requires a theory of gender relations as power relations within which ideologies of appropriate gender roles are shaped and reshaped in the everyday work practices of the family farm'. (See Brandth 1994, for a detailed discussion of this). Canadian farm women, through such organizations as Ontario Farm Women's Network and its affiliates, are proving to be actively engaged in 'shaping and reshaping' the 'ideologies of appropriate gender roles' in directions closer to those of their own choosing. Australian Women in Agriculture is now engaged in the same process. And several women who have been active in Women's Division Federated Farmers in New Zealand are moving into executive and influential positions in the powerful and male-dominated Federated Farmers, i.e. working through the existing system, the preferred strategy of WDF. Gender dimensions of rurality are changing, but progress is slow and so are the changes in the perceptions, on the part of those with influence, of the need for change.

#### HOW ARE FARM WOMEN RESPONDING TO CONTEMPORARY CHANGES IN RURAL SOCIETY?

The focused issue is the efficiency of the rural system to achieve its purpose. But the larger issue is the social willingness to pay for the goods and services produced by rural enterprises based on an ongoing judgement of their importance both in the public and the private interest and on the social standards for well-being of all citizens, both urban and rural, in a nation. (Apedaile 1992, p. 419.)

It requires a sophisticated and informed world view on the part of the farm or rural woman, if she is to grasp how her local picture reflects the wider pattern of rural systems in general. Nevertheless, it is striking to note

how many such women are vitally aware of, and involved in, the interdependence of urban and rural systems described by Apedaile. They recognize the impossibility of the rural system surviving without a combination of commitment to community survival from rural residents, together with a re-evaluation, on the part of governments, of the significance of the rural system to the urban system and the national interest. However, Apedaile's model requires a crucial redefinition as 'public goods' of certain resources that are component parts of the rural system, such as water supplies. This is unlikely to happen. In New Zealand, the Ministry of Agriculture and Fisheries is blunt about its position. 'Achieving fairness for rural communities should not imply a requirement on Government to meet higher costs that it would for other, non-rural, members of society...rural communities should therefore expect to rely (as they have traditionally done) on greater levels of individual motivation and community self-reliance in achieving comparable levels of wellbeing' (Webber and Rivers 1992, pp. i-ii).

In New Zealand, it is Women's Division Federated Farmers that has been strategically placed, and willing, to extend its role in community support activities, winning contracts in 1994 covering much of the rural South Island, and North Auckland, for home-based Disability Support Services in a commercial tendering process. It should be emphasized that this is not organized on a voluntary basis, and builds on the Home-care Scheme that WDFFF has been running since the 1920s. Advantages to WDFFF include giving it a reputable base to influence future delivery of health services, and the opportunities for the women involved to develop their management and political skills.

Many of the women involved in the organizations discussed in this paper see the vision of the major farming lobby organizations in their respective province/country (the Ontario Federation of Agriculture, OFA, and, in New Zealand, Federated Farmers, FF) as being too narrow, concentrating on farm sector issues without the social context (Lapointe, forthcoming). Ontario Farm Women's Network anticipates working more closely than in the past with the OFA under the recently introduced system of compulsory farmer levies to nominated farmer organizations; it plans to accept a share of the income generated by the levies in order to work on issues formerly sidelined or overlooked by OFA, largely in the social area. In New Zealand, Women's Division Federated Farmers has struggled for years to put social issues on the agenda of FF, with some recent success. WDFFF campaigned with dogged persistence for a Ministry of Rural Affairs in the late 1980s/early 1990s. The creation of a Rural Resources section of the Ministry of Agriculture and Food, and subsequent 'broadening of focus' of MAF Policy 'from farms/orchards and agricultural industry to include the whole rural community' (Ministry of Agriculture and Fisheries, 1992, Foreword, n.p.) owes something to their lobbying.

In Ontario, responsibility for Rural Affairs was only added to the Ontario Ministry of Agriculture and Food early in 1994, but already staff-members in the Leadership and Development Section of the Agriculture and Rural Division are working closely with farm women's groups. In particular, there is a close relationship between these advisors and a new group that has emerged from former Ontario Farm Women's Network executive members. It is called Women for Rural Economic Development (WRED), and it is running training courses for women who intend to start small businesses in rural areas. This is 'a non-profit organization of rural women working to promote community economic development and renewal in rural Ontario' (source: information leaflet, 1994. See also Rock, forthcoming). There are several significant features about WRED. It is not run as a volunteer organization, but has obtained project money to cover accommodation, staff salaries and computerized communications systems. In addition, the objectives of WRED are quite different from the farm women's organizations that have been the central focus of this paper. The objectives of Ontario farm Women's Network, for example, are: *to support and strengthen the family farm and the farm family; to work to secure social, legal and economic equality for farm women in Ontario; to foster agricultural awareness and farm links between the membership and others in the larger community; and to provide a forum for discussion of issues among the membership* (OFWN, n.d., c. 1992). In contrast, WRED exists to offer a programme 'designed to support rural women in the development of new small businesses through the process of developing a comprehensive business plan' (source: information leaflet, 1994).

WRED has grown out of the farm women's movement, in that its key founders were former Ontario Farm Women's Network Directors. But these women have changed their focus, from an attempt to set the family farm on a sounder business footing, to an attempt to equip all rural women to establish alternative sources of income, on- or off-farm. WRED accepts that non-farm earnings have become an essential part of the farm economy and its directors have obtained project money to train women as entrepreneurs in small ways. In moving away from the 'farm women' focus, they implicitly accept the diverse nature of 'rural' women, and that their interests may well overlap. Their symbol has taken two forms, possibly indicating the ambiguities in its origins (see Figure 2).

In New Zealand, Women's Division Federated Farmers is aware of the urgency of farm women's needs to generate income from alternative sources, and no less than five out of the 29 sessions at the 1993 Paddocks to Parliament Forum were devoted to this area. It is also noteworthy that this organization is no longer prepared to operate entirely as a voluntary body. It requires expenses from government when invited to join government working groups, and seeks sponsorship from the corporate sector for certain activities.

## CONCLUSIONS

The 'new' farm women's organizations have now existed in Canada for nearly twenty years. It is possible to see, in retrospect, the 'moves' that have been made. A useful theoretical lens through which to view the movement is that of agency and structure. The following section owes much to the description and discussion of Giddens' work in Cloke, Philo and Sadler (1991), especially pp. 99–105. See also Teather (1994b).

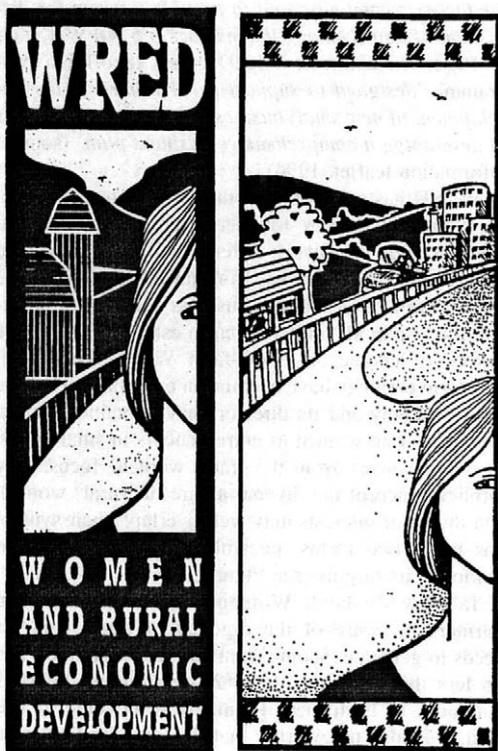
Farm women in Canada are attempting to change the social rules and to modify the distribution of power in both the farm and the wider agricultural context. As far as social rules are concerned, farm women seek, on a daily basis (i.e. a short time dimension and at a local scale) routine interactions 'at the farm door' that recognize their expertise as farmers. At a provincial and national level, in institutional contexts, they seek patterns of interaction in which women are accepted as equal partners in the business of farming, and, more broadly, in the agricultural industry as a whole.

As far as social structures are concerned, it must be recognized that the interactions just mentioned take place in the context of, indeed, may themselves com-

prise, the social structures within which farm women exist and endure, e.g. the family, the family business, the church, the industry sector organizations, voluntary associations, and provincial and national legal systems. Each structure comprises a set of rules, and each set of rules represents control over resources (people and/or the material world – see Figure 3). This control is exercised partly through the power of sanction enforced by the social/moral rules. By changing the norms, and weakening the sanctions that are implicit in a social structure, farm women challenge the legitimacy of some of the structures themselves, i.e. they challenge the authority embedded in existed untransformed institutions. This applies from the domestic to the national scale, from interactions around the kitchen table to the deliberations of government ministries. The legitimacy of institutions that are unrepresentative on a gender basis is called into question when patriarchal norms are challenged.

The perception of Ontario Farm Women's Network members, and that of academics who have studied the movement, is that they have made themselves into significant social agents, having turned a position of weakness (just a farm wife') into one of strength. A current Canadian Farm Women's Network Director writes: 'As you can see, the OFWN is seen as a major catalyst for rural community development and agricultural concerns' (CFWN, 1994, p. 9). Cebotarev's (forthcoming) paper is entitled: 'From domesticity to the public sphere'. Shortall (1994, p. 286) comments: 'Clearly farm women's groups are enforcing personal and social change in farming communities and in the farm industry'. The actions of the farm women's organizations have been purposeful and reflexively monitored, i.e. they can account for, explain and rationalize their actions. However, the motivation for their actions may well owe something to a barely acknowledged sense of alienation (as women) and powerlessness (as rural residents).

The sense of enjoyment, confidence and purpose in Canadian farm women's groups today reflects less a sense of confidence in the future of family farming than a sense that they are doing all that is possible to cope with the overarching trends that are outside their control: the relentlessly increasing role of biotechnology, less subsidization and more competition, and the continuing need for off-farm incomes in order to remain on the farm. It is clear to them that farming is becoming a lifestyle choice rather than a reasonable business proposition. Because of this sense of coping, if not of control, the women's sense of alienation from agricultural decision-makers at government and multinational corporation level, resulting in a sense of frustration and powerlessness, has been mitigated by their having their own lobby group with a certain amount of access to policy groups. A board member of one of the women's organizations investigated here described old-established farmers' organizations as 'men's egotistical forums' and commented that women prefer to focus on



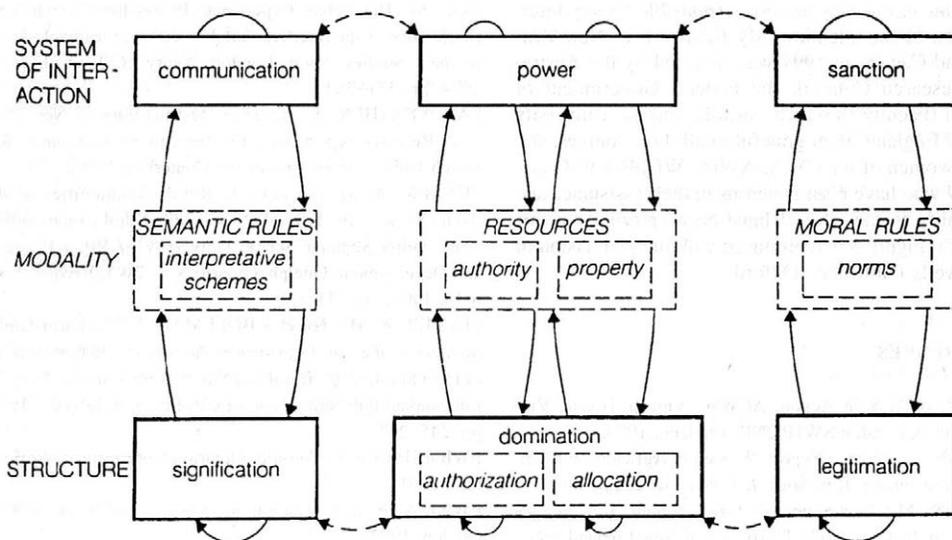
2. Women in Rural Economic Development (WRED).symbols.

Sources: WRED information leaflets and brochures

areas where they can make a significant difference: health, education and social support groups, for example. The determination of many farm women to remain in the farm sector is an expression of their commitment to retain their family farm, however marginalized in today's corporate world, propping it up, and subsidizing food prices, by the underpaid, or unpaid, labour of themselves and sometimes a spouse, fitted into very long days. Now that farm operations, from breeding to cash flows, rely on information technology, there are even more ways in which women can play a full role in managing the enterprise. The increasing interest in 'sustainable management', and the need for new structures in response, such as Landcare groups, is offering women opportunities to participate in new rather than long established structures that have traditionally been gender-biased (Roberts 1994).

The organizational style of the new Canadian, and the emerging Australian, farm women's organizations is in keeping with what might be expected in the Arena Society. This is a term coined by Fuller (1994) to sum up a postmodern society characterized by different lifestyles existing side by side but sometimes linked by an affirmation of local 'place'; by social linkages beyond the local facilitated by the use of telecommunications; by acceptance of continual change as a fact of life; and by an information overload that has the potential to keep people informed about what is going on extra-locally. Ontario Farm Women's Network's organizational style is, therefore, shallow rather than hierarchical. In this, it is unlike the ponderous struc-

tures of the older rural women's organizations such as the Federated Women's institutes in Canada or the Country Women's Associations in Australia. However, like these tenacious organizations, the affiliated groups of OFWN are rooted in localities and benefit from the strength of local loyalties. With its shallow management structure, OFWN has the potential to form task forces at a moment's notice. OFWN maintains communication links electronically, by facsimile, and, in New Zealand, Women's Division Federated Farmers in 1993 began encouraging its members to communicate with Head Office using facsimile when urgent answers were needed. Directors all have their own facsimile equipment. Australian Women in Agriculture is currently investigating teleconferencing as a means of keeping executive members in touch throughout Australia. For OFWN, there is no weight of tradition or history to set too many precedents, but tradition remains a real problem for WDFF, its many older members resisting the changes that many of its Directors feel are necessary if WDFF is to respond with flexibility and initiative to contemporary rural women's needs. Both OFWN and WDFF rely on volunteer work from heavily committed women. Neither is attracting many enthusiastic new members, and former executives of OFWN – and of New Zealand's Women in Agriculture – have already found rather different career directions. This, too, is characteristic of an Arena Society social group, which will be dynamic – adapting, mutating and giving way to the new. It will be intriguing to see how Australian Women in Agriculture will negotiate the chal-



3. The stratification model of structure.

Source: Gregory, 1986, p. 465

lenge of establishing a united and distinctive lobby group – which is essential in order to clarify for government what issues are mobilizing farm women – with the necessary flexibility in a dynamic society and rural sector.

Although the agendas have changed, some elements of the structures remain obdurate, even for this family-centred group of Canadian, New Zealand and Australian women who seek equitable treatment rather than a radical restructuring of society. It would appear that more insidious social structures – systems of beliefs deeply embedded in people's psyches – are still hampering farm women from playing an equal part in their industry's decision-making fora. And farm women from all three countries have emphasized that their potential to contribute is hampered by their shortage of time and money. Their networks have access to far more limited funds than the farm lobby organizations (e.g. OFA and FF) that have been dominated by men for decades. The time-geography of their lives is utterly different from that of their menfolk. As geographers, our understanding of the changing social and economic dynamics of the rural sector needs to be better informed about the gender issues that arise from the daily operation of its smallest but most fundamental units.

#### ACKNOWLEDGEMENTS

Several people have contributed comments to drafts of this article. I am especially grateful to Beverlie Nelson (OFWN), Jeanette MacIntyre and Jo Gravitt (WDFW), and Professor A. J. Walmsley from my own Department, but they are not responsible for my interpretation of the situation. My fieldwork in New Zealand and Canada in 1994 was financed by the Australian Research Council, the Federal Government of Canada (Faculty Research Award), and the University of New England. I am grateful to all three sources, and to the women of the CWA, AWiA, WDFW, FWIO and OFWN who have been generous in their assistance and hospitality to me while I have been carrying out this research. Figure 3 is reproduced with the permission of Blackwells Publishers, Oxford.

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Arrived on 29 August 1995

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# RURAL FEMININITY AND MASCULINITY IN TRANSITION<sup>1</sup>

## RURÁLNÍ FEMININITA A MASKULINITA V PŘEMĚNĚ

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**ABSTRACT:** This article investigates processes of gender construction when the traditional division of labour between men and women is upset. The question is how feminine and masculine identities are effected when women do men's work and aspire to an equal position with their husbands in the work on the farm. Using an interactionist perspective, analysis shows on one hand, that women construct their identities as similarity to masculinity. On the other hand, house- and care-work is still important for their self-esteem as rural women. Men do not answer women's challenge to masculinity by entering the feminine area of family work. On the contrary: Men's response is to maintain masculinity as difference and domination over femininity. The article shows how both men and women participate in producing gender by breaking down old barriers and setting new limits.

agriculture, gender, division of labour, technology

Článek pojednává o procesu přetváření smyslu „pohlaví“, když se zrušila tradiční dělba práce mezi mužem a ženou. Otázkou je, jak působí ženská a mužská identita, když žena vykonává mužskou práci a aspiruje na postavení, které je s jejím mužem rovnocenné při farmářské práci. S užitím interakcionistického přístupu ukazuje analýza na jedné straně, že žena vytváří svou identitu v podobnosti s maskulinitou. Na druhé straně, péče o domácnost a děti je stále důležitá pro její sebeúctu jako rurální ženy. Muž neodpovídá ženině maskulinitní výzvě ke vstupu do ženského prostoru rodinné práce. Naopak, muž odpovídá udržováním maskulinity jako rozdílu a dominance vůči feminině. Článek ukazuje, jak se oba, muž i žena, podílejí na hrocení starých bariér mezi pohlavím a nastolují nová vymezení.

zemědělství, pohlaví, dělba práce, technologie

### INTRODUCTION

The transformation of rural society and of the rural labour processes have created new social contexts for men and women working in agriculture, leading to the production of new gender relations. The restructuring of gender relations is a fundamental characteristic of modernity (Marshall 1994). Many women and men in rural areas have adapted to the mentality and social environments of late modernity, while others live more in accordance with traditional sex roles. This situation leads to a greater variety of gender identities (femininities and masculinities) than before. In line with feminist theory in general, there has been a conceptual shift in rural gender studies away from gender role theories towards gender identity theories (Whitmore, Marsden and Lowe 1994). This is a many-faceted shift, one of the most important elements being the understanding of gender not as fixed, but as unstable and fragmented social categories formed within a social and historical context, and accomplished through praxis (West and Zimmerman 1991).

In this article two concepts are central in understanding the formation of social identities. These are the concepts of social activity and of social relations (Burkitt 1991). By focusing on the activities men and women do working on the farm, and on their interactions with one another and with the rural neighbourhood, important elements in the identity-making processes may be grasped.

As concerns the importance of social activity, the gendered division of labour has been a much used perspective in explaining gender differences. In spite of the constantly changing division of labour, distance and difference between men's and women's work are maintained. Men's connection to income generating work has been important for their identity as men, and women's reproductive responsibilities have connected femininity to house- and care-work. The type of work women and men do has been considered so basic to their identities, you could almost call it a form of essentialism (Marshall 1994). Traditionally, femininity was constructed in the home – in doing house- and care-work. Today, income generating work has increased in importance, and femininity is being formed

<sup>1</sup> Paper presented of the XVIth Congress of the European Society for Rural Sociology, Prague, 31 July–4 August, 1995

at the workplace as well – or, as in this case, in working with the machines on the farm.

The gendered division of labour has had implications for the relationship between men and women as being segregated and ordered, and on men's and women's relationships to other persons of their own sex. What is special with the farm as a context for the formation of gender, is that work and family matters are negotiated by the same individuals. Husband and wife are both each others work colleagues and marriage partners. In this paper, I am concerned with the gender negotiations of couples both when it comes to farm work and household tasks.

Agriculture is a gendered enterprise. This gendering takes several forms depending on the type of production and on the spouses' degree of involvement in farming: on the patriarchally organized family farms, the man was the head of the household and held power in terms of being in charge of the production. When both husband and wife work on the farm, women are usually responsible for household and animals, assisting in field work. Husbands are responsible for machine- and field work. An increasing portion of Norwegian farms are run by men alone – either single men, or men with wife employed elsewhere. The masculinization of farming has been described by Almas (1983) and Blekesaune (1994). When agriculture is gendered in a masculine way, tools and technology used by men in farming are also understood as masculine (Brandth 1994, 1995).

This paper takes as its point of departure changes in the division of labour on the family farm. While both men and women might be constrained by traditional gender roles, it is to be expected that women, being the most subordinated, are more actively desirous of change. The paper thus focuses on women who have broken with what has been, and still is, the traditional division of labour on family farms. This break is important to study when concerned with changing gender identities because 1) in this case it makes the husband and the wife more structurally similar, and 2) women who do men's work and use technology connected to this work, challenge existing gender identities (Morgan 1992). It is thus a situation which is favourable for investigating the relation between the dynamics of work processes and identity formation. The question is how femininity and masculinity are constructed when work is changing and distributed between them in a new way. In what ways do women want to be feminine when they operate machinery and do men's work? How is masculinity effected when women enter their arena and do work which has been important to masculine identity?

## METHOD

In order to investigate these questions, I use data from the research project "Femininity and masculinity

in transition. The farm as an arena for the construction of gender." The data consist of 1) group interviews with seven women farmers, 2) individual in-depth interviews with five husbands. Although the number of persons interviewed is not large (19), the data are quite comprehensive.

The women were selected to participate in the group interview because of their daily responsibility for operating heavy farm machinery (tractor and attached equipment). It has been estimated that only about 2% of women working in Norwegian agriculture has such responsibility, thus our group of women are representatives of a small majority of women farmers. These women are challenging the existing division of labour as they have entered a technological area previously the preserve of men, and thus chosen a male adaptation to farming. They are special also because they have deliberately chosen farming as a full-time occupation. Through this choice they are signalling that they are not following traditional women's way.

The group was put together to have different ages and life phases represented. Three of the women were in their forties with relatively grown-up children, two of them in their thirties/late twenties with small children, and two in their twenties were not established with a family. All of them had grown up on a farm. At the time of the interviews, five of the women were married. Four of them were farming together with their husbands, one was farming alone as her husband had another occupation, and two were young heiresses to their parents farms, one of which had taken over the farm and was operating it alone with some assistance from her father.

With these women, group interviews were conducted twice. The first time the interview lasted for one and a half days, the second time (half a year later) for one working day. All the conversation was taped and later transcribed, resulting in several hundred pages of text, allowing the use of textual analysis. The main topics were machine work, farming, and gender differences. The women were asked to recollect their experiences and feelings about work on the farm from childhood till adult working life. They exchanged memories and experiences about growing up on the farm, or coming to the farm as adults. They discussed their relations to technology and environmental issues. By interviewing the group twice, the members were given a chance to meantime reflections and to add things they had remembered since the first interview.

In order to study the construction of gender as a relational process, the five husbands were interviewed. The interviews were done individually in their homes on the farms. We did not choose to do group interviews with the husbands mainly because of the costs and resources involved in bringing such widely dispersed individuals together. The husbands were asked about their own feelings and experiences with farm machinery. In addition, we asked many of the same questions as we had asked their wives: how they assess their

wives work, and how they usually confirm and support their partner. Further, we asked about conflicts and agreements between the spouses. These interviews allowed us to study better how negotiations between husband and wife contribute to shaping masculinity and femininity.

## FEMININITY – AMBIVALENCE AND CHANGE

The women in this study are special in as far as they are challenging the common division of labour in farming by entering a technological area previously the preserve of men. They have chosen a male adaptation to farm work. Further, they have actively fought for their present position in the allocation of work on the farm.

Their choosing to become farmers by occupation is an indication of their being different from their mothers' generation who, when marrying their husbands, also married work on the farm. Although the participants in the group differ in age by twenty years or so, they all express that they do not want the same life as their mothers, the same toil, etc. Even if the mothers are admired for their toil and industry as they took active part in farm work, the mothers are not models for the "new" femininity in farming. They represented a different kind of farming with small, manually operated farms. When the tractor was introduced, it was the father, and not the mother, who started to use it. To the daughters the mothers represent a type of femininity with many restrictions common to the former generation of farm women due to their place in the patriarchal division of labour in family farming. Women's subordination on the family farms was visible and not attractive. The long, strenuous working days which to their mothers meant respect and dignity, mean something very different to the daughters a generation later: it means a subordinated and underprivileged position. The daughters observed the unjustness in fathers and brothers having more privileges than the women on the farm. Some of these privileges are what they want for themselves as they actively avoid the same demands as were put on their mothers.

It is symptomatic of late modernity, that new generations do not easily adapt their parents as complete role models. This is also found in studies on fatherhood and the construction of new father images (Brandth and Kvande 1992, Daly 1993). Instead of adapting their fathers way of practising fatherhood, young fathers of today shape their own father ideal by combining elements from several areas. Also modern women farmer's ways of enacting their work role might be considered an innovation as they combine elements from here and there (Brandth 1994). The women in our study are aspiring to be competent farmers and to farm according to modern farming principles. This is the reason why their fathers become important. Father taught them much of what they know because he was

the one they spent the most time with when growing up on the farm. He was the one who represented what seemed attractive and for the future.

"Father's daughter" is a concept used about women who have used their fathers as models for their occupational choice (Sjorup and Christrup 1990). It is characteristic for "father's daughters" to be confident of their own ability to do what men can do, thus emphasising similarity to, and equity with, men. To be respected as farmers entails being as clever as men, and these women point out that they manage the same working operations: "Sure I can drive a tractor and use a winch, and if he can lop off twigs with a chain saw, I can as well," one of them said. It is not supposed to matter that they are women. In order to emphasise that they are as competent as men, they neutralize the meaning of gender. One of them puts it this way:

"You should not make a point of the fact that you are a woman. You should say: 'I am a tractor driver and I am a farmer.' They will respect you for just that. You must show that you manage the work as well as they do, and think: 'My husband does it, why not me?'"

We may draw parallels here to research on women in other male occupations (Johannesen 1990, Kvande and Rasmussen 1990). In their attempts to achieve respect among men, women in male occupations try to minimize the meaning of gender. Gender neutrality is the ideal, but masculinity is the standard. To these women, machines and machine work are linked to professionalism and self-esteem as farmers. It means self-confidence and professional recognition as farmers.

Nevertheless, there are ambivalences in their efforts to construct a new identity. The most distinct ambivalences are in relation to housework. As mentioned, there has been a close connection between conceptions of femininity and housework. Therefore, it is interesting that this is the point where distance from other women is emphasised. They dissociate themselves from traditional femininity by talking about how they dislike housework, how they do not bother to have a shiny house at all times because it is machinework which is their greatest interest. But, even if they dissociate from a femininity rooted in housework, they want to have a clean, tidy and proper home. Femininity is not detached from the qualities of the housewife in the rural community as women are assessed by the way they take care of their house and their personal appearance. It is still important to do housework, an activity most women do, in order to be regarded as "proper" women.

So, they do housework in order to fulfil expectations to femininity in the rural community. Another way to put it, is to say that their femininity is formed in relations to their rural neighbours. Women in the rural community judge each other as women through the way they do housework. One of the women says:

"Anyway, I would tell my husband: 'Put on decent clothes. If not, my reputation is damaged!' He may have ten

other shirts hanging there clean and ironed in the closet, but they would think anyway: 'Gosh, that woman is running to meetings instead of washing and ironing for her husband'. That's what's being said."

This quote indicates that in addition to assessing each other house- and carework, their reputation as women is about decent appearance and clothing for themselves and their husbands. If, for instance, he does not wear clean and decent clothes, it is a minus on them as women. It strikes their feminine dignity more than his reputation as a man.

In addition to doing housework to fulfil expectations from others as to what "proper" women should do, keeping the house in order is important for their own perception of selves as women. Gro, who lives by herself, explained it this way:

"When I sit down to relax in the evenings, I like to see that the house is looking quite nice. If everything is a mess, I cannot relax. Even if I don't do anything about it, I do not rest, but sit there thinking how unpleasant it looks. But, it is for myself I tidy up. It is for myself, because I like to have it quite clean and cosy. And, I like to put on nice, clean clothes."

They do it for themselves, as Gro puts it. They would like to be "a bit feminine and clever" in that area as well, she says, even if it isn't pleasurable. Research has been pointed out that housework has a special meaning for women as it is tied to their self-esteem (Fassinger 1993).

The negotiation of housework between the women and their husbands is evidence of the relational character of gender identity. Feminine identity is formed in interactions with their husbands. One of them tells the following story:

"I stood there ironing thirteen shirts one day last summer, and I thought: this is sick! Then we had a little discussion, and he said: 'But, you must know that you do these things much better and much quicker than me. And remember, if you cannot do the housework, you are not regarded as a woman, either!'"

His outburst is a clear indication, not only of common perceptions of what they must do as women, but of how femininity is formed in interaction between the two of them. Negotiations about housework are an important part of the gendering processes of everyday life, as we shall see next.

## MASCULINITY

What then about masculinity? What happens to masculinity when women enter men's area of work, and create disorder in one of the most important expressions of masculinity in farming, the tractor (Brandth 1995)? Do men construct gender as similarity or difference?

A much common assumption has been that when women enter income generating work on a full time basis, husbands will perform household work to a

greater extent simply because women will experience overload. However, time use studies have documented that men's changes are very slow (Haraldsen and Kitterod 1992). So also in agriculture. As women operators and owners of farms have entered what previously was men's work, this is by no means met by husbands relieving them of housework duties (Haugen and Brandth 1994). No matter how much women are involved in farm work, and what type of work tasks they do on the farm, women's amount of time spent on housework does not vary very much (Whitmore 1991). It is only men who seem to have the discretion about their degree of involvement. The inequality of house work is extensive, and maybe larger among farm couples than among couples in other occupations (Haugen and Brandth 1994).

From a symbolic interactionist perspective, this inequality in men's and women's performances of household work must be understood by looking at their interpretation of it and the symbolic meaning they give it. It is fairly easy to see that housework has a different meanings for men and women. While confirming women's self-esteem, it does by no means confirm men's. Quite on the contrary, there are no gains for masculinity in doing housework. To dismiss oneself of housework as the men do, is a way to construct themselves as gendered beings, as masculine selves. Difference between masculinity and femininity is thus emphasised by men keeping away from the traditionally feminine work arena.

We see that the women have entered a male arena, and they want an equitable division of work on the farm, but that this has no parallel in men entering the female arena. According to one of the younger husbands, housework is not much accepted as a masculine activity in the rural community.

"I have the impression that it (equal division of work) means that women can try to do whatever work men do.

But, it doesn't seem to be much accepted that men want to do what women usually have been doing."

The husbands who have small children are the only men who to some (minor) extent cross the boundaries between men's and women's work. They do a little bit more care work than the other men did in the same situation. Otherwise, the men are not interested in taking more part in housework (Haugen and Brandth 1994). They characterize themselves as "lazy", "not very good at it", and that it is "not where their talents are". Housework is more in line with her personality than with his, they claim. "I have a bad habit of not obeying orders," one of them said to explain why he did not respond to her efforts to get him to do housework.

One may confirm one's gender identity by distancing oneself from the opposite gender as men do concerning housework. Next, let us consider men's strategies to express masculinity when it comes to machine work. As pointed to in another article, tractors are at the root of masculine identity of men farmers

(Brandth 1995). The tractor represents characteristics connected to men and masculinity – what is big, hard, and powerful. It is an important gender symbol because it is tied to the gendered division of labour in farming.

Although the women and the men in this study both operate machinery on a daily bases, they relate differently to the machinery. Repair and maintenance of machinery for instance, are clear masculine areas of activity. The women explain that they do not have the same interest in mechanical work; it is quite boring to lie there screwing nuts and bolts. Most of the men do not mind. When there is a machine break-down, it is his responsibility to fix it. When they negotiate new machinery, her concern is to get a user-friendly machine which lessens the need for repairs. His concern is often to obtain a bigger and better machine. Technological knowledge is still a masculine area. As Lie claims: "Women's use of technology does not threaten masculinity as long as they do not enter into the knowledge about it" (Lie 1992, p. 78).

There are also differences in the way women and men drive the tractors. He maintains that he drives faster, more recklessly, and he does the steepest fields. Work that he cannot do with the tractor, is not being done. He uses the tractor for almost every work task, no matter how minor. She, more often than him, uses the wheelbarrow. It is likely that a new division of work concerning machine work is in the process of developing. This new division of labour is expressed by each of them driving their own tractors at the same time, or by having different work operations. One of the men who himself insists on taking care of plowing, threshing, fertilising, explains it like this:

"I organize the work so that those operations are mine. (...) Traditionally, they are operations that I have .... that I mean I know well, and that I want to do myself. And, she has not demanded to take over just those operations."

Some of the men certainly want to mark their superiority on the machines making her an apprentice or assistant to him. "There are some kinds of farm work I do myself, because I think I do it better," one of them says. Others do not do this kind of ranking. The men differ in how strongly they emphasise their masculinity through expressing their superiority to women on the machines.

In western thinking, men's activities have had the status as the norm and yardstick for human behaviour, while women's activities have been regarded as deviation from this norm (Gilligan 1982). Thus, masculinity as a social and cultural category has been regarded as superior to femininity (Kimmel 1987, Hearn 1982). In modern, mechanized agriculture this has been expressed by the type of work and the way of men's work. Outdoor work by the use of heavy machinery has been valued higher than women's work. Economically, his work has meant more to the survival of the farm. When the women in our study operate

machinery, they acquire part of the masculine, professional status. Some of the respect and authority as farmers, which men often have, is also becoming theirs. In women's local rural organisations it is for instance expected that they assume a leading position and voice their opinion in most matters the way men do. And, when other rural women compare with them, they say: "I, myself, only work in the barn," and thus express inferiority because they "only" do common women's work. This is an example that status differences between women are produced. However, women are reluctant to take on this status. They cannot become too similar to men/too masculine, because it might harm his masculine dignity. When women gain social status, they must be careful not to upset the status differences between themselves and their partner.

The husbands have little objections to the women doing men's work operating machinery and thus being different from most women in the farming community. The women are clever drivers, they think. If the wife is ranked higher than women farmers who do not drive, and he is ranked above his wife, both of them benefit in status from her driving the tractor. The job is really to see that he keeps his position as a man. That is the condition. When the women do men's work on the farm, it has to be arranged in ways which do not diminish his position as a man.

To ensure that her machine work is not going to affect his masculinity negatively in the eyes of their neighbours, but, on the contrary, add to it, they both strive to uphold his dignity. For instance, the men might easily be perceived as lazy and incapable when neighbours do not constantly see them participate in outdoor work. A competent farmer is supposed to be hard-working and do visible outdoor work. Not being seen working out in the fields is interpreted as laziness, and is a threat to his masculinity. It is therefore necessary to repudiate such an impression.

There are several examples in our data that women take a lot of responsibility for their husbands' masculine dignity (Brandth 1994). "It is me who is constantly trying to defend him," one of them said, and the others nod in recognition. Here, the negotiated character of gender differences become visible. If he is interpreted as being less masculine, the women themselves become less feminine. You are judged as a woman by what kind of husband you have, just as you are judged as a man by your wife's activities. "Women's responsibility for maintaining men's dignity (in an invisible way), is the most general expression of masculinity as relative power," says Broch-Due and Odegard (1992, p. 89). Criteria of feminine dignity are to support the men's masculine dignity. Our studied women farmers have entered a masculine work area. As part of the new shaping of their femininity, they have to put considerable effort into ensuring that their husbands are not rendered less masculine.

In addition to the machine-work, which they both do, they have distinct male and female work spaces

which confirm the gender difference. The women combine machine-work with house- and carework, with drying flowers, needle-work, and home decorating. Men combine their machine work with forestry, hunting, and football – activities which connect them to a masculine local fellowship and confirm their masculinity/that they are men among men.

#### NEW AND OLD SIMILARITIES AND DIFFERENCES

In this paper, I have shown how the meaning of gender is negotiated between husband and wife when work is divided between them in a new way. One important aspect of the social context in which these negotiations take place is brought into the study through the sample design: women who do men's work using men's machines. The results may be taken as an illustration of what happens in a changing situation, when usual patterns of gender divisions of work are broken.

It seems to be important for women doing men's work to construct femininity as similarity to masculinity. Machine work gives them a positive self-image because it is their own choice and aim, and because they are oriented towards achieving the masculine standard. It is considered necessary in order to receive a fair treatment and in order to be respected as farmers. They must be "as good as" men to be considered their equal.

The women in this study are concerned with achieving recognition as farmers. In order to emphasise that their gender is irrelevant to the assessment of their work on the farm, they not only stress their similarity to men, they are also moderating aspects of traditional femininity. On the other hand, in order to be respected as women, they have to be clever at doing what women always have done, and that is to manage body and house. To construct femininity as similarity to and difference from both men and women may at first sight be very oppositional and incompatible practices. However, when gender is in transition, it is perhaps not so remarkable that some aspects of it change in the direction of masculinity, while other aspects remain the way they have been.

In this context, when women enter men's area of work, masculinity is not transformed by men "going feminine". It is evident that men are not responding to women doing men's work by entering housework themselves. Men's response to women's change is to maintain masculinity as difference from femininity. This is done by acting differently on the machines, and by emphasising other areas of activity with distinct masculine traits. Because the men in this study do not actively reconstruct masculinity in the direction of femininity, but mostly respond to their wives' efforts at equal division of farm work, the construction of their identity seem less complicated and ambivalent than women's. To men, machine work still means male self-

esteem and confirmation of masculinity. It is about the importance of work for his identity and sense of self.

We have seen that maintaining differences between men and women, is not just men's doings. When gender identities are studied relationally, their negotiated character becomes quite distinct. It is not just he who defines masculinity as being different from and superior to the feminine. She is also active in this process by defining the gender borders. She participates in maintaining the gender order in intimate relations.

When women enter men's area of work, and men and women become more similar in the type of work they do, gender differences must be marked in new ways. If husband and wife obtain equality in one area, it seems that the gender system must be expressed in another. When work is redistributed, difference and hierarchy are reproduced in new ways. It is in the tension area between the stable and the changing that gender is produced. This analysis is an example of how processes towards equity both contribute to change and maintenance of common understandings of the feminine and the masculine.

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Arrived on 19th September 1995

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## VĚDA, INFORMACE A NÁRODNÍ ROZVOJ

Ústav zemědělských a potravinářských informací uspořádal v polovině září 1995 spolu se Státním zdravotním ústavem seminář na téma *Věda, informace a národní rozvoj*, jehož iniciátorem byla mezinárodní organizace CAB International. Cílem semináře bylo seznámit účastníky s informačními produkty a vědeckými službami CABI a vytvořit předpoklady pro jednání o případném členství České republiky v této organizaci, z něhož vyplývají slevy při nákupu informačních produktů a při využívání vědeckých služeb a další členské výhody.

CAB International je nevýdělečná, převážně soběstačná, mezinárodní organizace, kterou vlastní a řídí jednotlivé členské vlády. V současné době je členy této organizace 38 zemí. Hlavní základna CABI je ve Velké Británii; její regionální pobočky a vědecká pracoviště však působí i v jiných částech světa. Tato organizace plní své poslání tím, že poskytuje vědecké a informační služby orientované na zemědělství a lesnictví, na ochranu životního prostředí, na zachování a vhodné využití různorodosti rostlinných a živočišných druhů a na zlepšení výživy a zdraví lidí na celém světě.

CABI vytváří unikátní bibliografické databáze zaměřené na zemědělství a příbuzné obory, výživy a lidské zdraví. Šíří tiskem i elektronicky informace obsažené v těchto databázích, vyvíjí nejnovější elektronické informační systémy a produkty a vydává knihy a další publikace. V rámci projektu řízení informačního systému poskytuje rady a praktickou pomoc: školení pro informační pracovníky se konají buď ve Velké Británii, nebo v zahraničí.

Čtyři vědecké ústavy CABI – Mezinárodní ústav pro biologickou ochranu rostlin, Mezinárodní mykologický ústav, Mezinárodní parazitologický ústav a Mezinárodní entomologický ústav – se specializují na vymezení a objasnění vztahů mezi organismy; poskytují služby, které usnadní identifikaci těchto organismů; nabízejí diagnostické a konzultační služby; podporují programy ochrany proti škůdcům a biologické kontroly škodlivých organismů a poskytují školení vědeckým pracovníkům.

Každá členská země CABI získává výhody, které spočívají ve snížení cen publikací a služeb (v současné době o 20 %); má přednostní přístup k službám CABI a školicím projektům a má možnost vytvářet výzkumné programy ve spolupráci s ústavu CABI; získává přístup k externím fondům; může provádět kontrolu způsobu řízení a práce této organizace; může využívat služeb CAB k plnění svých povinností v rámci mezinárodních dohod a má možnost zúčastňovat se rozvojových programů CABI. Členské příspěvky jednotlivých zemí tvoří 3 % celkového rozpočtu CABI; zbývající náklady pokrývá CABI prodejem publikací a služeb, ze smluvních vědeckých výzkumů a projektů a z dalších zdrojů.

Česká republika využívá služeb CABI po dlouhou řadu let. Zemědělská knihovna, která je nyní součástí Ústavu zemědělských a potravinářských informací, začala odebírat první referátový časopis CABI dokonce již v roce 1920. Tato knihovna zpřístupňuje prostřednictvím svých fondů uživatelům informace, které CABI zpracovává. Také další instituce, především knihovny vysokých škol, objednávají a využívají informační produkty CABI, v poslední době především kompaktní disky. Informace, které CABI zpracovává, je možné rovněž využívat v dialogovém režimu napojením na databázová centra, mimo jiné i prostřednictvím sítě Internet.

V roce 1988, kdy se členství v CABI otevřelo i pro nečlenské země Britského společenství národů, vstoupilo do této organizace Maďarsko. V důsledku poskytování členských slev stoupl v Maďarsku nákup informačních produktů CAB International, v poslední době především báze dat CABI na CD-ROM. Došlo i k rozvoji spolupráce ve vědecké oblasti, která se projevuje především v organizování společných seminářů.

Členové CABI formálně vyzvali Českou republiku, aby se stala další členskou zemí. Členské země CAB International platí členské příspěvky, které jsou stanovovány na základě vzorce OSN. Principem příspěvku pro CABI a slev vyplývajících z členství je, že členský příspěvek je hrazen ze státních prostředků a výhody z členství získávají jednotlivé instituce na území dané země. Výhoda členství je úzce spojena s mírou nákupu a využívání informačních produktů a služeb CABI.

Závěry semináře a následný průzkum rozsahu využívání informačních produktů a vědeckých služeb CABI v České republice mají pomoci pracovníkům Ministerstva zemědělství i dalších resortů při rozhodování o tom, zda doporučit vstup České republiky do CABI.

# THE IMPORTANCE OF FARMERS' RELIEF SERVICES FOR SOCIAL SECURITY IN AUSTRIA<sup>1</sup>

## VÝZNAM SLUŽEB ZAJIŠŤUJÍCÍCH NÁHRADNÍ PRACOVNÍKY PRO ZEMĚDĚLSKÉ FARMY PRO SOCIÁLNÍ JISTOTY V RAKOUSKU

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**ABSTRACT:** Farmers' relief services in Austria are especially arranged to respond to the typical challenge to the social security system for farmers in cases of e.g. sickness, accidents, maternity leave, recovery, recreation and leisure. Efficient farmers' relief services could also have a major impact on farmers' access to social welfare. They could be crucial in maintaining population and livelihood in remote rural areas. There is a marked and steady decrease in the number of relief suppliers on the one hand and a growing demand for substitute work by the farm holdings on the other hand. By means of a representative empirical study the whole range of possible reasons for the present situation of the farmers' relief system was determined. As a result of the study, both farmers and relief suppliers expect that in future the demand for relief will further increase due to an ongoing reduction of household members on the one hand and the change of social values on the other hand. Recovery, recreation and leisure or just a single day-off are even more appreciated by the younger generation of farmers. A clear definition of the task of relief suppliers becomes even more important. This could be a proper measure for the professional orientation of the individual suppliers. All assistants are strongly in favour of the implementation of special training courses for relief suppliers to cope with certain problems. In any case the emphasis should be put on programmes in the fields of social pedagogics and communication. Most relief suppliers, and notably women, say that they are worried about psychological stress during their work. It is therefore important to implement or improve support and supervision facilities for farmers' relief suppliers.

farmers' relief services, social security system for farmers, relief suppliers

**ABSTRAKT:** Služby zajišťující náhradní pracovníky pro zemědělské podniky jsou v Rakousku rozvíjeny jako odpověď na typické situace související se sociálním zabezpečením zemědělců, např. v případě nemoci, úrazu, mateřské dovolené, dovolené na zotavenou, rekreace a volného času. Výkonné služby zajišťující náhradní pracovníky mohou mít také zásadní význam pro to, aby se zemědělci mohli na dávkách sociálního zabezpečení podílet. Mohou být rovněž rozhodující pro udržení osídlení a možnosti obživy v odlehlých rurálních oblastech. Na jedné straně je možno sledovat výrazný a trvalý pokles počtu těchto náhradních pracovníků, na druhé straně pak rostoucí poptávku po nich se strany vlastníků farem. Prostřednictvím reprezentativního empirického výzkumu byla označena celá řada možných příčin současné situace v tomto směru. Z této studie vyplývá, že jak farmáři, tak náhradní pracovní síly očekávají, že se v budoucnu bude poptávka po tomto typu služeb dále zvyšovat vzhledem ke snižování počtu členů farmářských domácností na jedné straně a změnám sociálních hodnot na straně druhé. Odpočinek, rekreace a volný čas, či jen jeden den volna jsou mladší generací oceňovány ještě více než jejich předchůdci. Stále významnější se stává jasná definice úlohy těchto náhradních pracovníků. Ta by mohla být vhodným kritériem profesionální orientace jednotlivých náhradních pracovníků. Všichni, kdo se touto otázkou zabývají, výrazně podporují zavedení speciálního školení, které by usnadnilo těmto náhradním pracovníkům vyrovnat se s některými problémy. V každém případě by měl být kladen důraz na programy v oboru sociální pedagogiky a komunikace. Většina náhradních pracovníků, zejména ženy, uvádějí, že jim působí problémy psychologický stres, jemuž jsou ve své práci podrobeny. Je tedy důležité zavést nebo rozšířit zařízení podpůrná a poradenská zařízení pro farmářské náhradní pracovníky.

služby pro zemědělské podniky, sociální zabezpečení zemědělců, náhradní pracovníci

### INTRODUCTION

Farmers' relief services<sup>2</sup> are especially arranged to respond to the typical challenge to the social security

system for farmers in cases of e.g. sickness, accidents, maternity leave, recovery, recreation and leisure. As a result of tremendous changes within the socio-economic structure of agriculture, the number of available

<sup>1</sup> Paper presented of the XVIth Congress of the European Society for Rural Sociology, Prague, 31 July–4 August, 1995

family labour is constantly declining. Therefore it will get even more important to provide a sufficient measure of well-trained substitute help to carry on with farm operation, particularly when family based-farm management is impeded by abrupt inescapable events like sickness or death. Efficient farmers' relief services could also have a major impact on farmers' access to social welfare. They could be crucial in maintaining population and livelihood in remote rural areas.

The organization of farmers' relief services in Austria has traditionally been done predominantly by machinery rings<sup>2</sup>. Currently substitute help is chiefly provided by voluntary labour, mainly by not fully occupied farmers' youth with the intention to earn some pocket money or gather some new experience. Their work is based on limited contracts and they are not entitled to their own health or pension insurance. This is based on the assumption that the work of substitute help relies on mutual assistance between farms in a neighbourhood. This is why the activities are not subjected to industrial regulations, taxes and compulsory insurance. In most cases relief suppliers finish their work when they take over a farm of their own or when they turn towards some new activities like continuing education or extra-agricultural employment.

There is a marked and steady decrease in the number of relief suppliers on the one hand and a growing demand for substitute work by the farm holdings on the other hand. Thus, from 1990 to 1991 the number of relief suppliers dropped from 7,420 to 6,963 persons, this means 6.2 per cent within one year. In 1993 the number of voluntary assistants fell to a level of 6,801 persons, among them only 1,122 female suppliers, who are mostly involved in household and family assistance activities. As a result of the rigid system of gender roles operating in rural areas, these particular services are never provided by men. Since there is no evidence that this development will come to a standstill, a scientific

study is required in order to explore the reasons for this obvious crisis in the farmers' relief system (Table I).

## SURVEY

By means of a representative empirical study, carried out by the Federal Institute for Less-Favoured and Mountainous Areas (Bundesanstalt für Bergbauernfragen) in Vienna, the whole range of possible reasons for the present situation of the farmers' relief system was determined. The attitudes and expectations of both the farmers and the relief suppliers were assessed and verified by means of multivariate analysis. At the outset of the investigation, five research regions were selected covering all possible conditions of agricultural production and rural development as well as socio-economic situations. The database comprises 250 interviews based on the random sample and quota methods. Two questionnaires were developed, one for the group of the farmers and the other for the group of the relief suppliers. The group of relief suppliers includes a considerable number of female "family assistants"<sup>4</sup> and "village assistants"<sup>5</sup>.

The work of "family assistants" is generally acknowledged as a special profession with full-time employment in addition to a three-year training course and entitlement to compulsory social insurance. Family assistants usually replace women in rural households and they are paid by public or private welfare organizations. "Village assistants" are a special case for the Bundesland of Lower Austria. Their working conditions and social security are comparable to those of family assistants. Their particular task is to assist farmers both in the enterprise and household. They are employed by the provincial government of Lower Austria. The comparison between relief suppliers (who work on a voluntary basis) and fully employed family assistants and village assistants allows a reliable evaluation of the influence of different working conditions on their respective attitudes. The principal questions were identical for both groups to establish similar or different attitudes towards the institution of farmers' relief service.

## RESULTS AND RECOMMENDATIONS

The results of the survey suggest that it would not be advisable to reduce the activities of relief suppliers to a restricted number of occasions. Both farmers and relief suppliers believe in the necessity of relief services. They expect that in future the demand for relief will further increase due to an ongoing reduction of household members on the one hand and the change of

I. Number of relief suppliers in Austria 1993

Land	Male suppliers	Female suppliers	Total
Burgenland	199	134	333
Carinthia	582	62	644
Lower Austria	450	80	530
Upper Austria	2,233	364	2,597
Salzburg	217	77	294
Syria	1,380	343	1,723
Tyrol	335	13	348
Vorarlberg	283	49	332
All	5,679	1,122	6,801

Source: Bundesverband Österreichischer Maschinen- und Betriebshilferinge, Situationsbericht 1993/94

<sup>2</sup> "Soziale Betriebshilfe"

<sup>3</sup> "Maschinenringe"

<sup>4</sup> "Familienhelferinnen"

<sup>5</sup> "Dorfhelferinnen"

social values on the other hand. Recovery, recreation and leisure or just a single day-off are even more appreciated by the younger generation of farmers. It is clear that the vast majority of all groups are in favour of increasing the number of available relief suppliers.

Relief suppliers, who work through machinery rings on voluntary part-time basis and on the basis of mutual assistance between farmers, often suffer under the conflict between their own interests and the interests of the farm holding (e.g. their parents) on which they depend for their insurance. In many cases a major obstacle appears in the contradiction between the economic interest of the farm holdings to obtain substitute help at a reasonable price and the interest of farmers' youth working as suppliers, particularly when there are no more close links to the farm of their parents or when there is no prospect of taking over the farm in future. Apparently they prefer better paid jobs if they are available nearby. This is clearly one of the main reasons for the steady decrease in the number of suppliers.

A clear definition of the task of relief suppliers becomes even more important. This could be a proper measure for the professional orientation of the individual suppliers. Men, elderly people, machinery ring members and proprietors of full-time holdings predominately characterize the business of farmers' relief suppliers as a simple act of mutual help between farmers in the closer neighbourhood as which it is currently defined. Women, family assistants, part-time farmers and members of the younger generation are more aware of the need for a professionalization of the farmers' relief system due to an increasing demand for substitute help in the social field (Table II).

## II. Indices characterizing the activity of relief suppliers

Statement characterizing relief service	Help recipients	All groups of help suppliers
Opportunity for the farmers' youth to escape from home and to gather new experiences	1.593	1.949
Opportunities of additional income for farmers in times with scarce work	1.587	2.500
A profession like others for one's whole life	1.860	2.398
An option preferable to a non-agricultural working place	1.925	2.612
A social profession	1.852	1.580
A stopgap activity until marriage or taking over a farm	2.089	1.750

Index formed as arithmetic mean of all responses rating 1 = full agreement, 2 = partial agreement, 3 = partial rejection and 4 = full rejection

Respondents belonging to all groups of help suppliers, particularly male relief suppliers, claim that the work of the relief suppliers offers no perspective for whole professional life. This result is in complete op-

position to the opinion of the help recipients. On the other hand, help suppliers predominately characterize their work as a stopgap activity until marriage or taking over a farm. They also strongly emphasize the aspects of a social profession.

The assumption that the low attraction of relief suppliers' activities is due to a low social prestige could not be verified. Both farmers and suppliers think that the work is thoroughly appreciated by the society. The proposal to create better working conditions, particularly entitling relief suppliers to their own pension and health insurance while at the same time increasing the financial contribution of the farmers, is strongly supported both by the suppliers and the farmers. But most farmers are only willing to contribute more if they are guaranteed to obtain highly qualified and reliable help at any time they need it (Table III).

## III. Indices for certain proposed reform strategies

Reform strategy	Help recipients	All groups of help suppliers
Deployment of young men performing compulsory military service in farmers' relief services	1.799	1.835
Restriction of relief services to utmost emergency situations	2.315	2.558
Professionalization of the farmers' relief system	2.514	2.263
Entitling relief suppliers to their own pension and health insurance while increasing the financial contribution of the farmers	2.622	2.080
Better training for relief suppliers	2.756	2.084
Better social security for farmers while increasing health insurance contribution	2.782	2.084
Restricting relief services to short-term assistance	2.845	2.563
Competition with private commercial enterprises	3.041	3.172

Index formed as arithmetic mean of all responses rating 1 = full agreement, 2 = partial agreement, 3 = partial rejection and 4 = full rejection

Relief suppliers as well as family and village assistants do not expect that private commercial enterprises could provide an efficient system of relief services for agricultural holdings and households. They are also not willing to join them as employees because they are predominately afraid of losing their independence in the case of relief suppliers, or their social security in the case of family or village assistants.

We have to take into account that the activities of relief suppliers are limited to a certain number of working days a year if they are not to be subjected to industrial regulations, taxes and compulsory insurance. This means that in case of long-term help it is necessary to find a sufficient number of suppliers assisting one after the other. Each relief supplier has to adjust to the spe-

IV. Responses to the statement "There should be better training for relief suppliers" (percentages)

Group	Fully agreeing	Somewhat agreeing	Somewhat rejecting	Fully rejecting	None given	Index*
Help recipients	10.0	21.3	29.3	21.3	18.0	2.756
Relief suppliers	17.0	38.3	31.9	8.5	4.3	2.333
Family suppliers	40.0	33.3	20.0	-	6.7	1.786

\*Index formed as arithmetic mean of all responses rating 1 = full agreement, 2 = partial agreement, 3 = partial rejection and 4 = full rejection

cific situation on the farm and in the farmers' family anew. Especially the steady change of persons might cause problems for smaller children. In addition, the limitation of working days is a great obstacle to continuous work and regular income for the relief suppliers. This problem could be solved by relaxing the restrictive industrial and taxation regulations.

All groups of assistants, particularly family assistants and female relief suppliers, are strongly in favour of the implementation of special training courses for relief suppliers to cope with certain problems. Up to now special training courses for relief suppliers are offered only in Upper-Austria but they last only one week. It is criticized that this cannot be adequate to prepare relief suppliers for their job. In particular there is a lack of training in farm management and rural domestic economics (Table IV).

In any case the emphasis should be put on programmes in the fields of social pedagogics and communication. Most relief suppliers, and notably women, say that they are worried about psychological stress during their work. Farmers usually expect more than milking the cows, tidying up or looking after the children. They also want to speak about their personal problems and to have someone listening. In reality, relief suppliers also have to play the part of social workers. But most farmers are not willing to pay for this service. They only recognize the physical work of hired assistants. This is why in the opinion of the recipients training for relief suppliers seems to be less important (Table V).

The main features for the professional qualification for relief suppliers as perceived by the group of help recipients deal with practical aspects of agricultural and domestic work. Farmers emphasized technical knowledge of machinery and tools, knowledge in management or love of animals. Compared to the group of help suppliers, they attach less importance to items like sociability, maturity or psychological strength. These different requirements may cause severe frictions between the groups of help recipients and relief suppliers.

Most relief suppliers are fairly young. Among female relief suppliers in the sample, 43,5 % started when they were between 15 and 17 years old. As a result of their youth it is rather difficult for them to cope with all the psychical and social conflict situations they are confronted with. A considerable number of persons have problems separating their own interests

from the interests of help recipients. A lot of the work assistants soon become frustrated and leave the job; others suffer from "burn-out-syndrome" and are not very committed. It is therefore important to implement or improve support and supervision facilities for farmers' relief suppliers, as it is already done for family assistants.

It can be recognized that in some cases the relationship between the relief suppliers and the managers of the machinery rings they are working for is tense. Particularly female relief suppliers feel misunderstood or badly treated. Sometimes they think of their machinery ring as a mere men's club, unable to deal with women. It would be very important to improve relations and

V. Indices of required qualification features for the work of relief suppliers

Key qualification features required by relief suppliers	Help recipients	All groups of help suppliers
Minor differences between both groups		
Joy in work	1.313	1.210
Independence in work	1.387	1.160
Professional experience	1.533	1.340
Love of children	1.573	1.480
Good manners	1.933	1.910
Domesticity	2.053	1.990
Physical strength and robustness	2.287	2.020
Love of the home country	2.573	2.770
Greater importance attached by help recipients		
Technical knowledge of machinery and tools	1.440	2.330
Love of animals	1.693	2.230
Knowledge in management	1.927	2.270
Greater importance attached by help suppliers		
Empathy	1.907	1.330
Psychological strength	1.960	1.470
Training in agricultural and domestic economics	1.867	1.480
Sociability	1.725	1.450
Maturity	1.980	1.630
Assertiveness	2.280	1.838
Religiousness	2.800	2.460
Not too young	3.213	not analyzed

Index formed as arithmetic mean of all responses rating 1 = full agreement, 2 = partial agreement, 3 = partial rejection and 4 = full rejection

communication between relief suppliers and machinery ring managers who are in charge of the organization of farmers' relief services.

A better co-operation and co-ordination between all kinds of rural social services could bring a reduction in the shortage of available work assistants. Supply and demand could be balanced more efficiently if information on all groups of relief suppliers, family, village and household assistants is collected in a data-bank or umbrella organization.

The importance of agriculture will further decline in future. The share of the agricultural population in the whole society will gradually decline to a rather small number. Thus it no longer makes sense to create special services reserved just for farmers. This is why one should concentrate all efforts to bring about social welfare for the whole population of a rural district regardless if one is occupied in farming or not. The focus of rural social policy might be the rural household or peripheral regions. Machinery rings could play a major part in providing and co-ordinating substitute help within the system of rural social services.

The business of farmers' relief suppliers cannot be reduced to mere physical work. It must be acknowledged that this job has plenty of aspects of social work as well. The obvious crisis manifesting itself in a significant reduction in the number of relief suppliers within the last few years cannot be overcome only by means of a better organization. The human aspect seems to be even more important.

## CONCLUSION

The overall conclusion of the study is relatively simple but nonetheless fundamental: that a mere technocratic attempt to re-organize the farmers' relief system is bound to fail. It cannot provide a sufficient number of highly qualified assistants to perform agricultural work in cases of accident, sickness, death, maternity leave, leisure, recreation etc. in future. It does not appreciate adequately the extent to which a desire for human understanding and psychological sup-

port is a crucial element in the willingness of relief suppliers to work.

Whatever the explanation for the results in detail, the investigation stresses a need to overcome the frictions caused by the different requirements and attitudes between farmers and relief suppliers. Furthermore, it outlines the obvious importance of implementing special training programmes for relief suppliers, a closer co-operation between different social services in rural districts and arranging seminars to enhance mutual understanding.

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Arrived on 13th September 1995

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# THE CONSUMPTION OF SCIENCE AS A POLITICAL PROCESS: SOME LESSONS FROM THE FIELD<sup>1</sup>

## SPOTŘEBA VĚDY JAKO POLITICKÝ PROCES: NĚKOLIK LEKČÍ Z PRAXE

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**ABSTRACT:** According to the new sociologists of science, when scientists are studied 'in action' they are doing a number of things, not least of which is making 'nature'. In the hard sciences the division between the natural and the social is found to be extremely 'porous'. Moreover, once scientific artefacts move out of the 'hard centres' (e.g. laboratories) then some of the 'lab' conditions must be extended to the outside to enable these artefacts to 'work'. Drawing upon the work of sociologists of science, notably actor-network theorists such as Callon and Latour, this paper shows how science moves into the world and how it tries to enrol, or indeed conquer, local environments, forms of knowledge and practices. Whether science is successful depends to some extent on how far it can change existing practices and forms of knowledge and in the process make itself indispensable to local actors. Thus attention must be focused on the interface between scientific and local knowledge. Three case studies are outlined showing how science and local knowledge interact in differing ways. What is common to all is that science proceeds with an arrogance; it assumes that local knowledge is irrelevant and that it can work without the aid of knowledgeable local actors. We conclude with a call for a greater democratization of scientific networks as they are extended into new socio-spatial contexts.

science, knowledge, local actors, local knowledge

**ABSTRAKT:** Podle nových sociologů vědy dělají vědci, když jsou studováni „v akci“, řadu věcí, z nichž nikoliv nejmenší je vytváření „přírody“. V exaktních vědách je hranice mezi přírodním a společenským sledována velmi „porézní“. Navíc, jakmile se jednou vědecký artefakt dostane ven z „exaktního prostředí“ (tj. z laboratoře), pak musí být některé z „laboratorních“ podmínek rozšířeny do vnějšího světa, aby tento artefakt mohl „fungovat“. Tato práce, vycházející z práce některých sociologů vědy, zejména autorů, jako je Callon a Latour, ukazuje, jak věda proniká do světa a jak se snaží do sebe zahrnout nebo přímo si podrobit lokální prostředí, formy vědění a praxi. To, zda je věda úspěšná, závisí do určité míry na tom, nakolik je schopna změnit existující praxi a formy vědění a v rámci tohoto procesu se stát lokálním aktérům nezbytnou. Pozornost tedy musí být soustředěna na propojení mezi vědeckým a lokálním poznáním. Zde jsou hodnoceny výsledky tří případových studií, které ukazují rozdílné způsoby interakce mezi vědou a lokálním poznáním. Všem je společné to, že věda postupuje s určitou arogancí: předpokládá předem, že lokální vědění je irelevantní a že ona může pracovat bez pomoci věci znalých lokálních aktérů. Uzavíráme proto práci výzvou k větší demokratizaci vědecké základny při jejím pronikání do nových sociálně prostorových kontextů.

věda, vědění, lokální aktéři, lokální poznání

### INTRODUCTION

It is commonplace within much of modern society that scientific knowledge is special. Scientific activity reads nature, and what is more, reads it rationally; how, therefore, could science's decipherings, apparently imbued with nature's authority, not prevail over knowledge generated in other ways? Such tenets, which are crucial to sustaining the power of science, are rarely questioned beyond the natural sciences. Even where scientific knowledge is pivotal, as with environmen-

tally related issues, social scientists and environmentalists alike, whatever else they may say about science, maintain its division of nature and culture, of science and society into separate domains. Qualitatively different sorts of knowledge are judged to be produced within these separate domains and so the distinction is drawn between scientific and other (socio-cultural) forms of knowledge.

This privileging of the status of scientific knowledge derives from the presumed asociality of scientific activity. Science as the natural and dispassionate pursuit

<sup>1</sup> Paper presented of the XVth Congress of the European Society for Rural Sociology, Prague, 31 July-4 August, 1995

of truth is deemed, at the end of the day, to be free of social contamination, thus allowing it to both universalize itself and make coherent predictions. However, recent sociological studies suggest that in practice science is not as distinctive as is often supposed. Such studies analyze scientific activity as a social process of achieving, making or doing science. In the wake of work in this vein, which has focused mainly on research in laboratory situations (see, for, example, Latour and Woolgar 1979; Knorr-Cetina 1981), a new view of science has begun to emerge. Firstly, science has come to be seen as a set of practices rather than, for instance, as an accumulated compendium of knowledge. Moreover, these practices are no longer held to have any special epistemological basis; the practice of science is remarkably like most other social activities in essential respects. Secondly, the universal status of scientific knowledge has been shown to be *achieved*, rather than inherent in the type of knowledge generated by scientific practice. Nature in the result, not the referee of scientific work (Latour 1987).

It is understandable that amongst scientists these views should find little favour. Many strongly reject any notion that science is not epistemologically special (perhaps especially because it seems to open the way to "relativism rampant" – see Wolpert 1992<sup>2</sup>) and cleave to a view of scientific practice as 'outside' of society. However, despite the protestations of many practicing scientists the view is gaining ground that the distinction between science and other forms of knowledge may not be as hard and fast as previously thought. For instance, many environmentalists believe much more locally-specific knowledge forms are required to deal with environmental problems in ways which are sympathetic to local eco-systems; in their view, local knowledge has a closer affinity with 'nature'. If local or traditional knowledge<sup>3</sup> can serve its users well in solving 'scientific' problems then the question emerges: what distinguishes science from these other knowledge types?

We have elsewhere (Murdoch and Clark 1994) considered this issue in the context of a tendency within debates around sustainable development to reify both scientific and local forms of knowledge. We argued that science and local knowledge do not differ in their access to 'reality', but in their relative powers; in short, we concluded that science is powerful because it is able to act effectively over long distances. Scientific knowledge enables action at distance because of its capacity to reduce numerous (local) elements into single 'universal' laws (Latour 1988). Once this is achieved it allows action to be conducted on a variety

of locales in accordance with this 'universal' law, actions which are likely to reduce the components of the locale to the components of the law. This assessment of the relative strengths of science and local knowledge can account for the ease with which science seems able to colonize new territories.

In this paper we wish to extend this analysis, focusing in particular upon the way science moves through the world and on how it established itself in diverse contexts and situations. Our analysis is situated within work in the sociology of science. For purpose of clarity we have chosen to locate our account within one influential strand of sociological theorising on science, namely actor-network theory (ANT) (see Callon 1995 for an assessment of this approach in relation to other leading strand within the sociology of science). For our purposes, which are to shift the emphasis away from the production of science in laboratories to its application in the 'field', ANT provides a useful starting point for it is particularly concerned with showing how science moves 'through' the world along so-called 'actor-networks'. This examines how science is locally produced in particular key sites (e. g. laboratories) and how, through the development of various resources, networks are constructed which allow scientific facts and artefacts to travel into new locations. The networks are instrumental in preserving the shape of science once it leaves 'home' and permit its insertion into a variety of socio-spatial contexts.

To illustrate these general points we outline Michel Callon's famous (Callon 1986a) study of the application of science to scallop fishing off the French coast in St. Brieuc Bay. The strengths of ANT become clear in its study: it shows how scientists enrol other actors into their networks, in the hope that these others will accept and transmit scientific expertise. The study elaborates some of the general rules governing how scientific networks attempt to insert themselves into localities, reshaping sets of social relations in the process. However, this study also highlights a current lacunae in ANT. In Callon's case study the extension of the network ultimately fails but the reasons for this are not fully elaborated as we are told very little about the non-scientific actors. In order to fill out this missing dimension of the extension of science into new socio-spatial domains we then turn to Brian Wynne's portrayal of the conflicts between scientists and hill farmers in the north of England in the wake of the Chernobyl explosion, for this illustrates how engagement in non-scientific networks allows lay actors to criticize scientific knowledge. Wynne shows that although the farmers were not directly involved in consuming scientific products, and were thus never fully incorporated

2 The perspective that we use in this paper (actor-network discussed in the next section) is actually neither relativist or realist but relationist; it eschews both the notion of mutually exclusive but equal 'truths' and that of absolute universals (Latour 1993)

3 The terms 'local' and 'traditional', both of which are opposed to 'scientific' are often used if they were interchangeable. However, in that the word traditional has a temporal dimension (of being handed down from one generation to the next), local knowledge is not necessarily traditional.

into a network, they nevertheless showed themselves to be knowledgeable bystanders who had a sensitivity to local conditions which might have aided the execution of scientific procedures.

Our third example, drawing upon our own research into the implementation of scientifically based conservation measures in south-eastern England, builds upon this insight to show how the consumption of science is a political process in which the identities of the various actors tend to be 'fixed' within the arriviste scientific knowledge but then become fought over in the field. For lay actors, their local affiliations *before* the arrival of the scientific network can be a key resource in resisting or reshaping the terms of their enrolment into the networks. Furthermore, we also note that intrinsic to this 'social' struggle are the identities and characteristics of natural entities. We conclude that, contrary to appearances, the extension of scientific knowledge out into the world can be a precarious enterprise which might be better achieved if scientists took more note of local knowledge. This implies a greater democratization of science and a partial reformulation of science's 'special' status.

#### SOME INSIGHTS FROM ACTOR-NETWORK THEORY

The sociology of science has sought to examine the practice of science as a social activity. It has thereby generated insights into how science makes itself seemingly universal. One of the most influential accounts is ANT, most prominently associated with Callon (1986a; 186b), Latour (1987) and Law (1992). This perspective emerged from work on the *making* of new scientific facts and technical artefacts through scientific and technical practices, typically carried out in laboratories. Studies of 'science in action' found that although science is supposed to be epistemologically different, nothing terribly special takes place in laboratories. This poses a problem: how do some facts become true while others fade away? How do some artefacts become real and others never get off the drawing board? This conundrum cannot be resolved by going 'outside' science to society. For if the outcome of scientific practice is dictated from the social realm, how can the power of science be explained? ANT proposes a different way of looking at science, one which suspends the boundaries between nature and culture, science and society, truth and power. These become outcomes of networks, rather than *a priori* categories in which entities are placed. In this sense ANT is as much a *method* as a theory, for it proposes a way to study the working of science rather than providing overarching concepts that attempt to explain the nature of science. It attempts a general account of *how* facts and artefacts become true and real but it does not aim to predict in advance the outcome of particular cases. By briefly considering the ANT account of science, and three case studies that are oriented around this ap-

proach, we can begin to illustrate how science 'meshes' with other forms of knowledge.

ANT builds on one of the earliest insights of sociological studies of science; in order to see 'universal' laws in action they have to be studied in particular places at particular times. Science is in actual fact the detailed study of local phenomena. The main problem confronting scientists, therefore, is not how to get access to universal phenomena but "how to standardize and generalize the achievement (for science) so that it is replicable in different local contexts" (Rouse 1987). It is argued in ANT (for example, Latour 1987) that one of the key distinctions between knowledge categories is a differential ability to 'act at a distance'. Scientific knowledge is designed to travel and networks are constructed which allow scientific facts and artefacts to span great distances while never being 'far from home'. Local knowledge, on the other hand, is just that; irredeemably local. It is made in, and intimately linked to, local environments. It is also characteristically related to 'use' rather than to the standard categorisation criteria derived from science. It thus conforms more closely to description than to the powerful deductive explanations provided by science and, as with 'story telling', its often associated with spatially and temporally specific practices (Latour 1988). It does not travel easily and has little power away from its local setting.

If science is produced locally then it still seems able to travel very effectively into a whole range of differing locales. The ability that scientific products have to do this is linked to the earlier observation that the key problem facing science is to make itself universal. Thus Latour (1983) considers that:

"most of the work done in a laboratory would stay there forever if the principal constraints could not be made constant everywhere else. Time, weight, length, wavelength etc., are extended to ever more localities and in ever greater degrees of precision. Then and only then, laboratory experiments can be brought to bear on problems occurring in factories, the tool industry, economies or hospitals".

As scientific artefacts move 'through' the world they must reshape locales in a fashion which allows these artefacts to 'work'. Herein lies the success of science and the basis of its universal claims. It remakes the world in its own image; we are now, in our workplaces, our homes, and even in our bodies, to some extent refashioned by this 'imperialistic' aspect of science.

The key insight for ANT is, therefore, that science allows scientists to act at a distance in both space and time (Latour 1987). Studies of science in action have shown how particular 'centres' (for example, laboratories) act on other times and places. For science the aim is

"to make of the outside a world inside which facts and machines can survive. Termites build their obscure galleries with a mixture of mud and their own droppings; scientists build their enlightened networks by giving the

outside the same paper form as that of their instruments inside. In both cases the result is the same; they can travel very far without ever leaving home" (Latour 1987).

And if science does this, then, for the sociologist, the study of science becomes the study of associations; how actors in one place (laboratory scientists) are able to tie together actors in other places at other times on terms which allow artefacts to 'work' and facts to be 'true'.

Thus it is proposed that action at a distance is achieved by *actor-networks*. Successful networks are those which are able to enrol a diverse number of actors and entities on terms set by the enrolling agents, allowing scientific facts and products to pass from 'hand to hand'. If actors and entities are to be effectively enrolled within a new network then they must have certain attributes and these are defined by the enrolling agent. A stable network is produced if all its elements play the roles allocated to them without deviation, and the more successful and stable the network the more likely it is to disappear from view (Law 1992). All the associations, enrolments and translations of interests and identities will be 'black boxed' as action at a distance is effectively achieved. In this way science comes to appear to be universal – it works 'everywhere'. But this is only achievable because scientific facts and artefacts can move from locale to locale within the protective confines of the networks.

#### ACTOR-NETWORK THEORY AND AMBIVALENCE; SCALLOPS AND SHEEP FARMERS

ANT has been influential in describing how scientific facts and artefacts are made and then passed out into the world. Yet the ease with which this process occurs is rather glossed over in the theory. Latour (1987), for instance, while spending a good deal of time documenting how scientific facts are established in texts and laboratories, tends to generalize his comments on the construction of networks beyond the scientific centres so that it appears as though their extensions are irresistible. He tends to view the passage of facts and artefacts down the networks to new socio-spatial contexts as a rather seamless process. Yet when we turn to examine case studies of network extension it becomes clear that the construction and maintenance of scientific networks in new contexts can be precarious process. In the rest of this paper we compare three case studies which illuminate in differing respects the amount of work that is required in extending scientific networks and how, even when great efforts are made, the outcome is far from predictable.

We begin with one of the key empirical cases provided by actor-network scholars, Callon's (Callon 1986a) lucid study of the application of science to scallop fishing in Northern France. In this case study Callon seeks to show how both 'nature' and 'society' are

invoked and reconstituted during an attempt by a group of scientists to persuade a group of French fishermen of the utility of scientific knowledge. He tries to show how the scientists attempt to build a network by getting "other actors – whether they be human beings, institutions, or natural entities – to comply with them" and how this compliance "depends upon a complex web of interrelations in which Society and Nature are intertwined".

The account begins in the early 1970s when scientists and representatives of the scallop fishing industry in northern France were assembled in order to examine the possibility of increasing the production of scallops by controlling their cultivation. The background to this assembly was a total lack of information among both groups about the early stages of scallop development. However, three scientists had discovered during a visit to Japan that scallops were being intensively cultivated there. The technique being used was as follows: the scallop larvae were anchored to collectors immersed in the sea where they were sheltered from predators. When the scallops attained a large enough size they were 'sown' along the ocean bed where they were allowed to develop for two to three years before being harvested. The scientists were able to propose this technique as a solution to a key problem facing the fishermen of St Brieuc Bay: a dwindling stock of scallops.

Using the repertoire of ANT, Callon examines how the scientists came to define problems and solutions for the fishermen and how they attempted to make themselves indispensable within an actor-network which they constructed on their terms. He tells the story in terms of four moments of 'translation'. These are as follows:

(i) *Problematization*. Once the scientists had returned home they asked whether the lessons learned in Japan were transposable to St Brieuc Bay. At first no clear answer could be given because the species were different in North France. In asking (and answering) such questions the scientists begin to invoke other actors who would eventually be bound into the network: the scallops, scientific colleagues and the fishermen. The scientists tried to demonstrate that each of these actors had interests and that their interests lay in the scientists' knowledge of the scallop. The argument goes like this:

"if the scallops want to survive (no matter what mechanisms explain this impulse), if their scientific colleagues hope to advance knowledge on the subject (whatever their motivations might be), if the fishermen hope to preserve their long term economic interests (whatever their reasons) then they must: 1) know the answer to the question: how do the scallops anchor? and 2) recognise that their alliance around this question can benefit each of them" (Callon 1986a).

(ii) *Interessement*. Each actor enlisted during the first phase could submit to being integrated into the scientists' network or could refuse by defining its identity and interests in another manner. *Interessement* is the process by which the scientists attempt to impose

and stabilize the identity of other actors. Thus the scallops were invoked as constantly threatened but able to anchor in the manner of their Japanese cousins. The fishermen were interested through a series of meetings between their representatives and the scientists during which the former became convinced of the scientists' knowledge. The scientific colleagues were similarly solicited during conferences and through publications.

(iii) *Enrolment*. This follows from the insight that "no matter how convincing the argument, success is never assured". The need, for the scientists, was to designate a set of interrelated roles and for these to be accepted by all the other actors. If the scallops were to be enrolled they had to anchor themselves to the collectors. The scientists, in their experiments, entered into a long series of 'negotiations' with the scallops and tried many ways of encouraging them to anchor in a significant manner. The scientific colleagues were prepared to believe in anchorage as long as the scientists could provide sufficient and significant examples. The mass of the fishermen, on the other hand, watched "like amused spectators and wait (ed) for the final verdict" while their representatives negotiated on their behalf.

(iv) *Mobilisation*. The scientists could mobilise the scallops, the scientific colleagues and the fishermen as long as their representation of these actors were sustained by those whom they purported to represent. The scientists were able to get some (representative) scallops to anchor but would the mass of scallops follow suit? Likewise, would the scientific community follow the scientists' closest colleagues into believing the data? And would the fishermen follow the directions of their representatives who negotiated with the scientists? When the scientists were successful (which they were for a time), they positioned themselves at the head of three populations – the scallops, the scientific community and the fishermen. Through the intermediaries or representatives, each population had been translated and tied into an actor-network on terms set by the scientists.

"If consensus is achieved, the margins of manoeuvre of each entity will then be tightly delimited. But, as Callon shows, this consensus and the alliances in the network can be contested at any moment. He calls this "betrayal". In this instance, the first betrayal was that of the scallops who, in practice, refused to enter the collectors in a sufficient and regular way. The scallops became 'dissidents'. In the light of this failure they were followed by the scientific colleagues who now became increasingly sceptical, so that the three researchers struggled against threats to their funding and so on. Lastly the fishermen also betrayed the network: the scallops which had been hatched from the first successful anchorages were prematurely fished one Christmas Eve by a group of fishermen; they did not wait the

necessary three years. As the account closes so the network seems to fall apart.

Callon tells this story from the perspective of the scientists and gives us an understanding of how their world was constructed, maintained and (almost) shattered. The other actors were, in actuality, enrolled in this world and this enrolment had profound consequences for each. However, we are told far less about these other actors than we are about the scientists. Although Callon is at pains to point out that the process of network building "does not imply, nor does it exclude, pre-established roles", we discover little about, for instance, the previous roles and network affiliations of the fishermen. Commenting on Callon's study, Wayne (1993) notes that "one could construct a complementary account of network building from the standpoint of, for example, the scallop fishermen as enrolling the marine biologists, as much as the converse". While Callon recognises these 'reverse possibilities' in principle, Wynne argues that, in practice, the implications have not been developed within ANT. In consequence, he claims ANT fails to recognise that ostensibly enrolled actors may in actuality experience a fundamental ambivalence towards scientific knowledge.

W y n n e (1992) illustrates these general points in a perceptive analysis of conflicts between scientists and hill farmers in the north of England in the wake of the nuclear reactor explosion at Chernobyl. In May 1986, following the Chernobyl accident, radioactive caesium isotopes fell on the uplands of Cumbria (an area already well acquainted with the nuclear industry through the nearby Sellafield nuclear complex). The effects of this radioactive fallout were immediately dismissed as negligible by scientists and politicians. However, six weeks later, in June, a ban was placed on the movement and slaughter of sheep. Still the scientists claimed that this would prove to be only a temporary measure, but three weeks later the restrictions were indefinitely extended, although a tightly controlled movement of sheep was subsequently permitted. Initially, five hundred Cumbrian farms were affected; three months later the number was reduced to one hundred and fifty. On these farms the restrictions remain in place.<sup>4</sup>

Wynne tells how the scientific certainties which accompanied the fallout became less and less certain as time went on. Throughout the first summer the scientists continued to believe that the caesium levels would fall quickly. However, it later emerged that their predictions were derived from an inappropriate scientific model of the behaviour of caesium in the upland environment: "The prevailing scientific model was drawn from empirical observation of alkaline clay soils, in which caesium is chemically adsorbed and immobilised and so is unable to pass into vegetation. But alkaline clay soils are not found in upland areas, which have

4 At the time of writing (January 1995) the restrictions still apply to over 70 000 sheep on 60 Cumbrian farms (*Safe sheep*, New Scientists, 25 January 1995, p. 13).

acid peaty soil" ( Wynne 1992). The scientist's model assumed caesium only contaminated the lambs on a one-pass basis but in actual fact it was being recycled back into the soil and the vegetation and, therefore, into the lambs. The farmers could, therefore, see the decreasing certainty of the scientist's knowledge. As Wynne notes: "What was not lost on the farmers... was that the scientists had made unqualified reassuring assertions then had been proved mistaken, and not even admitted making a serious mistake. Their exaggerated sense of certainty and arrogance was a major factor in undermining the scientists' credibility with the farmers...". This loss of credibility was further exacerbated by the "typical scientific idiom of certainty and control" which "was culturally discordant with the farmers whose whole cultural ethos routinely accepted uncertainty and the need for flexible adaptation rather than prediction and control" (ibid).

As a result of watching scientists in action, the farmers became aware of science as rather more precarious than the scientists themselves would let on. Wynne describes how the scientists decided to test the capacity of mineral bentonite to chemically adsorb caesium in the soil. These experiments required sheep to be fenced into plots on which differing amounts of bentonite had been spread, so that the absorption of caesium could be monitored. The farmers pointed out, however, that the sheep were used to roaming freely and if they were penned they would lose condition, which would invalidate the experiments. The scientists ignored these criticisms but subsequently had to abandon the experiments for the reasons identified by the farmers. The farmers thus came to understand how assumptions and judgements underpin scientific facts, an insight that was reinforced as they observed scientists deciding how to take samples and variations in instrument readings. This intimate experience of scientific practice "corroded the wider credibility of official statements couched in the typical language of certainty and standardisation". All in all, Wynne argues, the farmers developed a deep ambivalence towards scientific knowledge.

Wynne believes that understanding the construction and consolidation of identities in particular socio-spatial context is essential if we are to make sense of successful and unsuccessful enrolments. In this respect, he argues ANT overstates correspondence and underplays ambivalence and instability in the identification of actors with network.

"The predominant versions of actor-network theory tend to overstate the correspondence of interest and identities

of actors with the dominant networks to which they have been ostensibly enrolled .... As actor-network proponents recognize in principle, people are always engaged in multiple cross-cutting networks that confer upon them different interests and identities. Each network tends discursively to reduce its actor to its own monovalent identity, but actors are usually busy trying to sustain multiple, sometimes conflicting versions, and hence ambivalence. Thus what may appear on monovalent assumptions to be a sudden total black-to-white switch of loyalties may, when the substructures of ambivalence are in focus, be seen instead as the result of relatively minor shifts of balance between what were always conflicting identities or elements of identity, as reflected in different social networks' (1993)<sup>5</sup>

Wynne (1992) thus argues that Callon's account of the scientists and the scallop fishermen exaggerates the extent to which the latter's 'betrayal' actually represented a major shift in their allegiance because it does not recognize that the fishermen were always likely to have been ambivalent about the identity designated for them by the scientists. But because the scientists were not interested in the fishermen's versions of their identity ( Callon 1986a) - in effect they were invisible - so from the former's perspective the fishermen's switch of loyalties represents a move from black to white; it is a true betrayal.

However, there is clearly more to the fishermen's betrayal than Callon's first (1986a) narration indicates, as he implies in a late paper. In the first publication he leaves the case study at the point where the scientists have been twice betrayed (the scallops had also resigned their role) and so must recast their strategy if their network is to survive. In particular, they will "undertake a vast campaign to educate and inform (i. e. form) the fishermen." (1986a). But in a later, more detailed paper on the same case Callon and Law (1989) indicate that great efforts had already been made to bring the fishermen into line<sup>6</sup>; an attitude survey had led the researchers to conclude that those fishermen who had failed to respond to the campaign to (re)form their attitudes and identities probably harbored "deep-seated feelings of injustice" ( Callon and Law 1989). However, this information did not lead to any appreciation by the scientists of ambivalence on the part of the fishermen, but merely to yet another attempt, via the imposition of regulations, to force them to conform. Thus we might conclude a deeper understanding of the ambivalent components of the fishermen's identity would have allowed the scientists (and

<sup>5</sup> But see also Latour (1991): 'Indeed all statements have a reality and this reality can be evaluated precisely by comparing, each time, what an actor says about another actor with what this actor says about itself'.

<sup>6</sup> The activities of the fishermen were measured (they were requested to make detailed records of their fishing trips), surveillance was undertaken (fishing trips were followed, fish catches were measured and fishermen were questioned), quotas were proposed, an education programme was set up (including public meetings, evening classes, films and a special newspaper), an attitude survey was carried out (showing that the fishermen were not an homogeneous group) and finally regulations were imposed (protection of selected nursery grounds, enforced by the police and vigilantes organised by the local fishing committee) (Callon and Law 1989)

thus the academic observer) to be better able to understand the subsequent "betrayal".

The scientists that Wynne describes appear as uninterested in the sheep farmers' versions of their identity as Callon's scientists were in those of the scallop fishermen. These former group of scientists were brought to Cumbria because of an unwelcome intruder – the radioactive caesium – and in this case it was the caesium that undermined the network because it did not conform to the scientists' representation and so forced them to alter some of their assumptions. The Cumbrian farmers had doubts about the credibility of scientific knowledge, and were suspicious that the source of the contamination was the Sellafield nuclear complex rather than Chernobyl (a scepticism that, as Wynne makes clear, derived also from their membership of other social networks and prior knowledge of accidents at Sellafield). However, it is difficult to see how the sort of betrayal displayed by the fishermen could have been mounted by the Cumbrian farmers. They were enrolled in a scheme to prevent contaminated lamb from reaching the market place. In this they were dragged into line using legally enforceable restrictions on the movement and slaughter of sheep contaminated with radioactivity above a scientifically determined limit. In theory the farmers could have repudiated this role (in practice the regulations were probably incontestable) but in any case the movement of sheep was not the scientists' problem. Their problem was how to control the caesium and the farmers were not enrolled in this part of the venture. They had to stand by as the scientists went to work in their locale, and simply noted the marginalization of their local knowledge as the scientists spun it.

However, what both these studies indicate is that the relationship between scientific and lay actors, and between scientific and local (non-scientific) knowledge forms, cannot simply be assumed in advance. All actors and entities have resources (identities and interests drawn from participation in various networks) that can enable them to act differently. Arguably, the issue is not just, as Wynne believes, that the reverse possibilities of ANT are under-developed but that in general insufficient attention has been paid to what happens after knowledge apparently becomes true enough to routinely depart the laboratory (see also *Buttel and Taylor 1994*). Both Callon and Wynne's studies are useful, however, in that they begin to illustrate how we might consider the application and consumption of science as a political process in which power relations

play a constitutive role. As a result the seeming inevitability of scientific hegemony can be questioned, for it becomes a little clearer that the 'long' networks of science do not necessarily find it easy to insert themselves into diverse contexts and situations, especially when the actors to be enrolled have resources at their disposal which allow for effective resistance.

#### ADAPTING AND RESISTING; THE FARMERS OF PEVENSEY MARSH

In Callon's study the focus is the world of scientists involved in network building, while Wynne's attention is given to the world of those on the receiving end of scientific knowledge. Our third example illustrates how both these perspectives might be combined in a single study. It concerns nature conservation on the Pevensy Levels in East Sussex, and is drawn from research carried out by one of us (*Clark 1994*).<sup>7</sup> As with Callon's study, we will examine how Society and Nature are intertwined as conservationists attempt to enrol both farmers and nature. We also, pace Wynne, show that farmers saw their enrolment in rather different terms to those proposed by the scientists. A brief consideration of the farmers own understandings of nature enables us to show how science ran into stocks of local knowledge. More generally, this example highlights the specificity of place, in which a more intimate, and so more complex, relationship between the objects of scientific knowledge and the consumers of that knowledge is implicated. Taken together with the case studies presented in the previous section, this allows a comparison of the differing relations between scientific and local knowledge prevailing in different socio-spatial contexts.

The place in question, the Pevensy Levels or Pevensy Marsh as local people call it, is still mostly grazing marsh. Its pastures have traditionally been used for summer fattening of cattle and, despite substantial inducements to do so,<sup>8</sup> agricultural intensification has been much less widespread than might have been anticipated. The flat open landscape still presents a mosaic of grassland intersected by drainage ditches (also called dykes). These ditches also act as 'wet fences' and as sources of drinking water for stock, and, as they are prone to develop a profuse vegetation quite rapidly if left to their own devices, they must be periodically 'cleaned' to maintain these functions. However, while the environment of Pevensy Marsh is substantially the

<sup>7</sup> This research is part of a wider research programme, Valuing Nature, conducted by Clark and Burgess at the Department of Geography, University College London. The support UK Economic and Social Research Council is gratefully acknowledged. This analysis draws on work with farmers which involved 39 semi-structures interviews and an in-depth discussion group (see *Burgess et al 1988a, 1988b*) in which nine farmers took part. In the discussion, which focused on farming and nature conservation, group members explored the issues on the basis of their experiences, perceptions and understandings. The main themes to emerge from farmers' discussion are documented in a group report (*Clark and Burgess 1994*) and aspects of their understandings of nature and conservation have been analysed in *Clark (1994)*.

<sup>8</sup> The Ministry of Agriculture provided grants for under-drainage. These were discontinued in the early 1980s but at their height amounted to sixty per cent of the capital needed to drain fields in order to turn them over to corn.

creation of generations of farmers, it is conservation scientists who have defined the value of the wildlife of the area. About 3500 hectares have been notified as a Site of Special Scientific Interest (SSSI)<sup>9</sup>, primarily because of the plants and invertebrates associated with the ditches. A considerable number of these are nationally rare, including the Fen Raft Spider for which Pevensy is one of only two sites in Britain (English Nature 1990).

By the late 1980s scientists at English Nature (EN), the agency responsible for SSSIs in England<sup>10</sup> had become concerned that many were deteriorating through lack of adequate management. As one means of combating their conservation problems EN developed the Wildlife Enhancement Scheme (WES), which aims to maintain and improve the wildlife interest on selected SSSIs by paying landowners to adopt specified practices<sup>11</sup>. Management guidelines are locally specific and private landowners (mostly farmers) who (voluntarily) join the Pevensy WES agree to comply with its instructions on grazing patterns, pasture management, ditch maintenance, ditch water levels, and the use of agricultural chemicals. For this they were paid GBP 74 per hectare per year in 1991 (English Nature 1991).

The WES invokes an alliance between EN, farmers and (implicitly) nature. But despite the farmers' necessary engagement in the scheme they are nonetheless written in as ciphers, following the standard practice of scientific enrolment. Thus the WES incarnates farmers as technicians whose interests are primarily financial. It implies that they own a rich wildlife habitat on which their (unknowing) actions have already had adverse effects and they will continue to despoil local natural resources if they are not paid to change their ways. They are seen to possess the agricultural skills (stock management, hay cutting, ditch cleaning and so on) necessary for managing the Levels in the 'traditional' way (English Nature, 1991) and so as capable of enacting EN's instructions. But they are also identified as unaware of 'wild' nature and as ignorant of how to look after it properly. Years of experience in the local arena, therefore, do not count; a Pevensy farmer might, for instance, satisfactorily operate a Hi-Mac (a machine used for cleaning ditches) but he could not know the right time to clean out a ditch. In short, farmers are

integrated into the scientific network as potentially ignorant actors, unable to master the arts of conservation; conversely the adept manipulation of nature is defined as the preserve of scientists.

In general, ecological science turns 'wild' nature into species, populations, communities, habitats and ecosystems whose behaviour is expressed in principle and theories, although conservation science recognises that the particularities of nature require the universal tenets of ecology to be augmented with more local research, in this case concerning the specificities of habitat (ditches) and place. In Pevensy, this research indicated that the richest areas for ditch wildlife were contained in a variety of ditch types (identified in terms of dimensions, physical parameters and age i. e. the time that had elapsed since the ditch was last cleaned) and that ecological diversity could be maintained by cleaning ditches on a rotational basis i. e. on a cycle of six to ten years which would provide examples of plant and animal communities at different successional stages (Newbold et al 1989). Data on the flora in a sample of ditches found a variable relationship between species diversity and other variables, and led to their classification into types which essentially reflected the plant communities of each successional stage (Glad- ing 1986). Nonetheless, the universalising practices of science were still at work: while the compositions of the plant and animal communities in each stretch were perhaps unique, the ditch typology – which had been created from investigations into a few carefully chosen local ditches (the 'laboratory') – was reconstituted as applicable to any ditch on Pevensy. This knowledge formed the basis of the WES management prescriptions and stipulated that landowners joining the scheme should to agree to: "Carry out a staged, approximately six-year cycle of ditch cleaning and reprofiling so as to maintain a constant community of species within your Scheme area" (English Nature 1991).

As in Callon's case study, the WES would only succeed if both natural entities and the farmers acted in accordance with the roles designated for them by the scientific network. Nature would have to prove docile and dependent; over time, its component entities would have to obediently reproduce and disperse themselves to give the right communities in each ditch. And farmers would have to be prepared to become not just

9 The SSSI designation dates from 1949 when the Nature Conservancy was established with the power to establish nature reserves and a duty to notify SSSIs. These were deemed to be areas in need of special protection due to their biological, geological or physiographic features. Under the Wildlife and Countryside Act 1981 the Nature Conservancy Council (successor to the Nature Conservancy) was required to renotify SSSIs designated under previous legislation. (The Pevensy Levels was renominated in 1990). The legislation provides for compensation payments to landowners for not carrying out potentially damaging operations on SSSI land, and obliges local planning authorities to consult the statutory agency before consenting to any development on such sites. Nonetheless, the the framing of the legislation means that protection and maintenance of SSSIs relies heavily on the voluntary co-operation of landowners.

10 English Nature is the statutory nature conservation agency for England. Prior to July 1991 its role was the responsibility of the Nature Conservancy Council, which covered England, Scotland and Wales.

11 The structure of the WES was developed primarily at English Nature's headquarters, and had to be approved by the Department of the Environment. Its particulars, including the management prescriptions for each scheme, were determined locally, although they had to be agreed with specialist at headquarters. Initially the WES covered four sites and was to run for three year. In 1994 the scheme was extended and four more sites were added (English Nature, 1994).

farmers but also technicians capable of managing SSSI land in response to financial inducements. Nature's 'consent' to enrolment was anticipated in the scientific knowledge embodied in the WES rules, but farmers were anticipated to be less biddable and so their consent was to be obtained with payment. However, although the Pevensey farmers did not betray the scientists' representations of them – mass resistance would unquestionably have sunk the Pevensey scheme but by 1994 a majority of the eligible farmers had joined – neither did they simply conform to the identity that the WES had stipulated for them.

Far from seeing their practices as problematic the farmers also claimed a conservationist mantle, but as food producers rather than land managers. Their traditional farming practices have allowed wildlife to flourish on the Marsh. As one commented, that there is any wildlife to conserve shows "how in tune we are with nature", while another argued: "If we had done anything wrong in the past there would be no SSSI. It wouldn't be worth conserving, would it?" Nor do they see themselves as ignorant of nature and wildlife. Most Marsh farmers are familiar with the wild plants and especially the birds and animals found on their own patch (a few are proficient naturalists) and many notice nature in action. For example, they watch reeds and other vegetation recolonizing newly cleaned ditches. Their observations show them that the sorts and numbers of species found on their land change from year to year. Land left unfarmed reverts to scrub; as one species declines another takes over its space. This local knowledge is characteristically rooted in the particular, in the Marsh and in their experience of farming. However, within their own worlds it may also be interwoven with more universal concepts, in particular that of the balance of nature.<sup>12</sup>

Many of the species that are important to conservationists are all but invisible to farmers, making the latter somewhat skeptical of the knowledge claims of the former. The WES tells them that the Levels are home to "important communities of plant, animals and birds" (English Nature 1991) but the rarer plants and invertebrates are not generally familiar species. Although the farmers could name the Fen Raft Spider, it was only because the scientists had told them of its existence. As one remarked: "We've only been told they're there but nobody's seen them and they're not allowed to see them. I walk the marsh every day and I don't see them", adding later that: "All this conservation is alright but who does it benefit? All it benefits really is these few scientists who know where these spiders are and what they look like". Thus in defining themselves differently, Marsh farmers also understand nature differently. Their engagement with the natural world and with the 'long' networks of science (coupled with their membership of various social network)

allows them to ascribe a different character to nature as well as to identify themselves as knowledgeable actors.

The disjuncture between scientific and local knowledge was evident in the farmers attitude to the ditch management prescriptions proposed by EN. Prior to the introduction of the WES, farmers themselves had made the relevant decisions about when to carry out the operation and which ditch to clean. The six-year ditch cleaning cycle mandated by the WES was at odds with what many of them were used to doing. Not only were a majority accustomed to cleaning their ditches less frequently, but also ditches are things they clean out "whenever they need doing". This judgement involves complex overlapping considerations: how well ditch is functioning, the urgency of other farming tasks, the cost, the time of year, the availability of a contractor if one is used, what length of ditch needs doing, and which ditch it is. Ditches in different parts of the Marsh differ in how soon they become overgrown and silted up, and hence in how often cleaning is required. Some ditches tends to choke up after a few years while others remain clear for decades. Some farmers were, therefore, explicitly sceptical that a six year cycle would work. The very local specificity of ditches belies hard and fast rules, while the SSSI designation seemed to validate farmer's past practices as ecologically beneficial. Their appraisal of the six year cycle as likely to "muck up the ditches" derived from knowledge of the rate of recolonisation, gained from long observation of particular local conditions. Ditches seemed likely to deteriorate with more frequent cleaning because this would not give plants and animals sufficient time to re-establish properly. One of the more outspoken farmers claimed that as a result of conservation practices "there won't be any spiders or anything else".

Scientific conservation brought with it a knowledge of something already familiar to Marsh farmers. But it was still a strange knowledge because the farmers's local knowledge rendered nature rather differently. The WES did not embody this element of farmers' identity just as it did not take account of their version of their social role. It preferred to construct farmers as financially motivated technicians. To the extent that most of those who joined the scheme did so primarily for the extra cash, they conformed to the terms of their enrolment. But these terms were only economic; they did not draw the farmers in as knowledgeable actors vis-à-vis the natural world. Farmers were deemed to know about farming, but not about nature. And the corollary of making farmers only fit for farming was that it bound nature more closely to science. Conservation was thus EN's concern and not the farmers'.

The tension in the relationship between Pevensey farmers and science derives from the seeming inability of the scientific network to be constructed in such a way that non-scientists are enrolled in ways which

<sup>12</sup> This idea, that left alone ecosystems maintain themselves in equilibrium, represents what Pickett et al (1992) call the lay translation of the classical paradigm of ecology.

allow them to retain some sense that their understandings of the natural world are valuable in their own right. As one farmer observed: "They want us to clean the dykes when they're not worth cleaning out ... These conservationists, they want to look to the farmers a bit more because we're the best conservationists they've got. We've had more experience of the land than all these professors and that will ever know to have". As knowledgeable agents the farmers felt that their understandings should count for something but for the scientists they clearly did not.

## CONCLUSION

We began this paper by examining some recent insights from the sociology of science. These derived from the study of science in action and showed how science is produced by taking 'local' phenomena into the laboratory and reconstituting them as universal, standardized scientific products. These products are then disseminated via networks which are constituted as actors are associated in terms which favour the scientific centres. However, the extension of the networks into various local situations is a potentially precarious enterprise, as we illustrated using three case studies. The first study, that of the scallops and fishermen of St Brieuc Bay, outlines an attempt to construct a scientific network, showing how a group of scientists tried to enrol an assortment of unruly and disruptive entities. From the perspective of the scientists, it was shown how an attempt was made to extend scientific knowledge into a particular socio-spatial locale and the response of existing actors and entities as they were enrolled within the scientific network. The extension of the network failed in this case but the reasons for the failure were not fully explored because in many important respects the fishermen remained hidden from view. In contrast, the studies of the Cumbrian and Pevensy farmers illustrated in a more fulsome way how local actors can draw upon social relations and forms of local knowledge in order to resist or mediate the terms of enrolment. In Wynne's analysis of Chernobyl effects in Cumbria a shift in the status of scientific knowledge in the locality was registered, forced on the scientists because one entity, the caesium, whose movement in soil was assumed to follow a universal pattern, refused to behave 'properly' in the prevailing local conditions. On Pevensy local specificity was more central to the consolidation of the scientific network and this posed problems for the formulation of simple, standardized scientific rules. However, as in Cumbria, the scientists seemed equally unwilling to acknowledge that local knowledge might have something to offer.

We can begin to appreciate, therefore, that the growth (or contraction) of a scientific network is dependent not just on the actors who build it but also on those who are enrolled. Moreover, once we acknowledge the significance of local knowledge, we can see that the terms of enrolment are likely to vary according

to socio-spatial context. In the scallop fishing case the enrolled fishermen had to be prepared to concede the utility of scientific knowledge; that a group of them were not persuaded to do so seriously undermined the network. However, it is difficult for the analyst to make sense of this refusal because we learn very little about the fishermen, their identities, their interests or their possession of local knowledge. In contrast the studies of the Cumbrian and Pevensy farmers tell us more about the potential complexities of enrolment. The socio-spatial contexts are different, and the two sets of farmers brought different mixtures of knowledge forms – the natural and the social, the scientific and the local – to their engagement with the scientific networks. However, in neither case were they docile consumers. The ambivalence of the Cumbrian farmers was mediated through the failure of the certainty paraded by scientists, reinforced by observations of the precariousness of scientific practices. Moreover, local knowledge collided directly with scientific arrogance when the experiments with bentonite were proposed. The scepticism of Marsh farmers was also directly based on an intricate set of understandings of their local environment. This meant that, like the scientists, they too could make specific predictions about what would happen to natural entities in the locale. Where the Cumbrian farmers could only surmise, however, the Marsh farmers could challenge EN's monopoly of knowledge of nature and propose the actual disappearance of the spiders.

Neither ambivalence nor scepticism presented a serious challenge to the respective scientific network. Nonetheless, science did not have an easy time. All three studies illustrate the precariousness and sheer difficulty of trying to make science work in the field. In St Brieuc Bay it looked likely to fail, in Cumbria it struggled for accuracy, and in Pevensy the complexity of local conditions cast doubt on the ability of standardized scientific practices to achieve the stated goals. But whatever the circumstances, the scientists continued to assert the value of their knowledge. They showed little interest in the identity and interests of farmers or fishermen beyond the monovalent guise under which they were enrolled into the networks, and they disregarded the stocks of local knowledge held by these actors and hence the very possibility of learning from them.

In each local context the contours of the interface between scientific and local knowledge are different but what is common to all three cases is the practice of science as intrinsically special, as somehow apart from the social context. We would argue that clinging to this notion prevents the development of a more symmetrical relationship between scientists and other actors in the field, or between 'scientific' and 'non-scientific' local knowledge. We would also suggest that the practice of science on the field might benefit, if scientists were prepared to abandon some of their presumptions and concede more ground to local knowledge, engaging in

a dialogue with local actors. Although an abandonment of the privileged status of science is a precursor to greater democratization, this does not imply, however, the denial of its strengths. As Latour writes, we should "retain what has always been most interesting about them (the sciences): their daring, their experimentation, their uncertainty, their warmth, their incongruous blend of hybrids, their crazy ability to reconstitute the social bond. We take away from them only the mystery of their birth and the danger their clandestineness posed to democracy" (1993). If we can experience science as a collective process, as well as discursive and real<sup>13</sup>, the imbalances may start to be redressed. The aim should be, therefore, to make the extension of scientific networks a more democratic process in which the relationship between scientific knowledge and local knowledge is seen to be one with the potential for mutual enhancement as 'hybrids' of the two are more frequently applied to the creative solution of environmental and other problems.

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Arrived on 29th August 1995

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<sup>13</sup> 'Is it our fault if the networks are simultaneously real, like nature, narrated, like discourse, and collective, like society?' (Latour 1993, emphasis in original).

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Pokud autor používá v práci zkratky jakéhokoliv druhu, je nutné, aby byly alespoň jednou vysvětleny (vypsány), aby se předešlo omylům. V názvu práce a v souhrnu je vhodné zkratky nepoužívat.

**Název práce** (titul) nemá přesáhnout 85 úhozů. Jsou vyloučeny podtitulky článků.

**Krátký souhrn (Abstrakt)** je informačním výběrem obsahu a závěru článku, nikoliv však jeho pouhým popisem. Musí vyjádřit všechno podstatné, co je obsaženo ve vědecké práci, a má obsahovat základní číselné údaje včetně statistických hodnot. Musí obsahovat klíčová slova. Nemá překročit rozsah 170 slov. Je třeba, aby byl napsán celými větami, nikoliv heslovitě. Je uveřejňován a měl by být dodán ve stejném jazyce jako vědecká práce.

**Rozšířený souhrn (Abstract)** je uveřejňován v angličtině, měly by v něm být v rozsahu cca 1–2 strojopisných stran komentovány výsledky práce a uvedeny odkazy na tabulky a obrázky, popř. na nejdůležitější literární citace. Je vhodné jej (včetně názvu práce a klíčových slov) dodat v angličtině, popř. v češtině či slovenštině jako podklad pro překlad do angličtiny.

**Úvod** má obsahovat hlavní důvody, proč byla práce realizována a velmi stručnou formou má být popsán stav studované otázky.

**Literární přehled** má být krátký, je třeba uvádět pouze citace mající úzký vztah k problému.

**Metoda** se popisuje pouze tehdy, je-li původní, jinak postačuje citovat autora metody a uvádět jen případné odchylky. Ve stejné kapitole se popisuje také pokusný materiál.

**Výsledky** – při jejich popisu se k vyjádření kvantitativních hodnot dává přednost grafům před tabulkami. V tabulkách je třeba shrnout statistické hodnocení naměřených hodnot. Tato část by neměla obsahovat teoretické závěry ani dedukce, ale pouze faktické nálezy.

**Diskuse** obsahuje zhodnocení práce, diskutuje se o možných nedostacích a práce se konfrontuje s výsledky dříve publikovanými (požaduje se citovat jen ty autory, jejichž práce mají k publikované práci bližší vztah). Je přípustné spojení v jednu kapitolu spolu s výsledky.

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Original scientific papers, short communications, and selectively reviews, that means papers based on the study of technical literature and reviewing recent knowledge in the given field, are published in this journal. Published papers are in Czech, Slovak or English. Each manuscript must contain a short and a longer summary (including the key words).

The author is fully responsible for the originality of his paper, for its subject and formal correctness. The author shall make a written declaration that his paper has not been published in any other information source.

The board of editors of this journal will decide on paper publication, with respect to expert opinions, scientific importance, contribution and quality of the paper.

The paper extent shall not exceed 15 typescript pages, including tables, figures and graphs.

**Manuscript layout** shall correspond to the State Standard ČSN 88 0220 (quarto, 30 lines per page, 60 strokes per line, double-spaced typescript). A PC diskette should be provided with the paper, written in an editor program, preferably T602. Tables, figures and photos shall be enclosed separately. The text must contain references to all these annexes.

The **title** of the paper shall not exceed 85 strokes. Subtitles of the papers are not allowed either.

**Abstract** is an information selection of the contents and conclusions of the paper, it is not a mere description of the paper. It must present all substantial information contained in the paper. It shall not exceed 170 words. It shall be written in full sentences, not in form of keynotes, and comprise base numerical data including statistical data. It must contain key words. It should be submitted in English and if possible also in Czech or Slovak.

**Introduction** has to present the main reasons why the study was conducted, and the circumstances of the studied problems should be described in a very brief form.

**Review of literature** should be a short section, containing only literary citations with close relation to the treated problem.

Only original method shall be described, in other cases it is sufficient enough to cite the author of the used method and to mention modifications of this method. This section shall also contain a description of experimental material.

In the section **Results** figures and graphs should be used rather than tables for presentation of quantitative values. A statistical analysis of recorded values should be summarized in tables. This section should not contain either theoretical conclusions or deductions, but only factual data should be presented here.

**Discussion** contains an evaluation of the study, potential shortcomings are discussed, and the results of the study are confronted with previously published results (only those authors whose studies are in closer relation with the published paper should be cited). The sections Results and Discussion may be presented as one section only.

The citations are arranged alphabetically according to the surname of the first author. References in the text to these citations comprise the author's name and year of publication. Only the papers cited in the text of the study shall be included in the list of references. All citations shall be referred to in the text of the paper.

If any abbreviation is used in the paper, it is necessary to mention its full form at least once to avoid misunderstanding. The abbreviations should not be used in the title of the paper nor in the summary.

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## OBSAH - CONTENT

Bruckmeier K., Cheng Xu: Cultural specificity of sustainable agriculture a comparison of China and West Europe – Kulturní zvláštnosti trvale udržitelného zemědělství: srovnání Číny a západní Evropy.....	445
Villafane A. G.: Regional specialization and productionist politics in agriculture vs. the productive and reproductive strategies of social actors. the case of family producers in a cattle raising region on the Argentine pampas – Regionální specializace a produkcionistická politika versus produkční a reprodukční strategie sociálních aktérů. Případ rodinných farem v oblasti chovu skotu na argentinských pampách.....	457
Draganova M.: Agrarian policy in Bulgaria: clash between viable individual models for survival and contradictive state policy? – Zemědělská politika v Bulharsku: střet mezi životaschopnými individuálními modely pro přežití a protikladnou státní strategií? .....	471
Hudečková H., Lošťák M.: Rozličné životaschopné modely a strategie pro český venkov – Different viable models and strategies for the Czech countryside .....	477
Teather E. K.: Farm women in Canada, New Zealand and Australia redefine their rurality – Zemědělské ženy v Kanadě, Austrálii a na Novém Zélandě redefinují svou ruralitu .....	481
Brandth B.: Rural femininity and masculinity in transition – Rurální femininita a maskulinita v přeměně .....	495
Wiesinger G.: The importance of farmers' relief services for social security in Austria – Význam služeb zajišťujících náhradní pracovníky pro zemědělské farmy pro sociální jistoty v Rakousku.....	503
Clark J., Murdoch J.: The consumption of science as a political process: some lessons from the field – Spotřeba vědy jako politický proces: několik lekcí z praxe.....	509