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RURAL TECHNOLOGY TRANSFER IN TRANSITION ECONOMIES IN HUNGARY

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CONTENT

1 Introduction and background

Hungary' territory amounts to 93,030 km^2, had a population of 10,096 thousand on 1 January 2005 showing a constant decrease. The conditions for agriculture, including soil quality, climate, and terrain, are favorable in international comparison.

Agriculture and rural activity is profound. The 63% of the country's lands actually under agricultural cultivation in 2004 and 2005 was divided between various sectors as follows: 48.5% – farmlands; 11.4% – fields and meadows; 3.1% – orchards and vineyards. 19.1% of the total area is covered by forests. The distribution of agricultural- and cultivated land is uneven among the Hungarian regions, with the Northern- and Southern Great Plains having the largest share (20-20%), and Central Hungary the smallest (6-7%).

87% of Hungary in 2003 qualified as rural areas, which include 96% of the country's settlements, and provide a home for 47% of the total population. These rural areas comprise the specific type of region, characterised by lower population densities, heavy reliance on the land for livelihood, and a settlement structure of low urbanisation (typified by villages, small towns, and, in certain regions, isolated farms). Rural areas also include the outskirt territories of non-eligible settlements with population above 2% in outskirt territories.

1.1 Introduction to rural technology transfer

The most important task Hungarian rural development faces is to handle the special situation of Hungary in terms of low activity rate of the rural population, the social tension deriving from the low rate of employment: low rate of income. It means at the same time to resolve the discrepancy between prosperous agricultural capabilities and the underdeveloped rural areas.

Successful rural economy is a necessary but not completely sufficient requirement for the creation of successful and viable villages. Innovation-oriented modernisation is also necessary in the under mentioned areas – with respecting traditions:
? Developing access to services – using new IT technologies
? Village renewal – heritage protection
? Development of local capacities, creation of innovative rural development networks
The claim of rural areas to improving their supply with infrastructure (transport, inner areas), and to the financing of their health-care and basic educational services go beyond the frames and possibilities of agricultural rural development, so the realization of these developments are only possible through a complex rural policy.

It merits attention that Hungarian agriculture is dualist; where there are two main kinds of users of rural technology transfer: the mass of individual farms (706,877 in 2005; decreasing) and 7,927 (in 2005; increasing) agricultural corporations. The former group (including 363,049 subsistence and 233,703 semi-subsistence farms in 2005) had on average more than € 2000 output, while the latter group had on average more than € 220,000 output per corporation. Technology transfer is certainly much more important for market oriented individual farms, while agricultural corporations have less scarcity of capital, more lobby power and better chance to access public grants.

1.1.1 Agricultural and rural training

The share of agricultural production in employment was 5 %; inclusive of the food industry, this figure amounted to 8.6% (334 thousand employees) in 2005. It has been gradually decreasing in recent years.

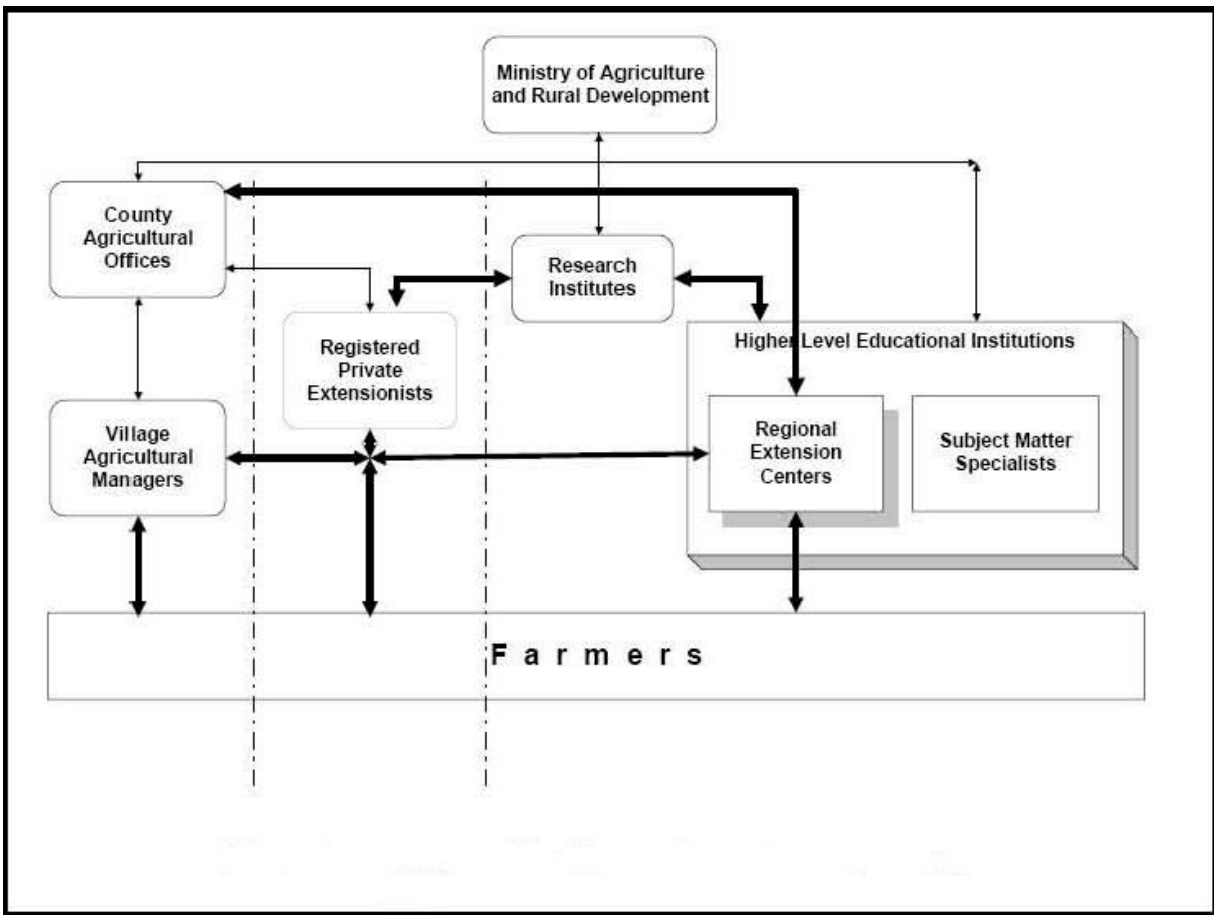
It is a problem of the Hungarian school system overall that education is far too theoretical and this is certainly true for vocational education. The institutional background of vocational training however is well-developed; nevertheless, the **vocational qualification level of individual farmers is low**. The general standard of vocational training is appropriate; although it is still not properly adjusted to the changes in operational and economic conditions. Out of those **employed** in agriculture, 7.7% had college or university degree, 58.2% had a secondary degree in 2001, and 34.1% had general primary school qualification. Out of **individual farmers** 27.9% of have no agricultural qualification, 64.3% of them have basic qualifications, 5.9% have secondary qualifications, and 1.9% have college or university qualifications in agriculture. Nearly one fourth of individual entrepreneurs are women, who are characterised by a more unfavourable age composition (their average age is seven years higher than the 53 years characteristic to men) and vocational training level than men. 2% of men and only 0.2% of women have higher education degrees. Individual farmers mostly lack knowledge about the European Union (market and production regulation, support system, requirements of product quality, animal keeping and environment protection) and professional farm management knowledge, which is partly due to the immatureness of post-school adult education.

1.1.2 Agricultural and rural advisory/consultancy services

Following the privatisation of the agricultural sector of this country, and the creation of **new types** of agricultural co-operatives and individual holdings, it becomes more and more pressing **to establish an agricultural consulting network**, which can satisfy present professional needs. In the previous years a governmental conception was developed to achieve agricultural consulting through a "village agronomist" (village clerk) network. According to the latest ideas, based on international practice, the agricultural consulting work should primarily be based on the agricultural education and research institutions, and their model farms. The tripartite unity of **education-research-consultancy** could greatly contribute to the utilization of the benefits of the information society and could ensure the development of broadly conceived human resources.

Figure 1. shows the structure of the current Hungarian Advisory system.

Figure 1:



The Hungarian Advisory System's reformulation started in 2005 according to Government decree.

Basic elements of the new Advisory System:

- **Client Advisory Service** – Village agronomists and advisors of the National Rural Development Plan are supposed to come together under common umbrella and provide extension free of charge. The service will be supervised by Ministry of Agriculture an Rural Development.
- **Farm Advisory System** – according to the government decree it has to be run obligatory by the Ministry.
- **Rural Development Advisory Service** – based on LEADER principals and LEADER groups it will be formulated from bottom to up by Local Development Communities (Helyi Vidékfejlesztési Közösségek, NVK). They establish local bureaus and give advise in the field of rural development.

The activity of the three subsystems will be coordinated by the Ministry's Rural Development, Training & Advisory Institute (former educational department).The process will be completed by the end of 2007.

1.1.3 Role of farmers' groups, including national or regional farmers' organisations

The currently operating **Regional Advisory Centres** are supposed to continually support the advisory organisations on their territory. They incorporate the scientific services and knowledge of associated higher education institutions of the region in question. At the same time, they take part in controlling and evaluating of advisory activity as well.

The **Professional Centres** established on regional research institutes are providing vocational support for Client Advisory, Farm Advisory and Rural Development Advisory Service organisations. They ensure free access to their professional data base.

The new Advisory Systems, the Regional Advisory Centres and the Professional Centres are going to formulate the **National Rural Network** in order to bring together and coordinate the activity of players interested in rural development.

The farmers' groups are not very much interested in training/advisory services for farmers. Instead, they are much more politics-oriented and play a vital role in agricultural policy formulation. However, they agree with establishing the new **National Rural Network**.

1.2 Agricultural and rural skill level

The **skills of farmers** in business administration, marketing and the compilation of applications **are deficient**. Individual farmers are mostly in lack of knowledge about the European Union (market and production regulation, support system, requirements concerning product quality, animal keeping and environment protection) and professional farm management.

2 Specific technology transfer issues

2.1 Training provision

2.1.1 Quality and suitability of provision

In the last few years there were considerable changes in the *legal provisions of education*. In 1999, 2002 and 2003, there were significant Amendments of the Public Education Act of 1993. Furthermore, various newly established Acts had direct effects on the system of public education: regulations on the textbook market; on adult training; on the payment of compulsory vocational training contribution and on the development of the training system.

As to the *structure of the school system* and the progression of students, in Hungary, like in developed societies, a longer basic education phase is followed by a fairly differentiated upper secondary education and training phase offering schooling to various needs of customers. One of the most important developments of the nineties was that the secondary school-leaving exam was taken on large scale and a rapid expansion of higher education began.

2.1.2 Availability and spatial issues

The term '*regional system of public education'* refers to conglomerates below the national level, having their specific characteristics and their own way of working. They have relevance for the regional policy.

The field of formation of regional educational processes in Hungary can be summarised briefly by the following. Possibilities of divergent territorial development in public education are principally given at settlement level since the main owners of schools (90%) are local authorities. Approximately 2,400 of 3,200 local authorities maintain educational institutions of ISCED (International Standard Classification of Education, 1997) 0, 1 and 2 levels. ISCED 3 level education – to be provided by county-level but this possibility is given also to local authorities by Hungarian law – is significant also at local level, basically in towns. Vocational institutes and pedagogical services are those that are maintained mostly by county-level authorities. From the 90s, the continuously growing non-state educational sector (church, foundation and private schools) and a rather slowly forming educational cooperation of small regions have been coloring the picture of territorial processes of education. The development of regional systems of public education has been supported by a county level planning system since 1996; that was extended to local level planning in 1998. The buds of regional level educational planning can also be seen in some regions.

2.1.3 Practical issues

Public education in Hungary is affected by many problems; these problems, e.g. modernization of content of teaching and learning, with special respect to basic skills, applying LLL paradigm in education and also efficiency problems, require a change of paradigm everywhere not just here.

Public education systems of some regions of Hungary, having unfavorable social and economic background, can use as a kind of their potential the fact that they previously could not evade problems.

To exploit regional potentials of public education to HRD a diversified policy, adaptable to local/regional needs and possibilities and agreed in main goals by professionals and the public, built on a cross-sectoral approach, is needed, in spite of a normative approach to development strategy.

2.1.4 Demand side issues

The main topics of specific knowledge should cover the following areas:

- biotechnology in plant reproduction,
- renewable energy production by biomass,
- processing and utilization of animal and vegetal by-products,
- management skills (strongly including marketing),
- crop production (wheat, barley, maize, sunflower, etc.),
- grape and wine production,
- greenhouse horticulture (vegetables, ornamentals, etc.),
- animal breeding (cattle, pig, sheep, poultry, goose, duck, rabbit),
- slaughterhouses, meat processing plants, cold stores, fodder mixers, and any

- other food industrial processing and storing facilities
- land reclamation, irrigation.

2.1.5 SWOT analysis

Training provision

Strengths	**Weaknesses**
- Broad network - Strong theoretical fundamentals - Good and well trained teaching staff	- Financial and educational inefficiency - Weakness in application and exercises - Not flexible staff in moving and thinking
2.1.1.1.1 Opportunities	**2.1.1.2 Threats**
- New curricula development based on applied theory - Exchange of staff and curricula (also at international level!) - Networking is appropriate for knowledge spillover	- Unimaginative rural environment - Networking is financially violable - Appearance of business based training organisations

2.2 Extension and advisory services

The system of special advisory services is well established in Hungary. The agricultural advisory system with State support and legal regulation has been functioning in its current form since 1999.

2.2.1 Public sector services

The Ministry of Agriculture and Rural Development is responsible for the national supervision of the specialised advisory services. The related tasks of organisation, administration and coordination are carried out at the national level by the MARD Institute of Training and Consulting in cooperation with the 7 Regional Advisory Centres (RACs) in charge of regional tasks.

RACs are such organisations accredited by the national authorities that upon the related orders by the farmers and on the basis of the agreements made with farmers provide professional advisory services to agricultural producers and forest farmers in a manner being eligible for associated supports specified in the national and EU legal regulations. Any RAC may furnish professional advisory services only by its professional advisors registered in the Register of Professional Advisors.

In addition to this system about 400 consultants carry out public-benefit advisory tasks related to the National Rural Development Plan in 2004-006. From among the civil servants of the Ministry's Agriculture Offices in the counties the village agri-economists (650) – related to their public administration tasks, also provide general, informative advices to the farmers.

2.2.2 Private sector services

Special advisory services are provided for the farmers in 24 specialised areas by consultants registered in the official roster. Entry and remaining on the roster of special advisors are tied to requirements specified by law (e.g. specialised degree, 5 years practice, evaluation of performance, annual compulsory continuing education and examination etc.). Most of the currently 560 registered consultants work as self-employed entrepreneurs but their services supported from the public sources.

Besides this the input-output companies also practice advisory activity. The do it for their partners integrated by them. These companies usually give not only advice but machinery, seeds and other services also. The problem is that they usually are in monopolist position against the farmers. So, the public advisory services are very important to balance that and to give advice to choose the best input-output advisers also.

2.2.3 Demand side issues

The aim is to increase the number of farmers making use of the special advisory services by 35,000 between 2007and 2013. The target is set in the National Development Plan and according to several analyses the achievement of target seems to be very realistic.

2.2.4 SWOT analysis

Extension and advisory services

Strengths	**Weaknesses**
- Broad network - Good state (public) control and regulation - Good theoretical background	- Not enough practice oriented - Decrease of state support - Not good coordination between public and private services
2.1.1.2.1 Opportunities	**2.1.1.3 Threats**
- EU measures and supports - Synergy between public and private advisory services - Better organization of public services	- Weakening of institutional network (because of cut of national budget) - Cut of national budget - Monopolist position of input-output companies in their advisory activity

3 Overview and prospects

3.1 Training

The institutional background of vocational training is well-developed in Hungary. However the Hungarian school system overall is far too theoretical and this is certainly true for vocational education, and the **vocational qualification level of individual farmers is low**. Individual farmers mostly lack knowledge about the European Union (market and production regulation, support system, requirements of product quality, animal keeping and environment protection) and professional farm management knowledge, which is partly due to the immatureness of post-school adult education.

3.2 Extension

The system of advisory services is well established in Hungary. The aim is to increase the number of farmers making use of the special advisory services by 35,000 in 2007-13.

Supports can be granted to agricultural producers, producer groups, forest holders and forest farmers for the purpose of covering the utilisation of professional advisory services that are aimed at the improvement of the performance of their farms, as well as the obtainment of proper knowledge on the farm management.

3.3 Linkages between technology transfer agencies

See figure 1.

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5 ANNEX

Training provision and use by the rural population

Approx. % of population that is rural by:	
(a) place of residence	47 %
(b) place of work	25%
Approx. % of all workers in rural areas in:	
(a) agricultural employment	15%
(b) non-agricultural employment	85%
Number of universities and similar institutions with agricultural courses	6
Number of colleges and similar institutions providing agricultural training	6
Number of other training providers:	**140**
(a) publicly funded	85%
(b) privately funded	15%
Approx. % of agricultural personnel with:	
(a) degree or equivalent	4
(b) diploma or equivalent	5
(c) certificate or equivalent	5
(d) full secondary education	52
(e) less than full secondary education	30
(f) little or no formal education	4
Estimated level of demand for further training: (use A=high, B=moderate, C=low)	
Agriculture – arable/cropping production	B
Agriculture – livestock production	B
Business management	A
Other [please specify; add rows as necessary]	None

Advisory and extension services available to agricultural and rural businesses

Public sector organisations by name	Approximate number of advisors or consultants
Regional Advisory Centers	1000
Private sector organisations by name	Approximate number of advisors or consultants
Professional Centers	500
Estimated % of farmers actually *using* advisory services of some sort	10%
Estimated % of NAE rural businesses actually *using* advisory services of some sort	4%
Estimated demand for *new* advisory services - % of all farms and other rural businesses	7%