

**Winston Churchill Fellowship 2001
Traditional Orchards - Exploring a Sustainable Future**

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SECTION ONE

Introduction

Over 5 weeks in June 2001 and January 2002, the Winston Churchill Charitable Trust supported my trips to areas of Germany, France and Spain in order to explore initiatives to keep 'traditional' orchards as a vital and thriving local landscape, with particular reference to their role as havens for nature, their contribution to the local economy and the enrichment of local culture and community vibrancy.

1) Achieving the purpose of the Fellowship

Traditional orchards, for the sake of this report, are those of tall, single stemmed trees. The husbandry of the trees themselves may be only one use of the land they occupy; others include grazing, hay cropping or vegetable cultivation. These orchards are not sprayed and receive external fertilisation only via the dung of grazing animals. The trees are often very old, some even in an advanced state of decay and may have younger saplings planted among them. In this way an orchard can persist for centuries, even though its trees may only live individually for 60-100 years, depending on the type of fruit. The fruit varieties of such orchards are commonly of local or regional origin, and some may be locally unique.

The trip revealed many creative and, in the main, community-led schemes to keep traditional orchards in good health, productive and in good heart within the community. While the difficulties facing traditional orchards in all three countries are similar - expanding urbanisation, competition from cheap imports, erosion of knowledge and the decline in rural economies - both the role of orchards in each of the three countries and the approach to their conservation were very different. This is to be celebrated. It underscores the many variations between local agriculture, culture and ways of life in what, on the face of it, are converging ways of life in Western Europe.

The success of the schemes I visited was due largely to the ability of a few key people to enthuse many others, often while the many held completely different priorities to one another. Undoubtedly the Fellowship reinforced, through positive, practical example, how traditional and old orchards can offer perfect opportunities for bringing people together and changing the ways they live with one another, the care they take about their localities, their perceptions of what they want from food and their relationships with nature. Not all the findings were good, as we will see. But the overwhelming experience was that a secure future can be constructed for traditional orchards if the focus is local, the returns are elemental and many people can become involved.

2) The adequacy of the grant

Because I frequently stayed with the people I was visiting, the grant turned out to be generous and in other circumstances accommodation, especially in Germany, would have been a much bigger drain on funds. It would have been difficult to cover such a wide area I did without a car, despite the efficient continental railways. Food prices broadly reflected what we are used to in Britain. In France I needed the services of a native speaker for two days.

3) Advice to future Fellows

My advice for future fellows is limited to three issues. Firstly, while I speak fluent German, I speak only very basic French and Spanish, and certainly no Basque. (As it turned out neither did my Basque hosts, having grown up in Franco's era when all non-Castilian languages were banned). While most people spoke some English ('English no longer belongs just to the English', as I was told by a train steward), I found it immensely helpful and confidence-boosting to learn basic Spanish before I went.

Secondly, although the Germans and French who helped me answered my initial inquiries positively, I was very lucky to find Helen Groome, the English wife of Cesar, a Basque farmer. Without Helen's help, it would have been hard to get an overview of the Basque picture. The Spanish embassy in London were able to send me contact details for a variety of cider makers and growers across northern Spain but my letters, written with the help of a Spanish speaker, were, without exception, never answered. Even telephone calls to Spain reflected little enthusiasm for what I was proposing. This resulted in the second phase of the trip being postponed twice. Once in Spain, everyone was happy to talk to me and tell me all they knew, often in fluent English, contrasting completely to the near impossibility of planning the itinerary from England. So in this sense, my advice is be prepared to follow unplanned routes.

Thirdly, I sometimes wondered about safety. None of the areas I visited are known as centres of crime but I did turn up alone in isolated rural areas to stay with people I had never met. They may have wondered in the same way about inviting in a stranger. As I have stated, I was never made to feel anything but very welcome indeed.

4) Dissemination plans

This report will be disseminated in the following ways:

(i) Through Common Ground's website, my erstwhile employers and original 'sponsors' in this venture.

(ii) My current employers, Sustain: the alliance for better food and farming, have agreed to summarise the findings into a briefing note, which will be publicised among our membership (107 national food, farming and conservation interest groups including RSPB, Oxfam, farming, health, environmental groups and many others - see www.sustainweb.org).

(iii) Joanna Blythman, journalist for the Guardian and campaigner against the loss of food diversity, has spoken to me about promoting the report in the course of her writing on apples and pears.

(vii) I have already given an account of the Fellowship at a number of conferences:

- Soil Association conference on organic top fruit production, Kent, 13th May 2002
- The AGM of the German national charity for landscape protection Deutscher Verband für Landschaftspflege (as a direct result of contacts made via the Fellowship), Langensebold, Hessen, 22nd & 23rd August August 2002.
- Celebrating Local Diversity a conference by the Somerset Local Food Projects Network, 11th October 2002.

SECTION TWO

Background

As Community Orchards Officer with the British environment and arts charity Common Ground (1998-2001), I had come into contact with people in Germany, France and Spain who were concerned, as I was, that the decline of orchards of tall, single-stemmed fruit trees was bringing adverse consequences for local wild life. In addition, because the husbandry of such orchards needs many hands, it is necessarily social, neighbourly work which has resulted in a varied culture. This is reflected in the continuation of established customs and recipes and the emergence of new ones and, naturally, the fermentation of fruit juice. Orchard decline therefore threatens to denude local culture and knowledge, and the differences in these, from place to place.

Traditional, extensive or multiple-use orchards have been an important element of the mixed local economy in the areas they are grown. This economic contribution has mostly been lost in recent decades in favour of monocultural, industrial fruit production. It has become increasingly the presumption that people making a living from the land need to do so as the managers of a commodity, growing in bulk to maximise profits from markets beyond the local. Traditional orchards are too labour intensive, the tall trees too troublesome - some might even argue too dangerous to climb - and the return from the acreage too meagre to be profitable.

Yet anecdotes of positive community-led action, regular and encouraging newsletters and invitations of collaboration from across the channel to Common Ground, particularly from Germany, indicated that the future for traditional orchards could be as bright in Britain.

The landscapes I investigated are familiar to us in England. They might even seem commonplace in some regions. The pressures on this farmed countryside are the same in Britain as they are in the countries I visited: urban expansion, loss of markets, fading skills and knowledge, changes in consumer behaviour due to more hectic lifestyles, industrialisation of farming, the homogenisation of food and through it the blurring of seasons. Nor was I visiting cultures beyond my existing experience. Yet the people who welcomed me, as a complete stranger, into their homes and families, who fed me freely and drove me around, who on my behalf took time off work as post office workers, city councillors, teachers, agricultural advisors, distillers and farmers and who, in some cases invited me to remain longer, were extraordinary.

Their enthusiasm, whether as paid professionals, or motivated by a connection with and affection for local orchards, precisely because they are part of the make-up of the place, its fabric and local distinctiveness, profoundly encouraged and excited me, while leaving me anxious about elements of our British, scientised, bureaucratic approach to orchards.

Orchard conservation does not require a degree in, say, economics or ecology as a prerequisite. It benefits from a sense of local pride reaching beyond parochialism. This pride can help people to recognise afresh in their orchards something which there has always been - an interface between nature and culture.

Three countries, three orchard landscapes in overview

There is a perception that Europe from Portugal to Greece is becoming the same place. Certainly, many of the problems facing agriculture, the environment, knowledge of places, cultural diversity, health and the quality of life, are common concerns throughout the European Union.

Orchards also might be assumed to fulfil similar roles in the three countries I visited, namely the production of fruit. Yet the detail of cultivation, of complementary land use and importance of the orchards to the local economy and people were different in France, Spain and Germany.

In general, the **German** orchards I saw were extensive. The parish of Neuffen, for example, when viewed from the ramparts of its castle 423m above sea level and towering over the parish, seems to be one enormous orchard interspersed with houses. This must be a captivating sight in the spring, when the whole landscape can be imagined as under a snow-like blanket of fruit blossom. Certainly at ground level it is possible to see nothing but fruit trees in every direction. Other distinctive features about the orchards of Baden-Württemberg, Germany's most south-western state, include that they are of mixed fruit, especially pear, apple, cherry and damson all jumbled in together and, not uncommonly, containing occasional walnut or quince trees. The ownership of the orchards is in many private hands, often with just a few of trees belonging to an individual. This is a peculiarity of the local (and ancient) inheritance law where each child, irrespective of gender, inherits an equal share of the land bequeathed. This has resulted in orchards being open, fenced neither around or within, enabling free public access. It would be far too awful a prospect to fence off six trees while negotiating access to them past and around many others, and in any case neighbours may be willing to help with the harvest.

In the **French** departments of Haute Garonne, Ariège and Gers, the orchards seemed tiny in comparison, mostly occupying the land directly adjacent to the house. In this sub-Pyrenean, almost Mediterranean climate of mild damp winters and long summers, the fruits are correspondingly exotic. In the Gers, home of *fois gras*, fig orchards are both a source of table fruit and serve to force-fatten and sweeten the duck livers shortly before slaughter. This tradition was inherited from the Romans, it is said. In the south west of France, quince trees are traditionally planted in the corners of fields to mark its boundaries. In the Haute Garonne and Ariège, apples or cherries are cultivated both on grass and on the edges of surrounding allotments, and in some cases maize or other grain crops are still grown beneath younger trees which do not yet shed deep shade. Chestnuts are also important crops in the Ariège, where they were in the past ground into bread flour - the rugged hilly landscape means that no wheat can be easily cultivated.

In Karanza, a valley of settlements centred on the town in the west Vizcaia of the same name, the western-most **Basque** province, apple and damson trees grow on steep slopes grazed by sheep and cattle. They are bigger than the French nursery-garden type and are perhaps reminiscent of orchards in Devon and Cornwall - tall trees, some on their sides and marked clearly at their base with the hollows made by sheltering sheep. These trees deliver mainly dessert fruit and few Karanzans still make cider. Further east, past Bilbao, cider orchards of low goblets (shorter trunks and four or five spreading main boughs) are the norm. Some cling to the slopes around the former steel-making city and can be clearly seen when the view is not obscured by buildings. Other orchards are directly around the cider houses (*sidrarías*) but these, despite their recent renaissance, are in danger of being grubbed out in favour of bush plantations.

FRANCE

Solagro: An NGO approach to Orchard Conservation in France

Solagro is an environmental non-governmental organisation (NGO), which works towards agricultural sustainability and the promotion of renewable energy. Solagro started by campaigning against the loss of farmland woods and by 1995 had extended its work into orchards. Little attention had been focused on orchards in France until then. This was a significant oversight according to Philippe Pointerreau, Solagro's head of agriculture and my host, considering the fact that there are between one and two million hectares of orchards in the EU. This is an enormous area compared to, for example, the coverage of hedges, yet Philippe notes that everybody gets very excited about hedge conservation. Orchards seem not to fit into many traditional conservation categories. Some people, especially older people, he adds, develop an interest and expertise in pomology but no group seems to reflect Solagro's interest in the land use of orchards. The similarities with Britain are striking.

Solagro's starting point was to analyse the government land use statistics of 1929, which showed that most orchards were in very particular areas: in the north west of the country they thrived in Brittany,

Normandy and Picardy, all important areas for cider and perry; in the east, in Lorraine, mirabelles (cherry plums) were widely grown, as were cherries in the neighbouring Haute-Saône. Cider apples were also important in Haute Savoie, west of the Alps; Dordogne was walnut heartland; and apples were cultivated in the Tarn valley and Haute Garonne. The newer land use maps of 1999 and 2000 showed that while the level of distribution was dramatically lower than 70 years previously, in other words there were fewer orchards, the pattern was still very similar.

This distribution is initially explained by the fact that these areas are poor for grape culture. The northern distribution in particular can be traced north of a line between champagne and Brittany. In Lorraine and the south-west, grapes are also widely cultivated but on slopes lower than the orchards. Orchards were cultivated particularly on the hilltops or more marginal slopes, mirroring the pattern, as we will see later, in the Spanish Basque country.

One characteristic of French fruit tree distribution which has largely persisted since the analysis of those 1929 maps is that many individual fruit trees were scattered around the holdings, especially on arable land, and as they did not constitute orchards, were not counted in the survey. Yet this significant arable fruit presence contributed to the farm fruit crop. In the case of quince trees in particular, their allotted position was in fact in the corners of arable fields where they marked field boundaries. This is particularly so in south-west France.

This grassland-arable distinction bears closer analysis and reinforces local distinctiveness. The concept of a traditional orchard is reflected in the term *pré-verger*, which describes an orchard planted in grassland i.e. the orchard is under-grazed. Meadowland orchards, such as the ones encountered in Germany, are not a common system at all. Orchards seen in the Gers, Haute Garonne, Lot-et-Garonne and Ariège are seasonally grazed. In Normandy, the grazing is exclusively by the local breed of dairy cow. This long-standing relationship between cow and orchard has produced Normandy butter and cider as among the very top quality in France, earning both products regional origin denominations. A number of butter packets, those from Isigny amongst others, bear illustrations of cows grazing beneath fruit-laden apple trees, or the butter foils may be simply printed with apple motifs. The old maps and the new show a discrepancy in the distribution of cider orchards (*cidreries*) and of presses (*pressoirs à pommes*) in Brittany, exactly because, unlike their Normandy neighbours, Breton orchards were on arable land. In Brittany, it seems many people own fruit trees but few have grazed orchards.

By contrast, the national picture for pear tree distribution is less localised because pears were more commonly part of the mixed farm patchwork.

In 1929 the government maps showed around 450,000ha of orchards. The distribution, apart from the reasons given above, not surprisingly also matched the distribution of apple and pear presses, cider and pear producers, distilleries (*calvados*) and the *alambics* (stills, for the production of *eau-de-vie*, such as *kirsch*). The last two groups also appear in huge numbers in Charente-Maritime and the Gers where Cognac and Armagnac brandies are made. By 1998, another government survey year, Solagro noted that this figure has reduced to around 150,000. The greatest losses were in Picardie and Bas Normandy.

By English standards, this loss is not great - the French have lost two-thirds of their orchards in 60 years compared to around 75% of English traditional orchards since the 1960s. However, the Gallic problems are similar to those faced north of the Channel - orchards, where they survive, are neglected and little value is attached to them or their fruits whether for economic, ecological or cultural gain.

In all of this it is important to understand the significance of domestic consumption in France. As with the German orchards, much of the fruit, cider and *eau-de-vie* will have been for consumption by the household of the grower or within the immediate neighbourhood - 50%, Solagro estimates. The efforts, to successful effect, of an initiative called *Rénova* (see below) reflect the continuing importance of home consumption of orchard produce.

Another government survey (1997) used by Solagro explores this notion of *autoconsommation* from the farm and gives it an economic value. A few are related, to a greater or lesser degree, to orchard culture:

Product	Level (%) of home consumption 1960	Level (%) of home consumption 1997	Value in millions of francs 1997
Eau de vie	29	4	50
Non-tropical fruits	18	4	1,423
Cider	61	53	1,107
Honey	4	11	71
Fire wood	78	88	4,807
Total	190	160	7,458

Fire wood and fruits in particular include a high proportion of non-orchard produce, but the importance of small-scale production for local consumption remains very important. With the exception of Normandy, where cider can constitute a single business income, it is not likely that traditional orchard culture can become a money-spinner. Neither, whether in Tarn, Tübingen or Tewkesbury, has it ever been the case. However, opportunities exist whereby the active cultivation of traditional orchards will add significantly to a mixed income stream, as well as underpinning local differences in landscape, culture and nature. These opportunities are being suggested by NGOs such as Solagro (and indeed Common Ground) but the work is being carried out by farmers and community groups because, while new ways are being invented to make orchards at least pay their way, the contribution they add to places all over Europe are worth much more than their loss to commercial undertakings.

The intensification of orchard culture began in the 1950s, which coincided with the peak of French traditional orchard area. Few varieties were planted in the intensive orchards. A mature traditional orchard can produce a crop of about 6 tonnes per hectare compared with 50t/ha in an intensive plantation. Pretty soon, this kind of production level led to gluts in supply and thus fewer orchards were needed. There is a crop cap on fruit production, as with other produce, and cider consumption is continuing to decrease, albeit slowly. Diversification back into quality cider production has become attractive to many small farmers, supported for example in Normandy by the Appellation de Origine Contrôlée (AOC) scheme, which was extended as recently as 2000 to perry. The scheme does not, however, offer guidance on the type of orchard from which the fruit comes.

Local differences in fruit tree spacing in traditional orchards is not very marked between départements, which is mainly around 60 trees per ha for apples. The habit in Somerset, for example, and much of England, is closer - 60 trees per acre, although the giant perry pear trees of Gloucestershire, Herefordshire and Worcestershire are more like 40 per acre.

In 1997 Solagro started some work on helping farmers in Tarn to secure funding from the Ministry of Agriculture for landscaping initiatives such as pond or stone wall restoration. They also set up a project promoting hedgerow management which involved an agronomic survey. Solagro negotiated the widening of their work to include other methods of sustainable agriculture, including orchards and sustainable irrigation, again with support from the regional or departmental environment ministries. Philippe presented arguments to the environment ministries claiming that biodiversity needs to be at the heart of the farm, not separate from it. We are seeing this thinking emerge now in England. The recent (January 2002) Policy Commission on the Future of Food and Farming has outlined recommendations which suggest whole farm plans as a guide for environmental stewardship-based subsidy payments.

In 1998 Solagro undertook an inventory of birds and plants and carried out an agronomic study (Philippe describes this as an agri-environmental diagnostic) to evaluate the role of the orchards and

the associated pasture beneath the trees, including the pest-predator relationship, which showed that that orchards supported a wide diversity of species. While Solagro staff carried out the bird surveys, the other surveys were carried out by local botanists.

A distinctive characteristic of the French orcharding system seems to be that many parties may share an interest in the orchards - there is the owner, who may not use it at all, a grazier who may bring in stock seasonally, and then the farmer who uses the fruit. Solagro sets up advice and training for all parties on techniques to get the orchards working again.

In the Midi Pyrénées, the orcharding culture was very nearly dead when Solagro became involved. The people operating local juicing scheme are very often not the local farmers indigenous to the area, but former urban residents who have moved to the countryside, or local unemployed people who prune or graft for the farmer in return for a crop share. Thirty years ago, regional fruit production from standard trees was for the table rather than for cider. This became uneconomic, so juicing is now the way forward for many of the surviving orchards. This is in contrast to Germany, where juice in its own right has always been an important local product.

The juicing industry is currently in surplus in general commercial terms so the need is for traditional orchards to offer a completely different product - unsprayed, delicious, local, conserving the landscape etc. The market needs to be redefined in favour of traditional orchards which bring in a higher return. Philippe says the current number of traditional orchards involved in juicing is quite small and he would like to follow the Germans - where orchard conservation programmes are now producing 8,000,000 litres a year - including the development of a labelling scheme. There is no notion of environmental labelling in France yet and neither the mirabelles in Lorraine nor the Haute Savoie apples have AOC status (olives and walnuts do, however).

Case Study 1: Rénova

Rénova (*Renewal*) is a small charity set up in the 1994 to safeguard fruit varieties, save and promote the rich bank of orcharding knowledge and explore possibilities for promoting orchard produce in the Haute Garonne, and most recently in the Ariège. Rénova's motivation is rooted not least in the realisation that the large variety of local orchard fruits represents 'an incomparable palette of flavours and of versatility.' Taste and gastronomy are, in typically French style, central, but rank equally beside nature conservation and countryside protection. I met Francis Michaux, a retired architect and Rénova President, also Frédérique Coulon, Rénova Honorary Secretary and Philippe's Solagro colleague, along with José Clivillé, a Catalan farmer and cider maker who moved to the Ariège 20 years ago.

In 1996 Rénova started a programme to restore, restock and plant orchards anew. Since then Rénova has encouraged the planting of 4,000 trees of 100 local varieties growing locally and restored the same number, in an effort to go beyond conserving those remaining orchards by making sure new orchards grow up to eventually replace them. All restocking programmes are coupled with orchard skills training such as pruning and grafting, carried out with the help of each local chamber of agriculture. Apples are sold by the growers when fresh and surplus stock sold as jams and juice.

The 4,000 new trees were not bought from a conventional commercial nursery. Instead, all were raised from scions cut from local, existing fruit trees to assure local provenance and by way of promoting grafting knowledge. The graft work is carried out by local farmers belonging to the scheme and sold on to neighbours wishing to restock their orchards. This system means that the person who has been prepared to undertake the nursery work profits from the sale.

An important element of the programme is the training of farmers who haven't used their orchards for many years, so that they be encouraged to bring them back into fruit. They in turn share their new-found knowledge with their neighbours, so increasing the influence of Rénova. Over 6 years Rénova have carried out annual training programmes covering the various elements of orchard management.

Each year around 25 people attend and share what they learn with their neighbours, helping the network to grow.

Inspired by Solagro's farm orchard surveys of the early 1990s, Rénova bought their first communal apple press in 1996. Two years later 70,000 litres were being produced by the Rénova press in the Tarn valley. Francis claims that it was relatively easy to excite people about joining the orchard scheme. For a start, people love to learn from existing success stories - it shows them what can be done; also the fruit variety survey whips up enthusiasm and pride in particular local varieties. The third attraction is tasting the delicious juice.

At the time Rénova was first established, most farmers were leaving their fruit crop on the ground because they couldn't find a market for it. Many thought that Francis was mad trying to get orchards working again. However, some farmers were happy to try juicing and within a year many sceptics had been won over by the quality juice that was being produced. When people realised that their own crop could be better used, they too began to harvest.

At the time of my visit, four mobile juice presses and pasteurisation equipment were in operation. These are taken around to parishes and usually service about 25 growers each. It needs four people for optimal operation. Thus around 100 people are using the four presses. The pressing days are very sociable occasions and are often held at the weekends. An agricultural co-op has been founded which operates the press. The co-op establishment meant that its members could benefit from a 50% grant offered for equipment sharing projects. Therefore the cost of pressing the juice can be kept low enough to encourage farmers to participate. Farmers pay the co-op for the use of the press. While the initial focus of the programme has been landscape rather than production focused, the product is high quality, high value (15F litre - 30% more than the German juice) and varied and includes jam, juice, cider and calvados (apple brandy).

Another important benefit of the scheme is that it enables an economic return for people who don't actually own orchards themselves. For example Jose sometimes helps restore orchards for other farmers in return for a share of the crop. He will also accept payment (preferably in cash but he will take bottled juice) for juicing and bottling a farmer's crop. Some also let him plant his own trees on their land because his own holding is small.

In 2001 80,000 litres were produced in the Rénova scheme, in what was not a particularly good harvest year. About half of it was sold (worth 60,000F) in the local produce markets.

The agricultural convention between the state and farmers exists thus: any farmer can make an agreement to do certain work and make certain investments on his farm. The government will subsidise this agreement plan if it fits in with the local agricultural subsidy measures. Rénova has managed to influence the local measures to include orchards and this has enabled a co-operative approach (and subsidy for the shared orcharding equipment) but through individual and flexible action. Rénova inspects all the holdings to make sure they are carrying out their agreed actions correctly to qualify for subsidy. To qualify for the shared equipment subsidy, José and his colleagues had to set up an agricultural co-op called 'Land of the Pyrenees.' So far there are 4-5 main producers but they work to encourage the participation of about 25 others in an area covering about 25km.

José usually has an annual harvest of around 7 tonnes. 2001 was a poor year and he only got 2 tonnes. He is renovating his outhouse so that it can be used for exhibitions and training demonstrations for other growers. The ground floor is to become the pressing room and the cooler basement will be for storage of fruit and bottles, as well as for bottling and pasteurisation. He has constructed his own pasteuriser from a metal drum containing water, heated from below by propane gas. The juice is pumped, from an adapted milk cooler, where it is stored immediately after pressing, into something that looks like a small stainless steel radiator. This is immersed in the water, which is kept at a constant 75°C and after a few minutes, flows out of the radiator into the sterilised bottle.

Rénova works in nine *arondissements* (district council areas) in Haute Garonne and the Ariège. They could expand their work into other areas but at the moment the Ariège farmers are so enthusiastic to get their orchards working again, they are continuing their work here.

The fact that the orchards in the scheme are small farm orchards mainly for home use makes it harder to get political support for the scheme. Rénova has worked hard to argue for the wider benefits of the scheme and has shown that seven new incomes have been created directly from the scheme. At the moment, although it helps bring in a little money, the starting point is the conservation of the orchard landscape and ecosystem. One farmer member has a mixed farm including 100 chickens, which bring her 10,000F annually. This is not her only income and the addition of a juicing income can help. 1ltr of apple juice sells for around 15F, for which she will need about 20 apples = around 1.8kg (4lb). A crop of 200kg per tree would give her over 110 bottles with a return of 1,650F. The returns could be increased by co-operative labelling and marketing along German lines (see below).

In 2001 Rénova piloted 'orchard solidarity,' a scheme to find publicly owned land for cultivation by people with none of their own. Landless or unemployed people are encouraged to grow vegetables and orchard fruits on the land which they are allotted for free. The current target is to establish 10 new solidarity orchards which can be contracted out for at least 5 years at a time.

GERMANY

NABU – A bird in the hand

NABU (*Naturschutzbund Deutschland*) was founded in 1899, originally as a bird conservation organisation, but widened its environmental interests around 1980. NABU is Germany's *BirdLife International* partners, and has a membership of 350,000. Markus Rössler co-ordinates all the local NABU groups.

Markus chairs NABU's federal working group for traditional orchards (*Bundesarbeitsgruppe for Streuobst - BAG*). There are a number of federal working groups, which deal with issues including etymology, environmental law or wetlands. All working groups are funded centrally by NABU and additional income for the orchard group comes from newsletter subscriptions, occasional sponsorship and from the materials distribution sales. Each federal state has 1 or 2 representatives on the federal groups. The orchard working group has roles which include monitoring national NABU policies on orchards; issuing the guidelines relating to the fruit juice labelling scheme (one Pfennig per bottle sold through the labelling scheme goes to pay working group - full details on page 11); production and distribution of *Rundbrief*, the quarterly orchards newsletter; setting up and management of internet advice and information. NABU has an internet specialist working on orchards, supported by the national team (www.streuobst.de). The working group also has a political lobbying arm in regular contact with ministers and Markus is trying to set up a Streuobst research institute.

In Hessen, where the largest tract of traditional orchard in Europe survives, the regional NABU group has been claiming since the 1970s that local produce is good for nature conservation. In the early 1980s NABU bird surveys were showing a decline in farmland birds, which seemed to correlate with orchard decline and the abandonment of orchard management. The solution was to set up community-led orchard conservation schemes, which earned an income for the orchard owners by harvesting fruit for juice and selling the juice at a premium to local consumers. The label for the juicing scheme is a little owl sitting in an apple tree. Little owls were greatly affected by the loss of old orchards, where they lived in hollow trees and hunted, and have benefited from the restoration of the many orchards the juicing scheme has supported. There are now about 100 local juice groups in Germany. In time these schemes, which are run by local enthusiasts and amateur naturalists, can be made self-financing and even profitable, which allows them to be completely adopted by commercial juicers.

Markus is happy that the scheme has created new market opportunities for making traditional orchards both economically viable and environmentally sustainable. NABU supports the establishment of juice initiatives, but does not run them.

A brief overview of German fruit growing reveals several thousand fruit varieties, dominated by apples. Pears are not necessarily associated with any particular area but are commoner the further south you go, as are cherries. Franken, in northern Bavaria, is an important cherry province, as is the area around Witzenhausen in Hessen, and areas of Baden Württemberg, such as the Baden Baden levels. Apricots grow exclusively in Sachsen Anhalt and Düllingen in South Brandenburg, where particular local microclimates exist.

Damsons are common in the south and mainly made into Schnapps. In the Black Forest the small black cherries, renowned in England for their addition to the eponymous gâteau, are also valued for 'burning' (*brennen*) i.e. distilling. They are so economically important that special allowances for the use of the restricted pesticide *plantoncin* have been given. In the Mannheim-Heidelberg area there are peach trees because of the mild climate, though walnuts and hazels are not especially grown outside of woods and hedges.

Cultural connections exist in areas where orchards are important and influences on language reflect this. For example, north of the river Main, *Most* is juice; to south it means cider. In the Saarland they call cider *Viez*. *Gauwhiskey* is a Saarland name for Obstler, the distilled juice.

Most own-grown German fruit is taken to a local press and used for home consumption. The further south you go, the more pears are included in the juice. Pure perry is drunk in Switzerland. In Baden Württemberg the ratio is mainly one or two thirds apple to one third pears. Quince fruit is often added to the press to colour the juice.

In the last 15 years NABU has started *Mostpremierungen*, tasting events, at which all the local people who have *Most* at home bring a bottle for a jury-based tasting. Regional dishes and exhibitions of regional dialect, often as poetry reading, take place. These functions are particularly popular in Hessen and Baden Württemberg. In some Saarland communities they have the *Viezkoenig* – the Cider King - and a *Viezstraße* – a cider trail (such as has now been started in Somerset, to encourage rural tourism and the sale of local produce). NABU is encouraging the resurrection of some traditions, such as *Kelterfesten* - press festivals where juice presses are opened up to visitors, and *Apfelfeste* - apple festivals, which are rather like Apple Day in Britain (21st October), but not a set day. In Germany, many such festivals are, as they are here, based around fruit identification. These are popular and one in Nordrhein-Westfalen, not a major orcharding state, regularly attracts around 30,000 people.

In Rügen, on the Baltic coast, hotels or farms are beginning to send bottles of apple Schnapps to summer tourists from other areas as an encouragement to return. In Saarland some places sell a weekly mail order *Bauernkorb* (farmers basket) which contains seasonal local specialties including juice from local orchards.

Case Study 2: The NABU in Saarland Interreg Programme

NABU groups in Saarland and Rheinland-Pfalz worked between 1999-2001 with partners in Luxembourg and the Saarland district council area Kreis Merzig-Wadern, on a 2 year Interreg project, i.e. part-funded by the EU. The aim was to try and create orchard employment and improve marketing possibilities for the fruit and which was called *Schutz durch Nutz* ('protection through use' - a more positive version of 'use it or lose it'). The district council carried out a mapping programme in 1988 of the whole district. They took a new look at the statistics in 2000.

The Interreg partners started by carrying out a consumer survey in Trier, Merzig-Wadern and parts of Luxembourg, of tastes and purchase habits in restaurants, pubs, markets, nurseries etc. to see what was being bought and what would persuade people to buy *Streuobst* juice. NABU has studied the

results and calculated that if certain numbers of people drink particular quantities of juice from local sources, a quantifiable number of new jobs could be created and existing jobs could be saved.

In Merzig a tree nursery of two trees each of 100 varieties has been established for growers and consumers. It is being run as a demonstration traditional orchard to establish non-chemical techniques for dealing with pests and diseases, pruning, mowing. The nursery also offers a facility juicing. NABU attracted 20,000DM of EU money for this. The demonstration orchard was ceremonially opened in October 2001 with *Viez*, local food and juice.

Part of the programme also includes *Deutsch-Luxembourg Streuobsttagungen* – German-Luxembourg traditional orchard conventions, in which studies are made of the harvest, juice marketing and production, and publicity.

Other work of NABU Saarland includes ‘Saftmobil’, a one-tonne trailer with a 60-litre press and scrapper, which goes around to villages and schools where it presses juice brought in by local people. It is also used as a mobile shop for selling NABU apple juice. Eventually, NABU will loan the trailer out to local groups. NABU may try to set similar schemes up in Mecklenburg and Sachsen-Anhalt in eastern Germany where many orchards are threatened with the reorganisation of former communist block agriculture and the migration of many rural dwellers to the west and into towns.

Like other Länder, the Saarland state government offers a grant for orchard conservation under their *Kulturlandschaftsprogramm* (cultural landscapes programme), drawn from an EU budget available throughout the Union: (VO) (EG) 1257/99. This is the rural development programme from which our own England Rural Development programme is part-funded, but with the difference in Germany that the states governments have, almost universally, included orchards as a distinct support programme. The fund is available only to farmers who are able to claim a maximum of 900DM/ha per year, depending on the conditions they fulfil. In 2001 the size of orchards which could be supported was between 4.5 – 2,257 Ar (an Ar is 1/100th of a hectare and so the lower figure is just over 1 acre). The take-up is very good with 25 schemes in just one district council area in the Saarland.

There is an additional grant from the Saarland environment ministry *Umweltsministerium* (environment ministry) called *Baumverkaufsaktion*, where the state offers standard trees for 13DM, via the parish councils. In addition there may also be *Kreisförderung*, for example, in Merzig-Wadern, the district council supports clubs or farmers’ co-operatives involved in marketing schemes. This *Kreis*-based fund will also have originally come from EU budgets for the marketing of products and the care of the landscape and NABU have worked to combine all these budgets to construct a distinct orchard support scheme.

At the moment 20-25% of Saarland schools take part in the free *Schulapfel* (school apple) scheme, with fruit coming from local orchards. Pupils between 7 and 10 get a free apple and older pupils must pay between 30-50pf. The scheme is subsidised by the Saarland *Kultusministerium* (culture ministry) and promoted by NABU. The British Government is also about to follow this scheme with the *Free Fruit in Schools* scheme.

Case Study 3: Orchards on the urban fringe

Doris Pepler-Kelka, Green Party Councillor with Stuttgart City Council, runs the *Vörderkreis Stuttgarter Streuobst* (VSS - association for the promotion of Stuttgart orchard fruit). As early as 1985 she had begun to worry that many local traditional orchards were being grubbed out, especially for building development linked to the nearby airport. Research by NABU suggested that around two thirds of all Swabian orchards had been destroyed since 1934. In Stuttgart 15% has been lost since 1962 and Birkach, at once the councillor’s home and constituency, has lost 70%. In 1988 Doris helped organise the mapping and surveying of the Birkach orchards for fauna and flora. This revealed a richness of birds and plants which were in desperate decline within the rest of the City limits.

Nature in the flightpath at Osthang

Plants among the grassland in the Osthang Community Orchard in Stuttgart include hedge bedstraw, meadow vetchling and common vetch, meadow cranesbill, creeping jenny, hawksbits, many grasses and clovers. The orchard is visited periodically by pupils from the local primary school who do nature study classes and have juice tastings. They have also planted a small orchard of local varieties in the school grounds. Spotted and green woodpeckers and well as starlings nest at Osthang and blackbirds are common as are coal tits and long-tailed tits, chaffinch and tree sparrow. In February a flock of 500 waxwings (*Seidenschwanz*) appeared in the orchards on their summer migration to Finland. Other birds include whinchats (*Braunkehlchen*) and nuthatches.

There are around 50 trees in the orchard, which is 4,000sqm - apple, pear and a few damsons, as well as a walnut. The pear trees are around 120 years old and offer nesting opportunities for the owls. The higher growing damsons, when ripe, attract feeding insects, which in turn bring in local bats, such as pipistrelles. Doris Peppler-Kelka emphasises that because of its age, mixed structure and consistent and extensive management the orchard supports dormice (the continental, rather than common known in England), weasels, and stoats.

Doris and other local people carry out the mowing in the Community Orchard twice a year, once in June when the flowers have set seed and again in July when the grass stalks are still tender and contain sap, so that the hay is palatable for horses. She did not think it was wise to cut only once if the hay was to be eaten by beasts. They use a mechanical mower to mow the orchard, although Doris has done it with a scythe, which took her 9 hours.

Part of one of these orchards, *Osthang* (east slope), was outlined in development plans and in fact a small strip of it (the part nearest the houses), is still owned by a building speculation company. The rest is now owned by the City Council as a community orchard and has been designated a *Landschaftsschutzgebiet* (LSS - Protected Landscape Area). This is a fairly low-grade designation which can be awarded by a local authority to protect a traditional or beautiful landscape. It has relatively flexible management guidelines, which enable the many other privately-owned orchards to continue to be used as they ever were without compromising the designation. Once a designation has been awarded, this may affect the price of the land. For example, its value as development land will plummet because building becomes impossible, within the terms of the designation. The commercial value of LSS land is set by the designating authority at between 35-80DM/sqm. With a *Naturschutzgebiet* (Protected Nature Conservation Area) designation, which is linked to much stricter landuse, this value may fall to as low as 5DM.

In 1989, with encouragement and funding from Stuttgart City Council, an orchards project group was formed from local members of the national wild life charities BUND and NABU with the view of exploring the possibilities of an initiative to process fruit from local traditional orchards, which could be financially viable for orchard owners. By 1990 local juice companies had agreed to take fruit from the orchards and guidelines for growers on environmentally friendly orchard husbandry were drawn up and distributed. Now, five autumn pressing days are held where fruit from the scheme's orchards in Birkach and neighbouring Plienigen is juiced. Three thousand litres take three months to sell out. A local drinks firm estimates it could sell 30,000 litres without any extra marketing or advertising in its branches, despite (or because of) the higher cost price compared to juice made with concentrates.

Membership of VSS, which is a fully constituted non-profit group, enabling them to accept donations, is open to anyone interested. However, one important corporate member is Stuttgart City Council, which contributes 1,500DM annually, not a bad investment perhaps for the management of council-owned land by local residents. In addition, VSS and several other orchard conservation initiatives in other parts of Germany have attracted corporate sponsorship from the Sparkasse, a national bank (VSS received 10,000DM as a one-off payment).

Aufpreisvermarktung: How it works

VSS buys bagged apples from local growers at an increased price (*Aufpreis*) of 28DM per 100kg (*Doppelzentner*), which is double the normal wholesale price, plus 20pf per litre sold as a wild life levy. Growers themselves must deliver the fruit to a local juicer (*Kelterei*) for pressing. The juicer also bottles, homogenises and labels the bottles with the VSS label, which they design and print themselves. The VSS pays the juicer a flat fee for pressing and bottling but carries out its own marketing and therefore keeps the sales returns. The juicer also helps with marketing the fruit through established market contacts, so as to become associated with this high quality and high demand juice. There is only one *Kelterei* left in Stuttgart now - there were 15 or more until the mid-1980s - and the juicer is also a member of the VSS. Juicing takes place usually between 20th September and the last week in October. Doris maintains that the demand for naturally cloudy apple juice is rising more than the demand for beer.

The aim of the VSS is to conserve traditional orchards in Stuttgart. All of those they buy fruit from contain unsprayed fruit. This is a pre-requisite of fruit purchased by the group. While there is no external organic certification of the fruit taken to the *Kelterei*, fruit is judged partly by assessing the crop against the size of its orchard. Most local orchards will be known to members of the group and so if an uncharacteristic crop is brought in, in comparison to other years and other growers, questions are asked. Leaf samples are also taken by VSS members from participating orchards and sent to an organic testing institute.

Since 1991 VSS has been handing out free trees of local varieties and high resistance to the normal suit of diseases to anyone who wants them. In the Birkach Community Orchard and in some of the private orchards, VSS has hosted pruning courses for people interested in learning and who will then be called upon to help Doris with the pruning, but also for orchard owners who have let things slip for a few years. Local tutors do the teaching.

Case Study 4 - Catching them early: Verein zur Erhaltung der Streuobstwiesen

Bruno Seng teaches literacy in Wilhelm Busch Schule, a special needs primary school named after the famous author of the children's classic *Max und Moritz*. Göppingen is under an hour's drive east of Stuttgart. Bruno's Year 4 class (equivalent to English Year 6), run an apple juice factory using fruit from an orchard it owns.

The school scheme is part of a wider local initiative which Bruno co-ordinates from his home in neighbouring Rechberghausen: *Apfelsaft aus Rechberghausen und Umgebung*. It is run as a club *Verein zur Erhaltung der Streuobstwiesen* (Club for the Conservation of the Orchards), of which Bruno is the Chairman. The Vice-Chairman is a farmer and Bruno's former pupil. Most local farmers are members of the club. There are 20 producer members and other interested individuals. Membership of the club is free and producer members get a free fruit tree at Christmas to encourage fill gaps left by dead trees in their orchards. Fruit juice sold from the scheme is available from a small NABU shop (a former ship container) on Saturday mornings.

This Rechberghausen juice scheme has developed separate labels for each of the three juice markets it supplies - one for the school (bearing Wilhelm Busch's image), one for the *Sachermühle*, a local pub and one for Börtlingen village, the location of the container shop.

The scheme was started in 1995 by one of Bruno's former pupils, a farmer, now 40 years old. They set up the club as an offshoot of the local NABU group, but because the risk of bankruptcy was initially quite high, they didn't want to jeopardise NABU (which owns its own orchard and tractor), and they set up as a separate registered club (an *e.V. - Eingetragener Verein*). This status enables them to have a separate legal identity with limited liability. The club took out a 5,000DM loan with a local bank. The Town Council gave them a further loan of 3,000DM as a bottle deposit - all bottles are

returned for washing after use. The scheme finally broke even after about 5 years and made around 2,000DM in the year following. Each bottle is sold at 2.30DM, but if you bring fruit to be juiced, the cost per bottle is only 1DM. The club now juices and sells 30,000 litre bottles a year of cloudy, delicious natural juice from unsprayed apples.

Each summer the leaves in the orchard are tested to verify that farmers aren't spraying. However, the juice is not labelled as organic because the whole farm would need to be designated and there is no *Landschaftschutz* designation in these orchards, as there are in Stuttgart and in Neuffen (see below). The farmers in the scheme are not interested in or attracted to schemes which claim to be organic or which benefit nature. They are more attracted to the idea of regionality - it is an easier concept for consumers to understand and is based on geography, not science. People trust the club because of Bruno - many of the farmers' children are taught by him.

Each member farmer can bring up to 2 tonnes of fruit for which he will be paid double the market price, which can be as high as 36DM per 100kg. When the farmers deliver their fruit, they get a credit note and don't mind waiting until the juice has been sold before they get paid. Anything over 2 tonnes will still be juiced but they have to market it themselves. Over 2t the farmers don't get cash but a credit note for a corresponding quantity of juice @ 1DM per litre.

Cider is also made at the rate of one-third pears to two-thirds apple. The cider (*Most*) is good, very dry and fruity, light, and low in alcohol. Pears have twice the protein content of apples and make the juice very murky. However, once the juice is settled, they separate the clear juice for cider production and leave the murk for Obstler (eau de vie).

The club offers a mixed crate of clear juice, cloudy juice and cider. Cider isn't especially popular - possibly because it has to compete with the delicious and affordable German beers and wines.

The juicing scheme has achieved more than the protection of local orchards. The village of Oberhausen is divided by a road which in turn separates the village into denominations: on the right of the road are Catholics who live in the Rechberghausen parish, on the larger left side of the road are the Lutherans who belong to Göppingen Parish. There has always been a bit of tension between the two halves. Bruno feels that the juicing scheme has helped bring the two sides closer together. One family in the village had even been involved in a feud and the scheme reconciled them through co-operative working. About a third of Bruno's members are from Oberhausen.

At Wilhelm Busch Schule the children are involved in the whole orcharding cycle and even own a small orchard (0.6 ha) bought from a local farmer. They cut the orchard grass in the traditional way with scythes, once in June (heuen) and once in September (Öhmd). The Öhmd is shorter and finer and has fewer minerals so it is more suitable for horses which otherwise get skittish on rich fodder. They rake up and compost the hay, as they have no beasts of their own. They have an old building site wagon, which they use as a shed for their hay rakes and scythes. They also gather, mill and press the juice using a club press and sell it to their school colleagues and parents on every Monday and Thursday by the bottle and crate. Their juice is also sold to the canteen of the district council offices. They sell the fruit to Bruno just like any other producing member of the club but instead of being paid cash, they get a Gutschein (credit note) for the bottled juice worth 1DM a litre. Thus they don't have to handle money, except what they take from sales. The profits from this help to pay for school trips.

In addition to the juicing scheme, the club also manages public orchards, owned by the parish. The method of management is important. Most farmers today use Kreismäher (circular mowers), which kill 96% of the meadow's invertebrates. Balkenmäher (alan scythes), however, are slower and cut smaller areas and give insects a chance to get out. Bruno encouraged me to imagine the effect on local orchards if Kreismäher were exclusively used to mow the orchards. NABU and the club recommend Balkenmäher. The club is very proud because there are 15 breeding pairs of redstarts in local orchards.

Their 30,000 litres a year are sold thus: 5,000 to a local drinks shop, 5,000 to local NABU members (captive market), 20,000 to the store to be sold to the public on Saturdays. Participating farmers also sell it from their farm shops and the pub (Zachermühle) sells 100 a week in the summer months. They get it at a wholesale price of 1.50DM

In addition to the juice scheme in his own school, Bruno also leads planting schemes with the local secondary school as part of their environmental education classes.

Case Study 5 - Tree Sparrows and Schnapps in Neuffen

Kreis Eslingen (the district council area which contains Neuffen) is the most densely populated in Germany. As if to mitigate this, Neuffen is the most densely planted orchard landscape I encountered, covered in cherry, apple and interspersed regularly with walnut. Neuffen orchards also contain the *Schnapps-kirsche* - a smaller, almost black cherry (possibly a mazzard), much juicier than ordinary varieties - used to make Kirsch. The harvest of publicly owned cherry trees can be bought on application to the council and 84% of these large tracts of fruit trees are designated as *Landschaftschutzgebiete (LSG)*.

Neuffen's position, 24 miles south of Stuttgart and on the edge of the beautiful Swäbisch Alb landscape ensure that the biggest local pressure on the orchards is from housing development. Development pressure is a problem and means houses which are already there are expensive. Land prices are high, where they are not in designated areas. Helmut Reichenecker, my host, took me along a road which had houses on one side and orchards on the other. The designated orchard was worth 5DM a square metre, the housing 600DM a sqm. While the designation does not exclude development, the state must pay the parish 200,000DM as an environmental compensation if it allows construction on a LSG. Swabia's anachronistic inheritance laws make ownership a complicated matter, with scores of people owning sometimes just a few trees for home consumption of the fruit, but this has been a saving grace for many orchards.

Home consumption is still the prevailing use of the harvest. My host, Helmut Reichenecker, Neuffen born-and-bred, announced that both his father and his grandfather drank 800-1,000 litres of *Most* a year, harvested and pressed from their own trees. Today, fewer people press their own fruit but take it to local commercial juicers, where it can be bottled, or corresponding amounts of other juice from the juicer's stock (even orange) is traded in return. Linked to the continued and rising home consumption, over-the-gate sales (enjoyed also by Helmut), and farm shop sales are steadily increasing.

There are also many horses in the area so there is a healthy market in hay taken from the orchards, which is cut only once, late in the season, once all the flowers have set seed. Orchard flowers include viper's bugloss, hay rattle, knapweed and orchids which bus loads of north Germans flock to see in late June. Helmut is a NABU bird recorder for the area and took me on a tour of the orchards to ring tree sparrow chicks. These once common, hole-dwelling birds thrive in old orchards and have benefited greatly from orchard conservation schemes. The orchards are valuable nesting and feeding grounds for these birds and Helmut has erected many sparrow nest boxes among the trees.

Orchard culture is a relatively new landuse in the area. Until the 1950s Helmut's grandfather grew arable cereals beneath the rows of fruit trees. These days grazing is encouraged by state grants. In common with other Swabian areas, the orchards here are very irregular because of the inheritance laws, which make a mixed landuse patchwork. All the orchards are open and unfenced - fences are forbidden. No one minds scrumping - it has always happened and there is plenty of fruit to go round. Access is not a problem because people are allowed into the orchards until March when the grass starts growing, then there is a general understanding to keep off, in order to save the grass. After a while the grass gets too long for comfortable wandering around the orchard anyway.

Helmut feels strongly that artificial nature conservation won't work - it has to be done as part of the culture and active landuse. 'We don't live in a zoo,' he feels. There needs to be a clear understanding

of the benefits of the traditional orchards in a wider context, not just whether they are profitable. For example, the dirty air produced in Stuttgart is cleaned partly by Neuffen orchards and woods, which also provide relaxation, recreation and food to city visitors. Local farmers feed their cattle on imported soya pellets and keep them inside all year round, rather than grazing their beasts. We should feel happy to demand payment for the positive contributions orchards can represent.

The inheritance tradition means that many people are part-time farmers who at best can only make a proportion of their living from their land. There are only 2 full-time farmers in the parish. Walnuts, juice/cider and hay are the main orchard crops for the home. Helmut doesn't run a local juicing scheme but he does get the crop from his own inherited trees pressed. His trees stand among hundreds of others in an enormous open orchard of mixed fruit trees including pears, damsons, cherries and apples. Helmut encourages consumption of local products as a way of decreasing food surplus. He feels strongly that farmers need to be an integral part of nature conservation. The work they do which does benefit nature, such as mowing or tree pruning, is done by them professionally and as part of their living; they are generally better and quicker at the practical work than conservationists or voluntary groups. Grants will help them understand the wider nature benefits and support farmers to keep managing their orchards.

Neuffen supplies 80% of its own water from a volcanic well. It is a *Wasserschutzgebiet*, an area of water conservation, so people have to be careful about what goes into the watercourses and aquifers.

The area's vineyards are now at optimum capacity for current levels of demand for wine, although in the past the vineyards used to cover lower parts of the slopes and the higher woodlands were also lower than they are today. Orchards have replaced many of the lower vineyards. Conservation of this habitat doesn't need to be too fussy, as long as the varied and juxtaposed structure is maintained: dense mixed woodland, vineyards, traditional orchards with grass, meadows and market gardens. They have a ski-lift up to the Alb which could be a good way of viewing the orchards when in blossom.

Case Study 6 – Nature in the balance at Entringen

At Entringen, not far from the old university town of Tübingen, the village peters out at the flat farmland to the east. To the west the ground rises through orchards into vineyards and dense woods. A former Prime Minister of Baden Württemberg described the view from the hill above Entringen as the best in the state. The orchards themselves were originally vineyards until the devastating insect attack of vine phylloxera in 1805. A case of all the eggs in one basket, the aftermath of the pests heralded the start of a rich orcharding culture. My guide was Rainer Gottfriedsen, a biologist and member of NABU's national orchard working group. The soil beneath the orchards was formerly cultivated and the current meadow ecosystem is about 150 years old. Yet signs of the former cultivation are still obvious in places because of traces of ridge and furrow in the grassland. Most of the orchards are owned in very small plots (inheritance laws). This means that farming doesn't support people's livelihoods on its own and that each plot is managed to a different degree of intensity or neglect.

The biggest nature conservation challenge is to keep the fertility of the soil low in order to accommodate the diversity of hay meadow species, which include cranesbills, clovers, vetches, scabious, meadow clarey and maiden pinks. This means continuing the traditional mowing pattern, but these days there is no market for domestic hay - people keep fewer beasts and imported hay is cheaper for horse owners. Some thought has been given to starting a hay-composting scheme, but the cost implications are uncertain.

The landscape is a contrast of extremes: the levels are cultivated with grain, while on the hilltops are covered in forests. The orchards are on the slopes in-between and continuing their management is both hard work and expensive, so the orchards quickly turn to scrub. Also fewer people bother to keep sheep or cows, so grazing is no longer practiced, except by the occasional horse.

The parish council and population were very supportive of the Natura 2000 designation bestowed by the EU and the Naturschutzgebiet state designation, which was hard fought and won. The popularity of the designation is in no small measure linked to development restrictions linked to it and the areas abutting it. This is a significant detail for the villagers. The orchards encircle the hill-side of the village and were planted close to the houses so people didn't have to carry the heavy harvest too far down the slopes. In comparison, the cereal is further away on the levels, from where it can more easily be carted. Therefore, because the historic planting pattern of the orchards was close to the settlement, the modern planning regulations, by association, limit development in the village, too.

Species in the orchards include wild bees - 160 wild bees species inhabit the area and during my visit in late June, the air was alive with humming. The orchard nature reserve also supports the checkered skipper (*Schachbrettschmetterling*), *Halsbandschnäpper* - a relative of the pied-flycatcher not native to Britain (*Ficedula hypoleuca*), wrynecks (extinct in Britain since the 1960s and associated with Kentish orchards), redstarts and honey buzzard. All of these species are declining in south-west Germany due to lack of habitat management. One of the biggest problems is how to conserve the meadows beneath the trees. Management of the meadows which include pinks, rare yellow clovers and quaking grass, is by either grazing or by hay cuts is vital but not helped by air pollution. Even if hay regimes are continued, grassland eutrophication occurs because of all the pollutants in the air get dissolved in the rain which then enriches the ground. Entringen is unique as an orchard Naturschutzgebiet.

SPAIN/BASQUE COUNTRY

Reviving cider - the death knell or the life-line for traditional Basque orchards?

The traditional Basque caserío (farmstead) comprises about 4 or 5 hectares. About half of this land might commonly be covered with woodland trees such as beech and oak as well as orchards, particularly on the slopes too steep for grazing, the other predominant land use. There is a saying which reflects this: 'Put your worst land for apples.' Apples planted closer to the farmhouse, perhaps for easier transport to the press, would similarly be on marginal land on the verges of lanes or in a rough corner, of no other use. A significant proportion of the caserío produce is still for home consumption and the house design may reflect this, as it did in the parental caserío of César, who, with his English wife Helen Groome, were my hosts.

The farmhouse he grew up in and left only a few years ago is built into the slope of the Karranzan valley. Its ground floor is a stable containing cows at the slope end, ducks tucked into pigeon-holes nearest the entrance and above them, on long roosting poles, chickens. A lean-to outhouse normally shelters a pig, although the many metres of chorizo locked away in a small cupboard near the ducks was one indicator of what had happened to the pig only two days before. Above these stalls is the living accommodation occupied by César's parents and above them in the loft, more salami-type sausages were drying, soon to be joined by drying loins of pork spiced with paprika. Outside the kitchen, the balcony gives a glorious view of the valley and the scattered orchard of damsons (of a variety, César delighted in telling me, called *cojones de fraile* - friar's balls) and apples.

César's cows and sheep graze the orchard. Surprisingly, no cider is made here - the apples are dessert fruit. César and Helen explain that a whole generation of cider drinkers has been lost in Karranza. Beer and wine are cheap and easily available and fewer people are working the land. Individual fruit trees within the orchards are not always replaced as they die, although there have been efforts by some farmers to restock. It is tempting to draw recent historical connections between the Basque language and cider culture: César and his family contemporaries and elders speak Castilian - they cannot speak Basque; his seven-year old daughter speaks, and is taught in, Basque at her local state school. At home Castilian and English are the norm. As Franco stamped out the linguistic diversity of his fascist nation, so was the march of homogenous Spanish living advanced. By contrast, the youngest generation of drinkers, the Basque speakers, are heralding the cider revival.

One of the pressures is that local land use is changing in favour of plantation forestry. Even if people decide to leave farming for a more lucrative life, perhaps in Bilbao only an hour away on the cheap and efficient train, they rarely sell up, but can attract good subsidies to plant woods - Monterray pines in the main, because they grow quickly and need little attention. Thus orchards are disappearing and farmland is changing into forests, resulting in a change in the valley's culture, economy and landscape.

About 20 miles east of Bilbao, Helen introduced me to Txampis Zornotxa from Zamellona and Kepa Leiza from Artea, both cider makers pioneering the revival of high quality artesanal Viscaian cider. Txampis runs a traditional sidraría, a big, beamed caserío farmhouse in which he makes his cider. The origins of sidrarías are unclear but not new. Quite the opposite, they have been places where people have gathered to drink cider from at least the Middle Ages. In a good yield year, cider surplus to home consumption would have been sold or bartered to neighbours. Enthusiastic cider makers began to invite neighbours to tasting in April, a little before the fermentation was finished. Many brought food to eat and share and the sidraría, as a place to drink cider and eat, began to evolve.

Today people pay a fee to drink in sidrarías like Txampis's. They sit on long benches and can help themselves at leisure to the cider from large vats built into the walls. Spouts protrude from the vats at around head height and the trick is to catch the long stream of cider in a straight sided glass, held low below the spout. This is said to aerate the cider and give it a little sparkle. Only an inch or so is drunk at a time, and that not until seated at the benches. Outside the sidraría some old trees survive - widely spreading, low and goblet shaped. Social consumption began to decline in the 17th century, from competition with the nearby wines of Alava and Navarra and by the end 18th century, and cider houses persisted mainly on the coast, where they were frequented by sailors. This clientele formed the basis of the most traditional food accompaniments served at sidrarías, including at Txampis's place - bacalao pilpil (slow-fried cod), tortilla de bacalao (cod omlette) and grilled sardines.

Conclusion

The examples outlined above (to the exclusion of some others, it must be added) to conserve traditional orchards will, I hope, inspire and encourage readers in Britain with their own efforts. For example, the New Opportunities Fund 5-a-day scheme, which aims to increase people's intake of fruit and vegetables, while encouraging physical activity for fitness, could usefully promote the kind of school-based orchard management and juicing enterprise practised at Wilhelm Busch school. Inner city pupils in particular might benefit from understanding and seeing orchard husbandry, eat more fruit and run their own juice bars. The government's Free Fruit in Schools scheme, while ambitious and large-scale, could be organised regionally to support local orchards, rather than nationally for ease of administration.

The emerging regional assemblies will be able to influence the way national and European budgets are spent on agriculture and business development to promote a more diverse land use, where mixed, local food economies can mean better local retention of retail expenditure and a higher skilled workforce in the food sector. These agencies ought to take seriously the power of community-led action. Communities may be motivated by a desire to save local orchards. What should interest health and economic development agencies is what this action means for local jobs, diet and income generation. Public procurement of local fruit juice from traditional orchards could be one area to investigate further.

Specific policy options in support of orchards, perhaps championed by the Parliamentary Cider Group could include:

- developing an action plan to significantly increase the area of orchard cultivation (esp. traditional orchards) by 2020

- reforming the CAP to increase the sustainable production of fruit and vegetables
- including traditional orchards as a habitat in the Biodiversity Action Plan
- developing planning guidance on increasing urban food production, with accessible orchards in the green belt
- including orchards in the woodland creation review (orchards are woodlands planned slightly differently, but no less carefully)
- including school ground orchards in the free fruit in schools scheme
- developing regional orchard fruit supply chains for the free fruit in schools scheme to support local farmers, fruit diversity and seasonal variation
- more proactive DEFRA support for orcharding and juicing (such as via Countryside Stewardship and the Agricultural Development Scheme)
- a parliamentary orchard from which MPs can eat and in which they can wassail

Increasingly, as foot and mouth and BSE crises have reinforced, farming must be seen as part of the nature conservation solution. The countryside, which does so much to define Britain as a whole, and underscores the differences between its counties, is the product of agricultural activity over many centuries. It is only over the last two or three generations that agriculture and nature have been so thoroughly divorced. Both NABU and Rénova have shown how farmers can be supported in the benign exploitation of their landholdings, although the Basque example shows that support must come quickly if the orchards we still have are to be saved and restored. The new measures announced in the government's organic action plan should prove another line of support for traditional orchards to which few artificial fertilisers are applied, and may support a diverse ecosystem with predatory rather than chemical pest control.

Finally, it's a matter of participation at the local level. If we lose our traditional orchards because we abandon them to the many pressures outlined, the loss will denude a vital cultural relationship we have so carefully cultivated with nature. Who is making these decisions on our behalf? In whose interests are these pressures applied? *The apple we eat is the landscape we create* (Common Ground).

Note on currency: This research was carried out at the time of and shortly before the introduction of the Euro. I have not transposed all figures into Euros as this would require further calculation into pounds. Therefore, for the sake of this report, one pound sterling is equivalent to 10 Francs (F) and 3 Deutschmark (DM).

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