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# Agro-Environmental Policy: the European Approach and Actions in Romania

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## Introduction

The European Union has made considerable progress with sustainable development since the issue was first raised in depth in the Brundtland Report. The 'Polluter Pays Principle' (PPP), was brought into a central position in EU policy by the Amsterdam Treaty of 1997 that required the integration of environmental considerations in all policy areas. There has been a shift from 'material intensive growth' - requiring progressive higher resource inputs - to 'relative delinking' and some 'absolute delinking' (e.g. through reduced sulphur dioxide emissions), but there still remains the stiff challenge of 'dematerialisation': reducing the raw material input by a factor of 10 while still achieving further economic growth. This would harmonise with the concept of 'fair shares in the environmental space' and address the principle of equity and social justice included in the Rio de Janeiro Conference's 'Agenda 21'. However, the Commission over-estimated the willingness of member states to follow 'paradigmatic change': so the EU 'Agenda 2000' - relating to cohesion funding, the Common Agricultural Policy (CAP) and the enlargement - is not yet seen explicitly in the framework of sustainable development. Yet water, biodiversity and land use policies are the major areas in which the agro-environmental (a-e) policies of East Central Europe (ECE) are concerned with, while air quality is less important since agriculture is not considered a primary source of air pollution. Hence there is a focus on such issues as agro-chemical usage; nutrient balances; water use and quality; land use and quality; biodiversity and wildlife habitat protection; also landscape quality, air quality and environmentally-friendly farming practices adapted to local circumstances. In the current phase of rural development regulation (RDR), following the agreement of the Agenda 2000 reforms in 1999, a-e measures have become a component of the new CAP second pillar/rural policy strand for 2000-6 geared to sustainable development for rural areas and provision of environmental services for society as a whole. RDR integrates a-e and rural development policy (including structural measures, living conditions, water management and environmental conservation) although full integration is constrained because of the origin of a-e policy as a farm support scheme tied to farm practice, although some schemes - e.g. for nature reserves and green tourism - certainly contribute to rural development.

## Outlining the problem

Agriculture can have many negative effects including pollution, erosion, acidification, eutrophication and drying. It can also contribute to greenhouse gases and degeneration of natural habitats. Threats from point sources include phosphate inputs from untreated or inadequately-treated urban waste water, but agriculture also contributes to pollution through the diffuse run-off of nutrients from the agricultural land; while non-point sources include sediment (through stream bank erosion), phosphorous and nitrogen (from crop production, irrigation return flows and animal waste with high bacteria and nutrient levels) and the resulting eutrophication affects fish production. There are dangers of biodiversity loss through disturbance of sensitive areas and resource depletion e.g. the enlargement of livestock herds (sometimes induced by EU headage payments to stock farmers) may increase grazing pressure, perhaps with irreversible results.

But the need for conservation policies does not derive solely from nitrogen and its impact on water supplies and habitats, even though agriculture has often been the single biggest source of pollution for European waters (contributing half the nitrate and phosphate pollution in the Danube). Nor does it derive only from the communist experience, despite the highly-improper farm management on large socialist holdings. There is much soil degradation along with wind and water erosion, arising from the emergence of more intensive, specialised and mechanised forms of agriculture with further risks in the future from intensification encouraged by the traditional production-driven CAP. Desertification can be exacerbated by agriculture and about a tenth of Romania was affected in 2002 including 2,2 mln. ha in East Muntenia, South Moldavia and Dobrogea. Likewise the degradation in Vrancea linked with landslides and relief energy. With extended private control of land, and conversion on the edge of cities lead to the loss of rural landscapes - generally supported because development brings increased budget revenue for municipalities (and is highly profitable to farmers who own most of the land) while non-farm rural people rarely see conversion as a threat to environment - it rather implies more jobs and better services! Hence the need for a greater environmental focus: the economic transformation creates opportunities for conversion to sustainable development before major new investments are put in place.

Even recent extension across ECE, with reduction of agro-chemical inputs, may still degrade the environment unless it is complemented by a better management. The ecological consequences of privatisation in Romania have been considered in terms of the cutting of scrub in the Sub Carpathians and the consequent loss of its protective function (Muică & Zăvoianu, 1996) and more seriously in the alpine zone of the Retezat with the removal of the Carpathian pine so as to extend the grazing areas: hence the legal protection that is now afforded to prevent further formerly-afforested areas from degenerating into pasture (Muică & Popova, 1996). Low input agriculture often too little emphasizes on the replacement of organic matter in soils (leading to poor soil structure and decrease in overall fertility and soil retention capacity) and proper manure management. Erosion arises commonly from overgrazing but it also occurs in association with nutrient leaching on soil left bare after harvest. Narrow (restricted) crop rotation as well as monocultures (involving maize, potatoes or wheat) may reduce fertility and build up pests and diseases. Good inherited protected area systems may be threatened by privatisation that requires consultation with stakeholder groups and compensation - or other incentive systems - to secure cooperation. Biodiversity loss arises not only from production pressure on large farms but from the breakdown of traditional management practices e.g. for dry and wet grasslands. Privatisation has created a new agrarian class that cannot adequately support itself. There are too many ignorant and inexperienced farmers who cannot follow a good agricultural practice. Many heirs are not engaged in agriculture and have no sector-specific skills. Few farmers have manure pits and the improper management of animal waste can result in groundwater pollution. Rural water supplies are often inadequate as waste-water management is: sewage systems are rare and hence there is a big gap between piped water and sewage provision. The situation becomes worse by small rural food processing units concerned with dairying, meat processing and other activities. Thus, while the low input/low intensity agriculture in the region provides an opportunity for environmental sustainability, the lack of appropriate policies and incentives to support extensive farming practices enlargement may encourage both re-intensification of fertile land and further abandonment in marginal and peripheral areas with negative consequences for both the rural environment and the rural population.

### **The EU Approach to Agro-Environmental Issues**

Sustainable agriculture implies that productivity does not decline over time, while the destruction of natural resource capital is avoided. It is a process in which output - food, raw materials, ornamental plants and rural amenities - derives from farming practices that are economically efficient, environmentally-friendly and socially acceptable. The agricultural sector must respond the change in the consumer's request and the challenges of the technological development; but farmers also have to react to the people's need for biodiversity and landscape conservation and other rural amenities. It is necessary to reduce the harmful environmental effects of agricultural activities and enhance the beneficial ones. In other words, economic development

should be guided by ecological and social constraints: hence the three complementary and overlapping dimensions of the environment, economy and society that require a balance between protected areas (e.g. Natura 2000) and rural development and diversification. As 'win-win' strategies are regarded that are good for both environment and the economy, organic farming offers several options according to its various practices including low non-organic fertiliser applications. But the link between intensive farming and poorer biodiversity (e.g. through erosion) suggests that more extensive systems may be desirable, including the abandonment of farming in sensitive areas in order to safeguard landscape and biodiversity through extended national park areas (with mowing and other actions in support of biodiversity). Such steps are often opposed by Europe through concerns over community support and retention of grassland biodiversity.

*EU Directives* apply considerable pressure. In the case of nitrogen - linked with agriculturally-induced water pollution - there has been a powerful 'green' influence from Scandinavia spreading southwards while green pioneers of the EU as a whole are now influencing ECE generally as environmental NGOs instigate pilot manure projects. However the 'Nitrate Directive' is also a reflection of the Mediterranean (and Black Sea) pollution syndromes giving awareness of an environmental gap that could be exploited for a competitive advantage. Nitrate pollution could be minimised by avoiding winter ploughing; using broader rotations; seeking better drainage; and moderating nitrate applications to 150-180kg/ha (with larger superfluous quantities). Tanks for liquid manure are now an obligation and regulations are in force for the storage and application of fertilisers (permissible doses). Meanwhile the EU Water Framework Directive - protecting water resources using a river basin approach - is ambitious and complicated, making members identify the ecologically-based river basin districts; to integrate all aspects of water management; and seek 'good' water quality status by 2015 with the active participation of all interested parties (recognising the failure of the centralised approach of public policies during previous decades). The formula provides a great opportunity to the ecological foundation for major decisions. National legislation has also to comply with 'Natura 2000' and the Habitats & Birds Directives. But big ideas money supported have to 'trickle down' to local communities by contact with local circumstances: creating clear frameworks taking into account local problems and opportunities, consulting locally and exploiting endogenous resources (perhaps by integrating different policy instruments).

Institutionally a common approach is needed so as to evaluate EU policies. Although the EU is seen as the saviour from poverty Romania knows little of the way the union works and poor information flows are compounded by intense scepticism over material from government sources. Social capital (reinforced under communism as a defensive mechanism to survive the pressures of the state) should be transformed into more formal structures with the confidence to compete for resources with formerly internalised networks developing an extra-local dimension. The absence of young people from the rural areas (in the towns or abroad) is unfortunate but there could be opportunities for a greater educational effort through the schools (e.g. through World Bank computers and capacity building); the rural banks (like Banca Agricolă); the work of the National Agency for Agricultural Consultations and SAPARD and programmes for the Euroregions and cross-border areas in general; while the church is well placed with precedents for action in building trust for participation. Perhaps these opportunities could be harnessed by environmental NGOs for the urban-based environmental movement has done much for environmental education and project management but has limited activity among farmers. NGOs often help farmers with grant applications, although evidence from land use planning and landscape groups in the Czech Republic and Poland (and water boards in Bulgaria) suggests they are not always considered transparent and effective. Hence the EU needs to give more emphasis to institutions at the national and regional levels. The importance of 'capacity' is becoming better understood as a key to overcoming civil society weakness and achieving good governance which, in turn, depends on institutions and trust. The latter arises from experience and interactions among different actors over a period of time and while it can take generations to build social capital, the process can certainly be helped by the realisation that government will not solve all the problems and communities must therefore cooperate over rural projects. Indeed SAPARD was conceived as a means of financing a-e demonstration projects - driven through the Brussels legislative 'factory' by the 'greens' of Germany and Scandinavia. But the implementation is often frustrated by the lack of capacity, given the scale of the administrative challenge as well as a lack of technical and political skills including the vital need to work with stakeholders.

*Financial Support for Agro-Environmental Programmes* is a problem when political and business interests have a strong influence in allocating money. Gyulai (1998, p.53) predicted that “while accession will contribute to solving technical problems of the environment as a whole, the marginalisation of nature conservation can be predicted”. For the EU ‘culture’ tends to favour absorbing funds through large-scale intervention that could be environmentally damaging and it is unfortunate that in spite of the Amsterdam Treaty the regional plans are being prepared separately from environmental plans. The participation of environmental NGOs is relatively ineffective and EU cohesion programmes tend to be run by élite consultants without proper local evaluation. Furthermore, while SAPARD was conceived as a ‘hearts and minds’ operation distributing money to benefit as many people as possible in sympathy with the Western ‘green agenda’, this is not necessarily a high priority in ECE where ‘capacity’ needs building up from pilot projects. Restitution has not yet adequately conveyed a sense of ownership responsibilities e.g. in what extensive livestock production and management of semi-natural grasslands are concerned. Regarding the ‘Habitats Directive’ that seeks to safeguard biodiversity, can the desire for a good living be reconciled with biodiversity protection that assures ‘space for nature’? Arguably rural prosperity has to be based on rural amenities with nature as a unique asset. Reduced CAP direct payments mean priority for rural development based on non-agricultural business and the scope for diversification may derive from a positive identity emphasizing on nature and therefore improving the ‘story’ for tourists and new settlers. Thus a community business model may exploit opportunities for prosperous living standards linked with ‘hosting’ a Natura 2000 site: sustainable rural development then takes off from a participation perspective mobilising strong local leadership through an overall stakeholder-based organisation. Farmers may be motivated to take action for the benefit of their local environment if it is somehow internalised into the local development context and economic framework whereby mutual understanding between the parties increases, a joint language is developed and the respective positions and motivations become both known and accepted.

Problems also arise over a-e policy because of a shortage of legal expertise; lack of experience and trained personnel (civil service had different priorities under communism) evident through ministerial inexperience and divided responsibilities on legal harmonisation e.g. separate agriculture and environment ministries with the latter relatively young and politically weak. There can also be political turbulence through frequent changes in government and political direction and where appropriate legislation exists there may be problems over implementation due to weak municipal government with little involvement by the public on the whole, including stakeholder groups and NGOs (few of which focus their activities - educational, lobbying or practical - on rural environmental protection issues although they can potentially assist farmers in environmental matters). Family farms are not much involved in sustainability issues since the system is essentially one of subsistence and is not viable farming. Moreover lack of finance encourages short-terms. Information and education are important for non-point sources of pollution when farmers cannot believe there is a water quality problem (or one caused by agriculture - including *their* farms). Since it is often difficult for farmers to understand how their daily activities contribute to pollution, they need a direct interest in solving the water quality problem, with the pollution sources understood. However, farmers employed in off-farm activities may have a different perspective through being integrated into non-farm communication networks; while larger-scale farmers may be more willing to adapt - given better information and resources, greater ability to deal with risk (including flexibility in decision making) and higher community status. On the other hand, villages have traditionally managed resources such as pasture and irrigation and serve as their basic unit for local development and participation. Meanwhile, private companies engage with environmental issues since sustainable farming will bring higher profits in the long run: farm income is positively related to environmental awareness, given the ability to support some costs implied by adopting environmentally friendly practices.

### **The Romanian Strategy**

Romania has of course endorsed the European and global agenda for environmental protection and sustainable development, including the principles of sustainable development including PPP (‘*principiul poluatorul plătește*’) that requires a régime for monitoring and evaluation. But there has yet not been any powerful emphasis on a-e issues, perhaps because, on the whole,

the Romanian agriculture is fairly sustainable in ecological terms and increased efficiency is the greater challenge. More attention has been given to the sustainability of communities through focusing on human and social capital involving employment and consumption, health and education, science and technology and civil society (involving NGOs in governance structures). Environmental concerns tend to surface through vulnerability to floods, droughts and landslides and consequently the need for appropriate conservation measures in agriculture and silviculture. For example in the Sub Carpathians excessive grazing arrests and even regresses the regeneration of the plant cover, as indicated through research by Calota (n.d.) on the impact of privatisation in the Istrița hills of Buzău County. But some events are impossible to control and therefore “represent a permanent threat to sustainable development, to say nothing of the huge efforts made by the local authorities and population to prevent or reduce their effects” (Bălțeanu et al., 2004, p.7). There is a high risk of flooding in corridors and depressions in late winter and spring e.g. the rapid melting of the snow cover in the eastern part of the Brașov Depression makes it prone to the onset of flood hazard events, with serious consequences for agriculture. The tornado that hit Făcăeni near Țândărei (Ialomița) – caused flood damage including landslides - raised questions about the management of disasters, the need for improved forecasting and post-event intervention, and also the need for a culture of risk-awareness.

Sustainability in Romanian agriculture could certainly be improved. Many new farmers ignore elementary environmental protection norms with insufficient attention to optimum fertiliser dressings (impacting negatively on biodiversity - though in recent years not enough fertiliser has been applied) and *ad hoc* woodland clearance. There was much soil impoverishment after the intensive farming of the communist period but damaging actions since 1989 during the turbulent transition years of the early 1990s saw about 0,77 mln. ha of woodland degraded and turned to pasture. Orchards decreased substantially and vineyards only expanded in the context of hybrid vines (while the area of noble vineyards declined) 3,9 mln. ha of farmland became liable to drought in the 1990s through the breakdown of irrigation); 0,90 mln. ha to flood through lack of regularisation); with other problems involving reduced humus (7,11 mln. ha), erosion (4,10 mln. ha), acidification (2,3), chemical pollution (0,90), salinisation (0,60), mobile sand (0,38) and invasion by industrial and household waste (0,02); with a further hazard arising from 1.130 t of pesticide residues in storehouses of county sanitary departments or state farms (arising from the 1970-1985 period when heavy applications of very noxious substances were made). On the whole subsistence farmers make low use of fertilizers, pesticides and heavy machinery – but they may use improper crop rotations and accelerate nutrient depletion: with an interest in short-term profit with little concern for environment – hence there could be danger if their scale of operation increases. Meanwhile, there is more interest in environmental matters on large farms because sustainability will boost profits in the longer term.

*Organisations.* The NGO ‘Tineretul Ecologist Român’ (TER) has been operating since 1994 in the domains of public awareness raising, environmental education and training for ecological agriculture and agro-tourism; and has coordinated a national working group on agriculture and biodiversity. A national a-e strategy - part of Romanian NPARD funded by SAPARD (Government of Romania 1999) - now includes two pilot areas in Gorj (Padeș) and Suceava involving a total of about 50.000 ha. Other major issues include environment baseline data; management agreement design; administrative capacity; training officials; and monitoring. Other organisations include an Environment Resources Centre in Bucharest and an Environmental Centre in Bușteni (Prahova) while the EU supported a Centre for Demonstration Training and Research for a Sustainable Agriculture at Cincșor near Făgăraș in 1995 under the Phare initiative for sustainable agriculture and marketing. Meanwhile, support from Heinrich Boll Foundation in Germany from 1995 has encouraged the development of NGOs in Romania, including the working group on sustainable agriculture and biodiversity: promoting sustainable agriculture by creating viable agricultural policy, educating the public and training experts.

Training is provided to help farmers convert to organic farming and a company has been set up to help ecological farmers to export. The benefits can be seen in higher prices for ecological produce and an enhanced potential for rural tourism related to the quality of local food (Mitrache et al., 1996). In addition, an experiment has been proceeding in Piatra Craiului National Park to establish the extent to which reduced sheep-grazing pressure and greater tolerance of large carnivores can pay dividends through the attraction of visitors particularly interested in the local flora and fauna (Ioras et al., 2001).

*Anti-Pollution Platforms* are being provided by 10.000 households in Călărași through the help of a \$ 10,8 mln. pilot project on farm pollution supervision funded by World Bank-GEF (\$ 5,20 mln.) with the balance coming from government and the local authority. Complemented by a similar project in Bulgaria, this should reduce nutrients (nitrates and phosphates) discharging into the Danube and Black Sea. It should also encourage environmentally-friendly agricultural practices: soil testing, improved fertilisation and reclamation of eroded land; also a legal setting for afforestation. But it seems that farmers' interest depends on protection of their own assets and avoidance of 'burdensome' regulations. Information is needed on the local environmental problems and the ways in which the actions of individuals may exacerbate or solve them. Results need to be made available to the community in order to contribute to a more effective management of water quality problems in future (Toma, 2002; Toma & Mathijs, 2004). It would appear that the best prospects for sustainable agriculture in the hill and mountain regions, with only gradual change likely in the plains where the farmland is of critical economic importance and where a large rural population is heavily dependent on agriculture. Rural planning needs to be flexible enough to link employment with population and resources. The communists had a way of involving all available labour in agriculture - with a trade-off between workers and machines - so that unemployment was theoretically impossible. But it is proving difficult under a market system - linked with private property - to work to a notion of potential that reconciles ecological, economic and demographic parameters (Kovacs, 1996). However it may be that the scope for combining more accessible procedures for business start-ups and management training with (a) simulative infant industry taxation and (b) local development organisations to consolidate agricultural surpluses, has not been completely exhausted to the point where it may still be possible to boost activity and employment - according to the potentials of each area - and thereby generate the income with which to consume and create further demand. This ties in with the concept of farming systems elaborated by Doppler (1994 p.72): what is the "optimum mix of small- and large-scale farms and of full- and part-time farming related to industrial development and employment in rural areas".

*Eco-farming* provides some opportunities arising from demand in the EU, as well as Romania's own rural tourism business built on cultural and biodiversity resources including high-quality locally-produced food. Poverty could become an asset since the soil has not been burdened by heavy fertiliser applications since the 1980s - only a tenth of the European average - albeit with consequentially low productivity; whereas in the west 'cleaning' needs much investment and takes six to eight years. However eco-farming requires a good deal of preparation. Various measures are needed at national level including ratification of treaties and conventions regarding environmental protection and ecological agriculture; laws to stimulate research and specific practices for ecological agriculture; creation of a national association of ecological agriculture; national standards of ecological agriculture; demonstration centres for farmers and advisers active in ecological agriculture (like the one at Cincșor mentioned above); compulsory environmental protection/ecology courses at all education levels from pre-school to university; and specialisation in ecological agriculture by higher education institutions: in this connection the Fundulea (Ialomița) Research & Development Institute, which used to be accused of promoting chemicalisation of Romanian agriculture, opened a Department for Ecological Agriculture in 1995 and is now internationally collaborating over research for sustainable agriculture e.g. sustainable low-input cereal production. Appropriate technologies are needed including long four to six year rotations, bacterial preparations and composts as fertiliser, perennial fodder plants and animal breeds resistant to disease. It is also desirable to stimulate the growth of natural predators, reduce the use of tractors and machines and alternate soil working depth. The Ministry of Agriculture has drawn up a programme of measures for developing ecological agriculture, given Romania's good export potential (fertile soil and relatively low levels of fertiliser application) and the higher prices available to producers.

Much more in 2002 there was a project to encourage ecological farming and to stimulate networks for processing and marketing ecological products - and generate stocks for export - while harmonising internal production and inspection rules with those of EU. However ecological farming needs at least two years for decontamination and rigorous monitoring - and returns come only in the third year: hence the case for financial support of ecological homesteads during the transition from conventional to ecological agriculture. At the local level marketing and processing capacities are needed. Dorna Lactate runs a bio milk chain involving about 8.000 small producers in Suceava County.

Meanwhile a countrywide farmers' network for the distribution and marketing of organic food is being developed during 2005-6 by the Foundation for Culture & Ecology in Mediaş with the support of the German Media Foundation Stuttgart.

*Planned Expansion of Ecological Agriculture.* Organic farming started with organisations like Bioterra and Agroecologica in 1996 – dedicated to farming using natural/recyclable resources with maintenance of the biodiversity and genetic diversity of agro-ecosystems. According to Man et al. (n.d.) certified ecological farming increased in area from 17,4 th. ha in 2001 to an estimated 75,5 in 2004 (with cereals and oil plants increasing from 8,0 to 46,5 th. ha: the rest being pasture, forage, vegetables and fruit). In terms of weight production increased from 32,5 to 135,0 th. t. Meanwhile, the ecological livestock increased from 7.000 to 70.000 for cattle, 3.000-10.000 for sheep and from zero to 6.000 for poultry (also a small number of bee hives). About 1.650 individual farms were also certified eco-friendly in 2001 (modest when compared with 50.000 farms in Italy with a total area of about 1,0 mln. ha). Danish support has helped to develop ecological agriculture in the North East where several farms were established in the Bacău area by 2002. But sadly all the small producers practising biological agriculture in their gardens make no commercial impact since their lack of authorisation. Eco-farming exports in 2002 included sunflowers, soybeans and maize - with substantially higher prices: of \$ 200/t for maize instead of \$ 160; \$ 300/t for soybeans (of \$ 200) and \$ 350/t for sunflowers (of \$ 200): appropriately when it is considered that green crops cost farmers 35-40% more than costs of farming using chemicals due to small yields and high labour costs. Exports of fruit, vegetables, cheese and eggs were reported in 2003, while two arable farms in Constanţa were selling coriander, peas and rape in France and The Netherlands as well as wheat and maize. German interests have advocated eco-production of free range eggs and tomatoes, while products from buffalo, goat or sheep milk are considered to have a good chance after accession (along with other accredited products). Ecological wine has been produced at Târgu Bujor Viticultural Research Station - with only organic fertiliser in the vineyards - on an experimental basis and there is also a considerable interest in herbal medicines that have graduated to an industrial scale in Piatra Neamţ. A well-known plant with therapeutical effects specific to China called Ginseng ('the root of life') may be cultivated on high ground in Prahova - with soil and climatic conditions similar to those at Harbin - where Chinese entrepreneurs also want to establish a processing industry in the area. Other activities are reported as curiosities - like the rearing of red earthworms in Bihor to generate good gardening soil, reported in 2001, indicate a degree of local initiative.

*Protection Woodlands* are being designated as areas immune from commercial exploitation and further afforestation is taking place on degraded farmland, along with soil protection and hydrographical works 2,5 mln. ha of such land in Romania (not to mention 7,0 mln. ha susceptible to erosion to some extent) provide opportunities for planting (irrespective of ownership) by the help of specialised units and biological material secured from the National Forest Administration (NFA) in 1999. \$ 3 mln. have been granted by World Bank to afforest 6.700 ha degraded land under the World Bank Carbon Prototype Fund (CPF), linked with the Kyoto Protocol - a mechanism to "purchase the net carbon sequestered by the newly established plantations" (Abrudan et al. 2003, p.16) otherwise the work would not be economically viable on land ruined by irrigation and mismanagement. Over 15 years the new forests should account for 855.000 t of carbon dioxide at \$ 3,6/t. The programme involves total investments of \$ 13 mln. The land is being planted during 2002-2005 in Brăila, Dolj, Mehedinţi, Olt, Tulcea and Vaslui counties. Species include acacia and poplar - the latter following research on various types to develop a model for the Danube valley whereby in 10 years trees should reach an industrial diameter (Benea, 2002). The scheme also has relevance for tips in the Jiu valley coalfield. 8,0 ha of buckthorn and pine have been planted around Petroşani since 1987, with recent support from the World Bank scheme that makes it feasible to bring in top soil to cover the tips to a depth of 20-30 cms. After the initial experiments it is expected the mining company will continue the work with its own funds. There is also a programme of woodland belts to protect farmland and roads - implemented in Vrancea after the droughts and high winds in the 1980s: after an initial 43ha in 1989-90, work continued after 1993 over 3.766 ha. Meanwhile on the sandy areas the NFA are trying to prevent desertification by increasing woodland in these areas by 0,60 mln. ha during 2002-2010 (including 60ha of protection 'curtains' on the sands of Dolj). They will also create a ecological corridor 300-1.000 m wide along the Danube in the Bărăgan and continue work in polluted areas like Copşa Mică (Bărbăţei, 2001) and Baia Mare (Leşan, 2002).

*Safeguarding Environmental Quality.* It is also important to remember that much of the Romanian agriculture is already highly sustainable in the environmental sense since the hill and mountain areas are dominated by semi-subsistence farms that cannot afford to use chemical fertilisers.

Denied subsidies that are reserved only for 'viable' farms they face an uncertain future with the inevitability of progressive amalgamation to create more substantial family farms that the investment will justify. It is therefore important that the environmental quality of much of Romania's present farmland should be safeguarded. In this connection it is good to see the progress made by Mihai Eminescu Trust in the Sighișoara area of Transylvania since 1999 after activists in the UK have made contacts with a group of dedicated Saxons in Viscri with the Fernoland family acting as local agents for the organisation and its holistic approach to rural development through heritage, conservation and economic regeneration.

The work extends to Bunești commune of Brașov (comprising the villages of Bunești, Criț, Meșendorf, Rodeș and Viscri) along with Cloașterf which lies in the adjacent commune of Saschiz of Mureș County. And there is a second cluster in the Laslea commune of Sibiu County (the villages of Florești, Laslea, Mălâncrav, Nou Săsesc and Roandola) as well as Biertan lying beyond the commune to the West.

There has been much activity in repairing houses especially the fifteenth century manor house in Mălâncrav and buildings in Biertan, Cloașterf, Criț, Mălâncrav and Viscri that are used as model guesthouses attaining standards set by the UK Landmark Trust.

There are also training courses to disseminate the relevant skills and a coordinated programme of protection and regeneration for 'Sighișoara and the Saxon Villages' arising out of a conference involving the Trust and the UNDP in 2002.

The German World Heritage Foundation is also involved in and many Germans have returned after the mass exodus that followed the revolution. But agriculture needs to ensure the survival of the rich flora and fauna: wayside weeds that include some old medicinal herbs but also rare arable weeds that survive due to the absence of herbicides and the grassland flowers linked with regular scything in June/July (especially the steppe flora of relatively hot and dry south-facing slopes).

Farmers are assisted by Transylvanian Natural Products who process and market the products with the appropriate specification, linked with the World Conservation (IUCN) 'green markets' initiative under the umbrella of the the IFC Environmental Markets Group.

Organic fruit juice is also produced at Mălâncrav. But in the context of Romania as a whole this is a drop in the proverbial ocean and there is a need to consider the wider application of the Sighișoara model with an environmental strategy to run in parallel with the programme of structural change for increasing the average size of peasant farms and the development ethos associated with Agency for Mountainous Zones, the agricultural advisory network and EU SAPARD which is interested in encouraging production methods protecting the environment and maintaining rural landscape.

## **Conclusion**

The EU's commitment to sustainable development is now well-established and agriculture has a major role in terms of minimising pollution and conserving habitats. It is arguably not as great a challenge as in some member states on account of the low intensity farming in much of the Carpathian and Sub Carpathian areas, but even smallholders making only minimal use of chemical fertilisers and pesticides can unwittingly make mistakes. At the same time conservation has to apply to human communities as well as the natural world and the government therefore decided that the EU SAPARD should be primarily directed to the development of agriculture, food processing and diversification measures (e.g. rural tourism) as well as rural infrastructure (roads, water supply and sewage).

From the modest beginnings outlined in this paper more substantial progress may be anticipated after EU accession becomes a reality, including appropriate safeguards in the areas of semi-subsistence farming when €4.0bn from the Agriculture & Rural Development Fund in 2007 will help groups of small farms to combine in marketing produce with financial incentives linked with the value of production.



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