

Acknowledgement

This report forms part of the deliverables from a project called "CEEC AGRI POLICY" which has been awarded financial support by the European Commission under the 6th Framework Programme.

The project aims to establish a network of experts involved in agricultural policy analysis and rural development in the New Member States, in the Acceding Candidate Countries and in the countries of the Western Balkan. More detailed information on the project can be found at www.agripolicy.net.

DOCUMENT HISTORY

see country reports on www.agripolicy.net for full list of authors

Date	Author	Description
April 2007	John Wibberley ¹	Draft report
April 2007	Martin Turner	Edit final report

¹ Professor John Wibberley, CRPR, Department of Geography, University of Exeter, UK

Content

1. Introduction and background	4
2. Rural technology transfer systems	5
3. Agricultural and rural training	5
4. Agricultural and rural advisory/consultancy services.....	8
5. Role of farmers' groups, including national or regional farmers' organisations.....	9
6. Agricultural and rural skill levels	10
7. Availability and access to training and extension services.....	11

1. Introduction and background

For the first time in history, UN data at the outset of 2007 indicate that some 38% of the world's workforce is now engaged in agriculture whereas some 40% is in service industries. The upheaval in population movement is predicted to continue towards 2050, not only with an ongoing influx of African and Asian migrants into Europe but also with population decline in countries like Bulgaria and Poland (forecast at, respectively, some 35% and 20% drop).

This Report on rural technology transfer presents a brief overview and interpretation of Reports submitted by 15 countries within an ongoing study of CEEC Agri-Policy.² The countries involved are nine of the ten which joined the EU in 2004: Cyprus, Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland, Slovakia and Slovenia; two which acceded into the EU in January 2007 – Bulgaria and Romania; four of those which aspire to join – Bosnia & Herzegovina, Croatia, Serbia and Turkey. Countries are between 30% (Cyprus) and 87% (Slovakia) rural by residence, and between 12% (Estonia) and 76% (Slovakia) rural by workplace. The highest proportion working in agriculture was 75% (Bulgaria), while the highest proportion in non-agricultural employment was 96% (Czech Republic). Data need to be treated as indicatively rather than precisely comparative. What is clear is that all the study countries remain significantly rural and that agricultural employment is still of great importance though generally declining in relation to non-agricultural employment (NAE).

Fig. 1. Rurality and rural employment in selected transition countries.

Country	% Rural by residence	% Rural by workplace	% rural workers in agriculture	% rural workers in NAE
Cyprus	30.4	24.5 of employed	9.5	90.5
Czech Rep.	85	60	4	96
Estonia	32	12	18	82
Latvia	32	12.4	30.6	69.4
Lithuania	33	-	42	58
Hungary	47	25	15	85
Poland	38	40	42	58
Slovakia	87	76	7	93
Slovenia	57	30	5	95
Bulgaria	42	48	75	25
Romania	45.1	-	64.2	35.8
Bosnia & H	56	-	35	65
Croatia	43	25	15-20	80+
Serbia	44 [OECD 55]	-	32	68
Turkey	34	-	67.5	32.5

² Full information on the CEEC AGRI-POLICY project is on the project website at: www.agripolicy.net - financial support of the European Commission is acknowledged with thanks.

2. Rural technology transfer systems

While some countries have specific Ministries dealing with Training, Extension and Advisory Services, some have this responsibility shared between Ministries of Agriculture and Ministries of Education, with variable degrees of required inter-linkage; sometimes departments of Employment or of Trade are involved. Many of the study countries have been assisted by a variety of EU and other international aid projects in restructuring their provision; some, such as the Czech Republic, dissolved their previous Farm Advisory Service during the 1990s (and they have also adopted a national Action Plan for Organic Farming to try to secure long-term EU support). Others, such as Bosnia-Herzegovina, had no established tradition of organised knowledge transfer before the 1990s, though it has noted an increased interest in learning within the rural population since then. Latvia has established the LRAC (Latvian Rural Advisory & Education Centre) which is 99% State-owned with a 1% contribution from the Farmers' Federation. In Romania, the National Agricultural Consultancy Agency (NACA) was established in 1998 and covers training and extension advice via its 41 County offices and 546 Local offices.

Many farmers and their associations are interested in how to access EU funds for their own farms. Many former communist States have ample institutions, though some now defunct; some of those still operative are reported to be of rather poor quality, with limited material resources and there is often a low rate of enterprise development arising from limited research on entrepreneurship and a low degree of networking. However, a variety of methods are used in most countries to deliver 'technology transfer', including group visits to farms.

3. Agricultural and rural training

Farmers often lack knowledge of the EU and of market-orientation, even in countries like Hungary which was less affected by extreme communist policies than some others, but where much education has been 'highly theoretical'. Many older farmers and other rural workers lack formal education and many have not passed the primary stage, though this is rising. Many farmers also lack understanding of the value of advice, and the money to pay for it. However, in Croatia there are some 148 student co-operatives of which 68% are agricultural with an important role in training, but Croatian young people are not very interested in entering agriculture.

For most of the study countries, the development of private training is embryonic rather than being an actively incorporated part of national provision. However, Latvia has many providers. In Bulgaria, 90% is public-funded. In some cases, such as Poland, the Scientific Research Institutes are active to some extent in specific advisory and training provision.

In Turkey, despite its 24 universities offering agricultural courses, there is a huge training and extension challenge in that two-thirds of the rural population are in agriculture and live in some 35,000 villages and 40,000 sub-villages, and only 3.5% of rural households can access the internet (Fig.2). Agricultural education is perceived as key to their development.

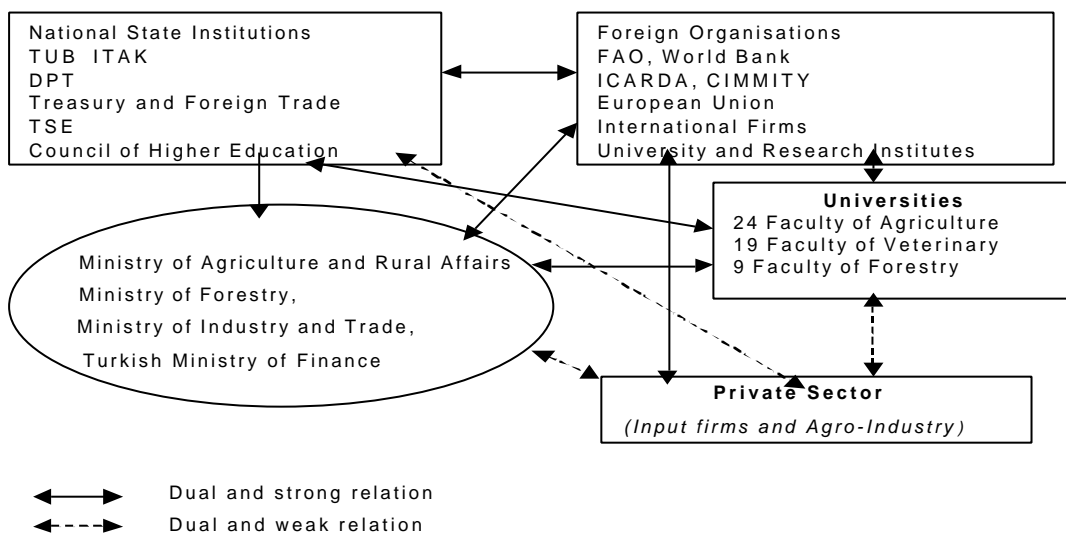
Estonia has good coverage for agricultural training, education, extension and research (Fig.3) with high quality staff, and is using vocational competitions between agricultural students and young farmers. Estonia is also ahead of the EU average in internet access (Fig.4).

International projects and their associated training inputs have been critical, especially for Serbia and for Bosnia & Herzegovina – where training received is correlated with improving productivity on dairy farms. *Agromreza* (AGRONET) in Serbia is helping to improve standards and access to training. The EU’s ‘Bologna declaration’ on improving university education using mentoring is reported to be beginning to have some impact.

In Cyprus, levy funds are used to finance the Human Resources Development Authority which subsidises private training. In the Czech Republic, some 60% of agricultural training provision is private. This sector seems set to grow in all countries of this study.

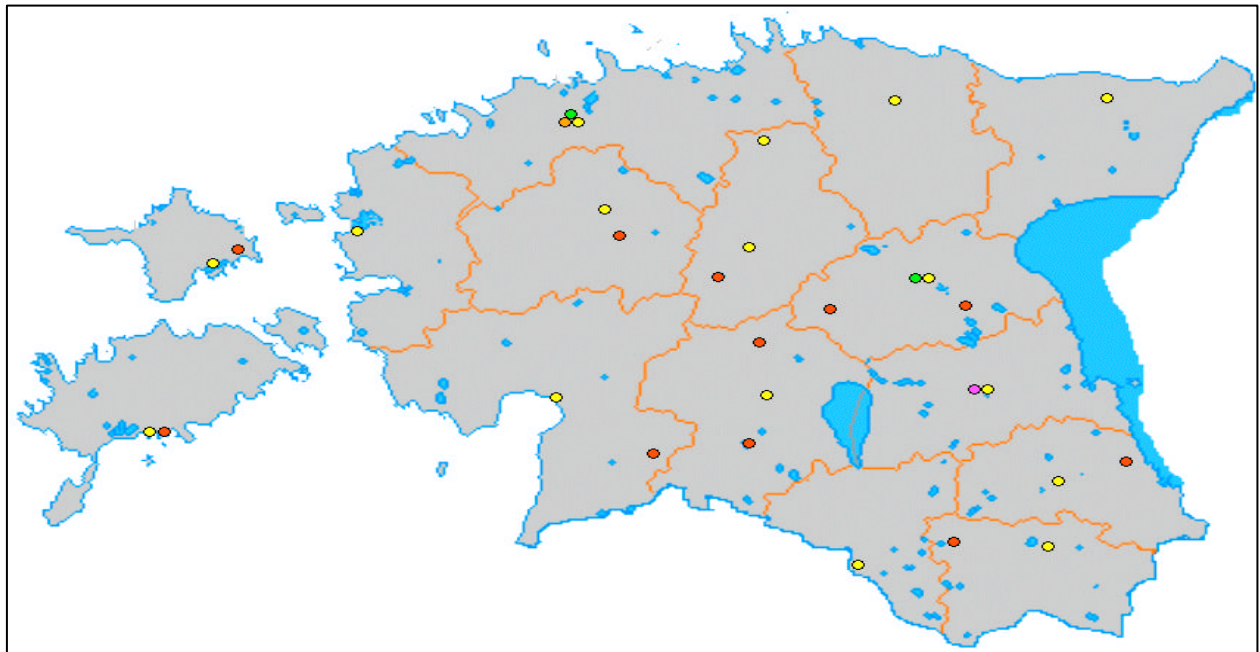
Fig.2. Agricultural education and research in Turkey

Main actors effective on agricultural researches in Turkey



Source: Yayz, 2006

Fig. 3. Estonia: research and development, advisory and educational centres



●	Research institution		
●	Vocational school		
●	Advisory centre		
●	Estonian University of Life Sciences		
●	Agricultural Research Centre		

Source: Estonian Rural Development Plan 2007-2013

Fig.4. Internet infrastructure – the area covered by DSL, 2004 (%)

	Rural area	Suburban areas	Urban area	Average
Estonia	70*	92*	96*	90
Germany	55	97	99	91
Italy	40	84	98	85
Finland	80	98	99	92
Sweden	87	97	98	96
EU-15	62	93	95	88

Source: DG-INFSO * estimate

4. Agricultural and rural advisory/consultancy services

Public/private collaboration in advisory provision is encouraged in Turkey (Fig.2). Cyprus separates its extension advice into production matters dealt with by its Ministry of Agriculture and marketing issues dealt with by its Ministry of Commerce. Input is often offered alongside international aid projects in Serbia. National provision is frequently under-resourced, as noted in Bosnia & Herzegovina.

Croatia established its Agricultural Extension Institute in 1997 and also has in parallel some advice given via its Co-operative Union. Many countries are undergoing restructuring. For instance, Bulgaria has its new National Agricultural Advisory Service only since 1999 and a 'JOBS Project' with new Business Centres to help plug the gap in management advice sought by farmers and rural entrepreneurs. Though Slovenia has had agricultural advisory services since the 19th Century which were revised in 1972, these were restructured in 1999. Both Slovakia and the Czech Republic maintain registers of approved agricultural advisers; in the case of Slovakia, over 350 are listed. Poland maintains some 4500 staff giving free advice within its National Agricultural Extension Service. Hungary is replacing its former 'Village Clerk' network with one of 'Agricultural Consultants'. The structure of the national advisory system is shown in Fig.5.

Whereas Latvia – with growing demand for seminars but reducing demand for free advice (Figs.6 & 7) - has a unified Latvian Rural Advisory & Education Centre (LRAC – 99% State funded), Lithuania lacks a unified agricultural and rural advisory service. Estonia has a system attuned to environmentally friendly management advice.

Cyprus reported the use of Group visits abroad, demonstration plots/farms, Agricultural Shows/Trade Fairs, Ministry of Agriculture leaflets and other publications, and the periodical *Agrotis* ('The Farmer'). Some of these methods for technology transfer apply elsewhere in other study countries.

Figure 5. Structure of the current Hungarian advisory system

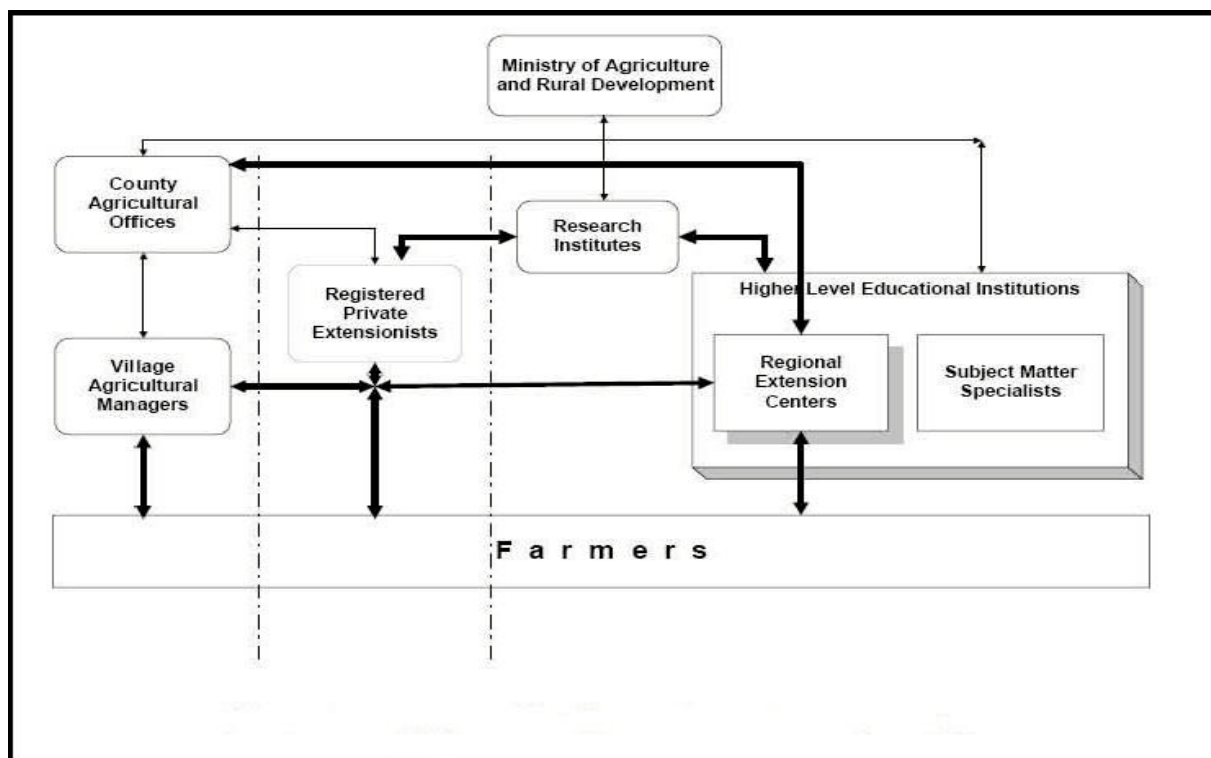
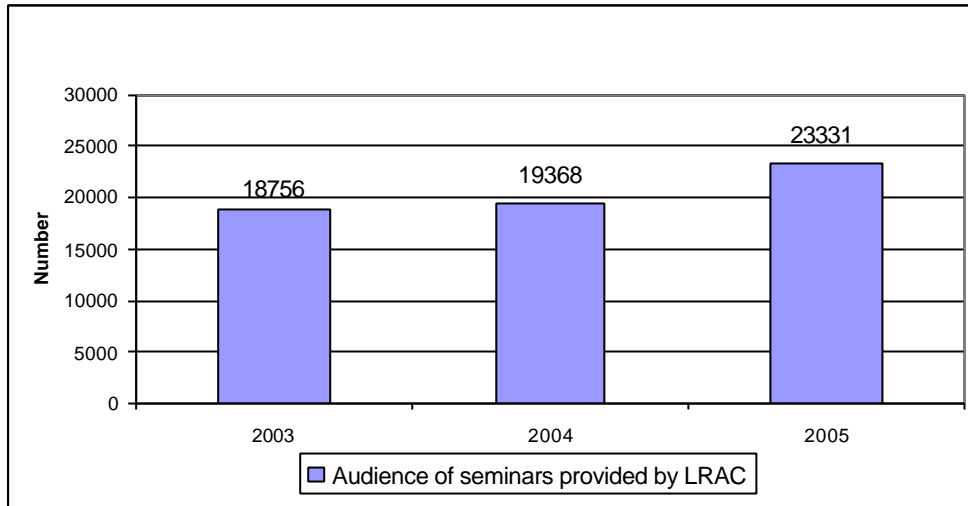
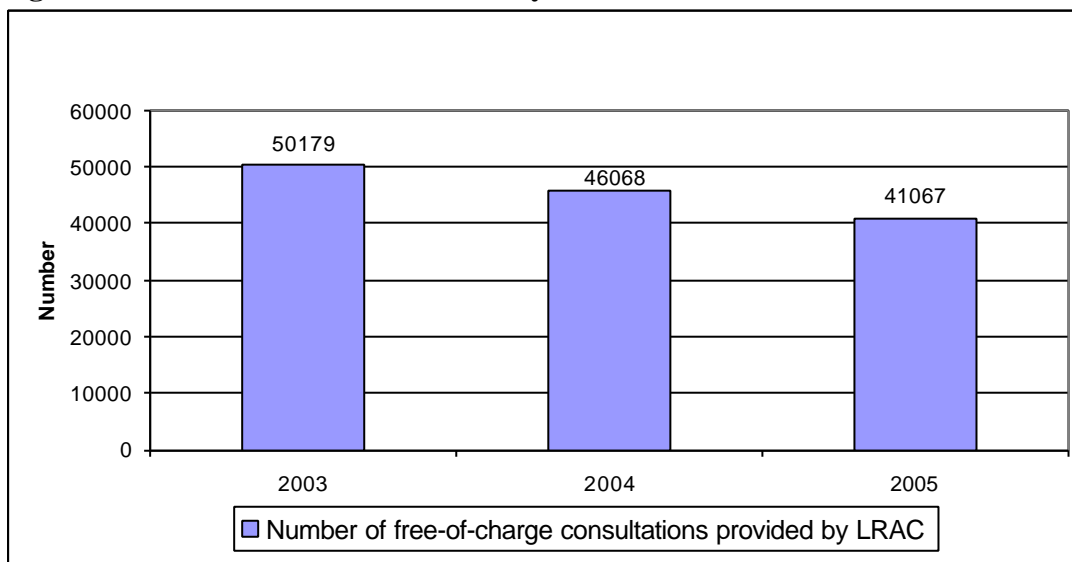


Fig 6. Latvia: demand for Latvian rural advisory and education centre seminars



Source: *Agriculture and rural area of Latvia*; Ministry of Agriculture of the Republic of Latvia, 2006

Fig. 7. Latvia: demand for free advisory consultations of LRAC



Source: *Agriculture and rural area of Latvia*; Ministry of Agriculture of the Republic of Latvia, 2006

5. Role of farmers' groups, including national or regional farmers' organisations

In Croatia, there is no single national organisation for farmers but many specialist ones, and two co-operative unions. Cyprus has four national farmers' organisations and has developed some 24 groups for transfer of technology since joining the EU in 2004.

Slovakia perceives farmers' organisations to be very important; most are voluntary and not-for-profit. In the Czech Republic, sector co-operatives provide vital extension support. In Estonia, much advice is NGO and project-linked, and some comes via environmental associations.

However, in Latvia, most farmers' organisations are simply selling groups. Specialist Associations are important in Lithuania (e.g. The Mushroom Growers' & Processors' Association) but regional groups are hindered by lack of good leadership and management in a context of "people's reciprocal distrust".

In Hungary, there is a growing National Rural Network but most farmers' organisations are more political than extension oriented. In Romania, the NACA (National Agricultural Consultancy Agency) encourages the formation of Producers' Associations. However, in Bulgaria there are perceived to be too many farmers' associations with some replication, though there is a useful Agronomist periodical magazine for farmers. Poland has many Agricultural Chambers and Circles such as that of Housewives for mutual practical learning; it also operates an extensive Rural Youth Union. Bosnia & Herzegovina reports that it has only had farmers' groups since 1996 – previously there were only co-operatives. Serbia actively encourages formation of Agricultural Business Clubs. In Turkey, the Union Of Turkish Chambers of Agriculture has existed since 1963 and has some 700 local Chambers and 4 million members! Even the Turkish Hazelnut Growers' Union claims over 230,000 members!

6. Agricultural and rural skill levels

These are generally reported as being low, especially in managerial and entrepreneurial skills and information technology/computing. While Romania records high demand for further training on crops and livestock, most of the countries report greater interest in management subjects.

While the Lisbon Strategy aims for 12.5% of agricultural workers in CPD/LLL by 2012, the EU average is 9.4% and that of the Czech Republic (the only country which declares its present position in these Reports) is 2.5%. Slovakia draws attention to the lack of training in the new skills needed for diversification of farming incomes.

Poland notes a lack of rural motivation to learn, while Slovenia reports poor co-ordination between work needs and educational provision, a factor which is noted by most countries. Slovenia gives as its greatest problem the declining number of students wishing to study agriculture at all.

In Romania, collaboration with foreign training providers is seen as very important but it seems that skills training helps young people to get jobs abroad while growing numbers of those left behind have less education and fewer skills than their parents. In Serbia, those qualified in urban areas as teachers, doctors and engineers are taking agricultural and other rural jobs.

In Turkey, most farmers still prefer – as in other countries studied – to learn from other farmers who are doing better than themselves with similar resources. This could be built upon within a strategy involving *FARMS* (Farm Asset Resource Management Study) Groups; see Appendix.

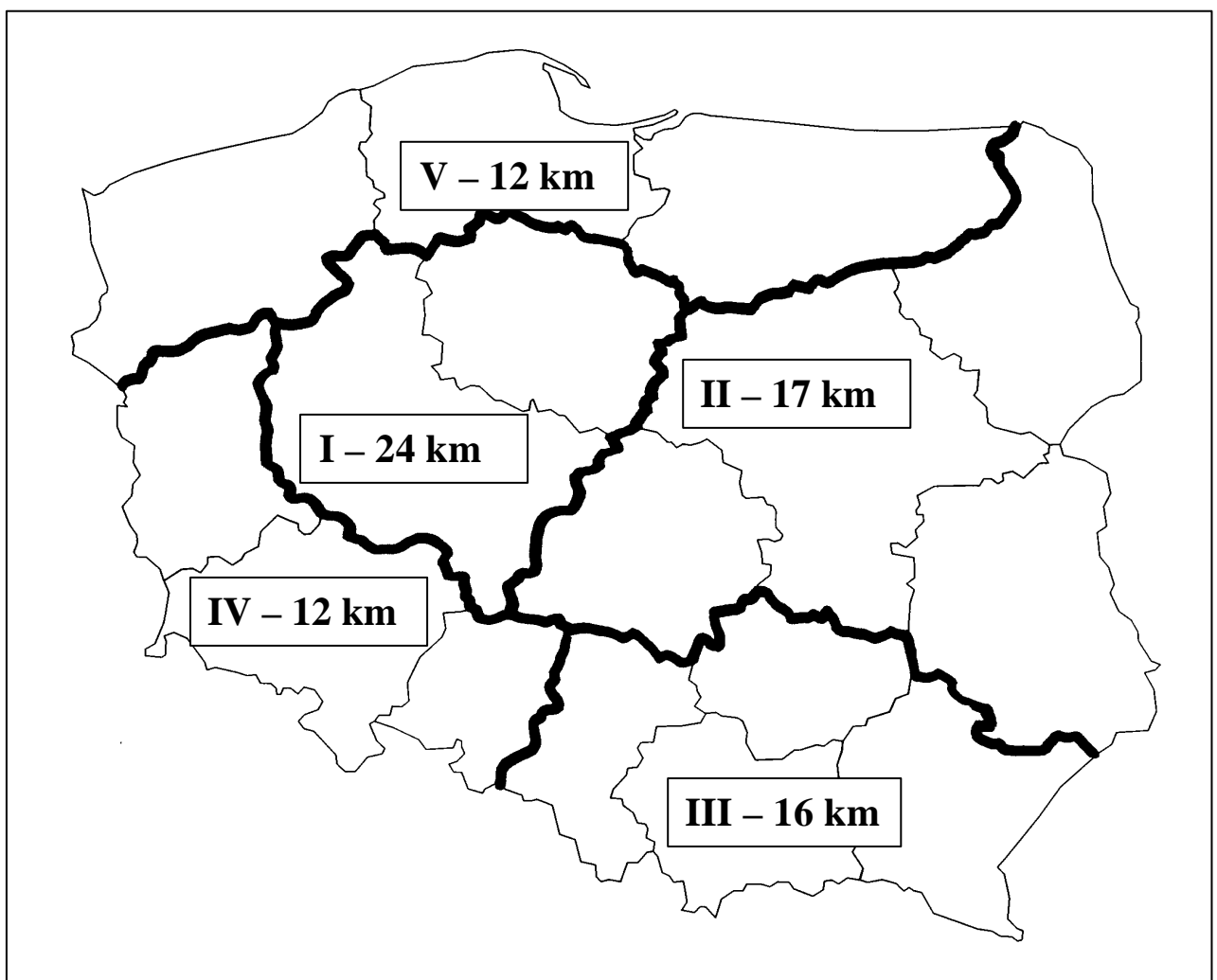
7. Availability and access to training and extension services

Regional disparities in provision are reported in several of the study countries, notably Bulgaria, Croatia, Romania and Slovakia. Lithuania reports that 'geographical and financial access is patchy' and 'few businesses support in-service training for their staff.'

Some have to travel great distances to reach official centres in the large nation of Poland (Fig.8) but there is increasing use of local schools as venues for training to ease access. In Hungary, there is growing use of non-State provision via churches and NGOs.

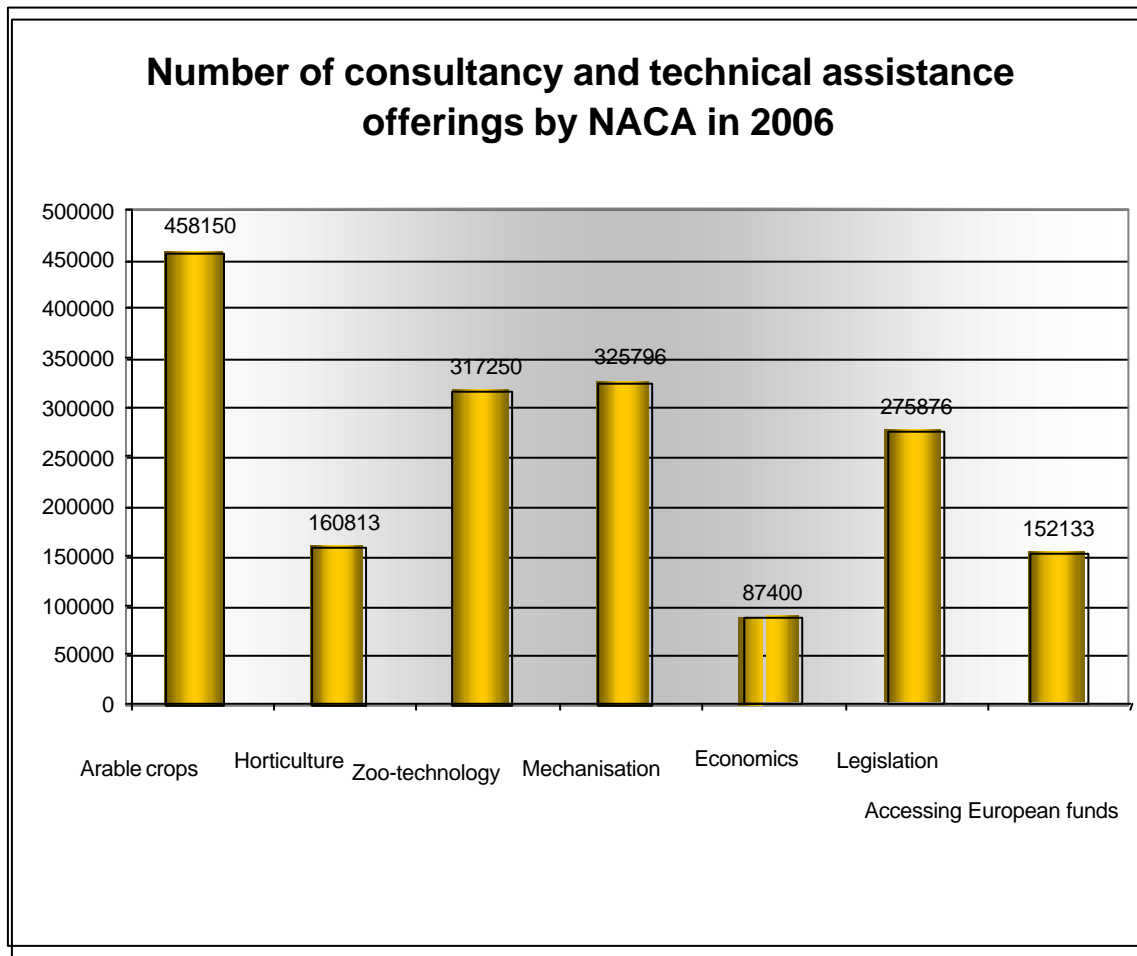
In Latvia and in Estonia – the least densely populated country – there is good coverage of provision (Fig.3).

Fig.8. POLAND: Average distance from surveyed villages to Rural Advisory Service offices by Region.



Source: Alina Sikorska, *Doradztwo rolnicze – opinie mieszkańców wsi o działalności ODR w Zagadnieniu Doradztwa Rolniczego nr1*, 2006 s.90.

Fig. 9. ROMANIA : Extension topics by Advisors of NACA (The National Agricultural Consultancy Agency). *Source: 2006 Report of the National Agricultural Consultancy Agency.*



Discussion

The term ‘technology transfer’ implies that other factors such as values, entrepreneurship, public benefit and sustainability are either omitted or marginalised. Of course, the responsible transfer of technology should take account of all these but nevertheless, the danger of their subordination needs noting. The term ‘extension’ is regarded by many as somewhat redundant and thus also often replaced by the conceptually much narrower term ‘technology transfer’. ‘Extension’ properly implies ‘information, knowledge, wisdom and skills flow’. This can be as much lateral and bottom-up as it is top-down; in fact, the mutuality of peer learning whereby the best farmers influence the rest is increasingly recognised not only as preferred by farmers but as more appropriate and sustainable than more hierarchical top-down transfer models pursued in the past. The study countries have all to a greater or lesser extent been much affected in terms of technology transfer models by radical recent global changes, especially those moving from centrally-planned economies with little scope for originality, enterprise and initiative.

In farming terms, ‘subsistence’ and ‘semi-subsistence’ tend to be used almost exclusively pejoratively by many policy-makers and yet a most truly sustainable policy might involve the retention of as many farmers in place as want to stay, consistent with reasonable efforts to maintain a viable livelihood and care for the countryside. It was Antoine Augustin Parmentier who said, ‘I have always thought that the art of subsistence should be the most serious

occupation of man...[humans]'. In the light of global climate change and depletion of natural resources, this seems to be increasingly appropriate to the formulation of current policies. Indeed, the Slovakia Report recognises the need for technology transfer to 'suit the socio-economic and cultural context' and to 'consider development and sustainability issues ... climate change'.

Smaller farmers should be encouraged by appropriate technology transfer, suitable training and advice to collaborate for mutual benefit, though on terms and to an extent that they decide; imposed co-operatives have a bad history. In all this, it is important neither to perpetuate nor to exacerbate the tendency to create dependence on 'the nanny State' but rather for policy-makers to seek to create a framework within which enterprise and hard work can thrive, including government signals that they recognise and value their national agriculture in the context of integrated rural development. Governments can incentive farmers to change for mutual benefit. There are often social tensions in rural areas owing to the low rate of paid employment and the low rate of income from farming, though most countries recognise that the 'social buffer' importance of farming exceeds its financial contribution to GDP or to GVA.

References

These are listed under each of the Country Reports and typically comprise largely statistical and national report data sources, probably reflecting the dearth of relevant published research on the issue of technology transfer.

Some of the useful diagrams contained in the country reports are presented here, and the SWOT analyses of both training and extension (presented in the Country Reports) summarised aspects of each country's position quite effectively.

APPENDIX: THE CONCEPT OF FARMS GROUPS – ‘FARM ASSET RESOURCE MANAGEMENT STUDY’ GROUPS

The concept of these groups – catalysed in many countries by the author during the past 30 years – is commended for consideration within future extension and training provision in the 15 CEEC Study Countries, whereby farmers and other rural practitioners may adopt interactive mutual learning.

Why this name?

Because all farmers have faced the challenge of business survival in recent years and need to assess ALL their farms’ **assets** as potential **resources** for improved **management** in order to gain a sustainable livelihood. All over the world, farmers prefer to learn from other farmers (practitioners of any kind prefer to learn from other practitioners). Therefore, **study** together in practically-focused **groups** with farmer-chosen agenda provides suitable opportunity for this and for trust to grow without which any sort of collaborative business cooperation cannot work. Such future collaboration may be in the interests of group members BUT *they* must decide if this is to be so *after* they have come to know and trust each other - which happens most naturally during learning together.

What makes such a group work?

It needs to be:-

- a) outsider ‘sparked’ only; NEVER imposed NOR coerced into existence
- b) farmer owned and locally led, ideally with spouses welcome too
- c) self-running (autonomous) - with someone to co-ordinate meetings
- d) small enough to be intimate but large enough to give creative mix (say 12-25)
- e) ideally on-farm/field meetings or at least practical discussions
- f) include taking meal together during the meeting
- g) promote the fun element of meeting together
- h) promote ‘belonging’ but welcome newcomers
- i) encourage overlarge groups to split and start a new one
- j) foster an outward-looking group culture
- k) encourage problem-sharing
- l) stimulate solution-seeking
- m) become more resource and market conscious and astute
- n) develop their own identity/name
- o) tend to gel (if going to do) after around 20 meetings
- p) ideally, area per group should cover a maximum travel time of some 20-30 minutes
- q) meeting frequency is ideally around ten times per year, avoiding busiest months but could be more often in a close village context.

Developing *FARMS* (Farm Asset Resource Management Study) Groups

Through *FARMS* Groups, apart from enjoyment and encouragement, hopefully members might further together ‘**learn to earn**’. It takes some 20 meetings for any group to ‘gel’ - to gain its own identity and a life of its own. Of course, some groups may never reach this stage. Successful Groups need not last for ever. Any healthy group should regularly (perhaps annually) **review** :-

- a) whether it should continue to exist; it is always better to stop while a thing is still going well!
- b) whether it welcomes new members with the fresh insights they may bring
- c) whether it has become too large and, if so, to consider ‘budding’ a new group like a yeast.
- d) whether there are **new potential ways of benefiting from collective group action** such as making systematic enterprise or field comparisons (operations, physical and financial results); forming Farmer-Controlled Businesses (FCBs) to combat big business power and be ‘local’; involvement in Farmers’ Markets to strengthen communities, cut out middlemen, save energy; adding value to ex-farm raw products, with local branding and direct farm sales; and many others.